António Carlos Valera (Ed.)

FRAGMENTATION AND DEPOSITIONS

IN PRE AND PROTO-HISTORIC PORTUGAL

(LISBON, 14 OCTOBER 2017)

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CONTENTS

PRESENTATION

In the last decades the Portuguese Archaeology has been growing an interest for the subject of fragmentation and for the multiple social practices of intentional deposition in Recent Prehistory and Proto-History, fallowing trails developed in international research. However, reunions to specifically debate such issues and the theoretical frames that have been used to address them are unusual in the national context and even at an Iberian scale.

Considering that these social practices were deeply rooted in Prehistoric societies and are central to the interpretation of their archaeological remains, and aiming to stimulate the debate of these matters in the country, the research unit (NIA) of Era Arqueologia, in partnership with the Interdisciplinary Centre for Archaeology and Evolution of Human Behaviour of Algarve University, organized a workshop entitled "Fragmentation and Depositions in Pre and Proto-Historic Portugal", at Museu do Carmo in Lisbon (courtesy of the Portuguese Association of Archaeologists) in October 14th 2017.

Several Portuguese researchers that, in a way or another, have been dealing with these subjects were invited to participate and present talks addressing theoretical problems, contexts and materials related to the issue. This book reunites seven of the ten presented papers.

The first chapter, by António Valera, highlights the structural relations between the practices of fragmentation and of depositions and the cognitive processes of classification, seen as historically contingent. It is argued that many of these practices, but also of space and time perception and organization, rest in cognitive "versions" that promote a strong permeability between categories and notions of reversible time and qualitative space. Rejecting any kind of structural determinism, it is argued that cognitive approaches are central to the understanding of the Neolithic life and social practices.

Chapter two, by Ana Vale, explores the concept of "structured depositions" using as case study the Castanheiro de Vento walled enclosure, dated from the Chalcolithic. The practises of structured depositions are characterized as assemblages composed by different fragmented elements that may incorporate links to other assemblages. They are considered to be part of the dwelling of the site, participating in the processes space organization and, therefore, becoming part of the site's architecture.

In chapter three, Lucy Evangelista and António Valera address the depositions of human remains in ditches during the Chalcolithic, focusing in the case of Perdigões and integrating it in the global Iberian scenario for such practices. These depositions are presented as part of complex social practices that involve human remains and other materialities, traducing more fluid and permeable categorizations of the world that tend to engender mixing contexts. They are considered to express less bounded and more instable self-definitions, committed to permanent negotiation where identity is constructed by the relations established in each context.

In chapter four, A.F. Carvalho, D. Gonçalves, F. Alves-Cardoso and R. Granja address the Middle Neolithic funerary practices at the Bom Santo cave (in Montejunto mountain, at north of Lisbon). Differences in the ritual procedures between two sections of the cave show the coexistence of diversified practices of body treatment, incorporating primary and secondary depositions, body intentional segmentation and manipulation of human bones. Homologies between the patterns of body handling and the patterns observed in grave goods are suggested. The site is used to present a more complex image of the funerary practices of the period, resulting

from the interaction between communities occupying and exploring a vast territory in both sides of the river Tagus.

Lídia Baptista and Sérgio Gomes, in chapter five, highlight the importance of the study of fragmentation patterns to interpret the negative structures and their fillings in the Alentejo region (South Portugal), during the Chalcolithic and Bronze Age. Reassembling studies allowed the reconstitution of links between structures and structures fillings, at the same time they help to build a more diversified image of the practices involved in these processes, showing that the study of fragmentation and distribution of fragments has high heuristic potential.

Chapter six, by Ana Catarina Basílio and Nelson Cabaço, presents the study of a specific context in Perdigões enclosure, dated from the end of the 3rd millennium BC: a deposition of an assemblage of faunal remains in a pit covered by a stone cairn. Interpreted as the result of feasting, the investment in the construction of a cairn over the pit is seen as a process of memorization, combining the ephemerality of the ceremonies with the endurance of the stone structure, that provides a degree of monumentality to the depositions. Considering the late chronology, integrated a period of decline of Chalcolithic societies in the Southwest of Iberia, it is suggested that this context, in continuity with traditional practices of deposition in the site, could express some form of resistance in a period of social change.

Finally, in the last chapter (Chapter 7), Raquel Vilaça and Carlo Bottaini address the hoard of metal objects during the Late Bronze Age, focusing in the depositions of deliberately broken metal artefacts. Different procedures were identified, which led the authors to consider the absence of a general pattern for Late Bronze Age metal depositions. The variety of fragmentation and deformation of metals is seen as a social practice that expresses world visions and that requires itself some levels of expertise.

António Carlos Valera
Lisbon, 2019

CHAPTER 1

SEGMENTATION AND DEPOSITIONAL PRACTICES IN PREHISTORIC SOUTH PORTUGAL: BETWEEN ONTOLOGICAL STABILITY AND FLUIDITY.

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[Porque não submeter a interpretação dos dados a] "uma razão mais ampla e para a qual são racionais não poucos objectos que perante a velha raison ou razão conceptual ou razão pura são, com efeito, irracionais". [Why not submit the interpretation of data to] "a broader reason to which are rational many objects that in face of the old reason, or the conceptual reason, or the pure reason are, in fact, irrational.")

J. Ortega y Gasset (1994: 67)

Abstract

Undoubtedly, there is a tradition in Portuguese archaeology of addressing specific depositional practices: the metal deposits, namely those from Late Bronze Age. The same doesn't happen regarding the fragmentation and intentional deposition as recurrent social practices and as forms of communication and organization of communal life during all Recent Prehistory. Only recently these concerns started to emerge, mainly focused in the identification of intentionality and possible meanings and functions, but paying less attention to the more structural bases of these practices, such as the ontological, cosmological, psychological and cognitive ones.

This paper underlines the relations between practices of fragmentation and intentional deposition (structured or selective) and those more structural grounds, arguing that there is a correspondence to more fluid world views and experiences, which these practices express and recursively produce. A contribution to an inquiry renewal is envisioned as means of rethinking the nature of archaeological sites and contexts, underlining the importance of the intangible for historical narratives of Recent Prehistory in Western Iberia.

Keywords: Ontology; Fluidity; Segmentation; Participation.

1. Introduction

Addressing intangibility in Prehistory has been frequently considered an ambition beyond the terms of Science. However, neither the terms of Science are indisputable dogmas, nor the claim to speak about the human being without considering the more intangible dimensions of life is a credible intent. That would be a sort of desertion in face of the obvious difficulties and a reduction of the discipline in its social grasp. When the young Albert Jacquard asked, "who am I", he was answered that he was a body and a soul, which he considered to be a very unpleasant way of dividing him in two. Archaeology is not complete if it doesn't have the ambition to wander, in a controlled but decisive way, the hard and slippery grounds of the intangible. It is significant, though, that, having the purpose of talking about intentional fragmentation and depositional practices in Portuguese Recent Prehistory, I still feel the need to reiterate that.

Intentionality is here a main issue. Some archaeologists have been considered "too willing" to detect it in material culture patterning (see Garrow 2012 and discussion) and the difficulties to access the immaterial in the Prehistoric past are obvious. Nevertheless, it is also obvious that intention is part of human action and of the historical facts involving it, and that we cannot pretend to deal with human behaviour leaving aside a part of what makes it human: consciousness, representation, reason, will, intention or meaning (independently of the levels of polarization we may be tempted to establish in the duality structure / subjectivism). In fact, overcoming of the dichotomy between a husserlian "society of meanings" that privileges agency and the dilution of passive individuals in the social, the Bourdieu's concept of *habitus* (Bourdieu, 1994) expresses exactly that (as, in a slightly different way, does the theory of structuration of Giddens – 1979). The design of the socialization process as (1) learning, (2) internalization and (3) engagement in social practices that reproduce / redesign the social context, establishes a recursive relation of dependence between structure and agency. Intentionality expresses, at the same time it contributes to forge, the social conditions that frame agency. So, intentionality, will, representation and meaning, matter. Following this path, the growing concern of Archaeology with interpretation led to the development of a diversity of inquiries and approaches to material culture and contexts. That has been the case of intentional practices of fragmentation and of deposition (e.g. Richards, Thomas 1984; Brück 1999; 2006; Jorge *et al. 1998-99;* Champan 2000; Chapman, Gaydarska 2007; McFadyen 2006; Harrell, Driessen 2015).

When approaching these social practices several aspects are considered: the choice of the objects (variability of category, morphology, raw material, etc.), the way they were manipulated (integrity, fragmentation, burning, etc.), the internal distribution of the objects (that is, the internal organization of the depositions), the temporalities of the depositions, the architectonic structuration of the contexts where depositions/fragmentations take place and the supplementary relationships (like the ones involving landscapes, visibility, routes, orientations, etc.). Other elements also relevant for the analysis are more difficult to access precisely due to their intangibility. Those could be designated as choreographies of depositions/fragmentations (gestures, clothing, who does the deposition or fragmentation, sounds, aromas, sequences of procedures, who can assist, etc.).

Considering all these aspects or just some of them, three main facets of the problem have been privileged in the archaeological debate: first, the issue of the recognition of the intentionality of the depositions and fragmentations; secondly, the matter of interpretation, by proposing meanings and functionalities to that intentionality; and thirdly, the matter of explanation, by trying to understand the social systems that framed these practices, and in which they were recursively active (Chapman, Gaydarska 2007; Renfrew 2015; Nanoglou 2015). This paper, though, is concerned with a fourth possible way of addressing the problem: the issues of ontological, cosmological, psychological, and cognitive nature that also outlined these practices. However, and in line with what was argued above, it is important to stress from the beginning that this intent is not a recreation of any kind of structural determinism of cognitive bases, but rather a statement that a historical and recursive relation exists between social practices, world views and cognitive operative models. They form an integrated and complex system, and if the human action is not independent from the ways in which the brain operates, these ways are not independent from human action (Santos 1982; Karmiloff-Smith, 1992; Donald 1999; Gardner 2002).

2. Permeable categories

Every thought or every perception, every language or action, is rooted in cognitive processes of categorization. That is the mind procedure. To know and to think is processing and organizing the cosmos in a limited number of "boxes" (our concepts and common names), where we store the unlimited variability and diversity of the world (Vignaux 2000; Valera, 2007). This process of categorization, without which consciousness, thinking and language are not possible, operates in time and space: it is historical and contingent.

The historical approach to the function of human mind has always been uncomfortable with the possibility of misuse and stimulation of ethnical prejudices. When trying to justify the title of a conference (The ancient mind. Elements of cognitive archaeology), Colin Renfrew almost apologise for a possible implicit suggestion of a different function of human mind in the past, and even suggested the inconvenience of the title of Lévi Straus's work "La pensée sauvage" (Renfrew 1994). Even so, he recognized the historicity of operative cognitive abilities and the relevance of consider pre-modern ways of thinking. The developments in cognitive sciences, psychological studies and anthropological perspectivism, among others, show that there are historical contextual differences, not in the structure of the mind, but in how the basic categories of representation are processed according to time and place. The highlight is put on difference, not implicating an evolutionary perspective nor any appreciation of superior or inferior forms of thinking. Is just a recognition of difference and change or, in the words of Lévi Strauss, "versions" in which the human mind function and that correspond to contextualized modes of reasoning (Karmiloff-Smith, 1992; Criado Boado 2000).

In fact, anthropology has been documenting the existence of more fluid and porous processes of ontological categorization in many societies (Hallowell 1960; Eliade 1969; Strathern, 1988; Viveros de Castro 1998; 2004; Busby 1997; Vilaça 2005; Ingold 2000), as opposed to the more bounded perceptions that characterize the western world. This led several authors to consider that the modern western notions of individuality and unity as closed entities are inadequate to deal with more dividual and ambiguous personalities and entities of the Prehistoric past (Bird-David 1999; Fowler 2004; 2008; Hernando 2002; 2004).

Independently of the criticism to an excessive individualism and bounded ontology attributed to the so called modern way of thinking (Busby 1997; Smith 2001; Borić, Robb 2008; Harris, Robb 2012), for we can easily find in the today's western world traces of diverse forms of animism, anthropomorphism and more permeable ontological boundaries or even plural ontologies, it seems unquestionable that different historical-cultural contexts generate different forms of categorising or organizing the world and diverse processes of self and collective identification.

For European Recent Prehistory, there is plenty of data suggesting a more distinct ontological and cosmological fluidity and instability affecting everything. A larger fluidity in cognitive processes of categorization generates a higher permeability between categories, between the "boxes", encouraging genuine networks of "ontological circulation". People, animals, objects, plants, landscape features, natural occurrences, occupy more or less opened conceptual spaces, permeable to each other, allowing mobility, ontological parities and hybridity. It is in this kind of permeability and parity that world views, like animism, totemism and magic-religious systems such as shamanism, *vudu* and witchcraft, are founded. This ontological fluidity generates operative principles that progressively became stranger (or masked) to the modern way of thinking, but they conditioned and conformed the human action and its material remains, being central in the heuristics of Prehistoric societies.

It is important, though, to reassert that these more fluid ontological borders are not completely eradicated from the so called westernized way of thinking. In fact, if any approach to past societies demands awareness of the traps of anachronism, it is also recommendable that we "resist the construction of rigid boundaries that set the ancient apart from the modern as an ontologically distinct "other" (Smith 2001: 157). In other words, there is a "fluidity" between "us" and "them". It is that fluidity, captured by Gadamer (1998) in his concept of "tradition" (or in the Bourdieu's *habitus*), that makes it possible for the present to speak about the past without falling in any strict presentism at the same time it attempts to control anachronism.

Taking this in consideration, four aspects of cognitive processes will be addressed: the psychological participation, the relation part/whole, the reversibility of time, and the qualitative perception of space.

3. Principle of psychological participation

The ontological permeability allows the characteristics and "essences" of some entities to be shared (participated) by others, generating relations of higher intimacy between different elements. The similar treatment conceded to human and animal bodies, the genealogy of human lineages rooted in animals, the magic or the ability to interfere in the destiny through gestures or specific procedures (like a *vudu* ritual, a promise, a painting in a rock, a sacrifice, or a deposition), or the capacity of ontological circulation of a shaman, all are based on that fluidity, where elements of a category may participate of essential aspects of others.

These circumstances provide the materiality with endless potential. Not just with the possibility of participating of human characteristics and agencies, but also with the ability to acquire magical valences or essential primordial properties. Symbol and symbolized are fused, and the representation does not represent: it "is". A *vudu* figurine does not represent the victim, it is the victim; the communion wafer does not represent the body of Christ, it is the body of Christ; and in television we do not die of cancer but of prolonged disease, because the word participates of the essence of the terrible and unpronounceable illness. Some of these processes of participation are suggested by some Neolithic and Chalcolithic contexts of southern Portugal.

In the late Middle Neolithic and Late Neolithic, a specific ritual practice has been identified in funerary hypogea necropolis of Alentejo region: de deposition of ovicaprid phalanges associated to the human remains. This has been recorded at Sobreira de Cima (Tomb 1 and 5), Outeiro Alto 2 (Tomb 4/5), Quinta da Abóbada (Tomb 2) and Vale de Barrancas 1 (Tomb 3) (Valera, Costa 2013; Valera, Filipe 2012; Valera *et al*. 2017; Nunes, Valera in preparation). In the case of Tomb 5 of Sobreira de Cima, the ovicaprid phalanges were clustered together with the human phalanges inside a large ossuary (Fig. 1: 1), where no other animal bone was recorded. They were also mainly associated to bones of sub-adults, the same happening in Vale Barrancas 1. This practice is different from the later (Chalcolithic) incorporation of deer and horse phalanges in the funerary contexts, frequently carved and decorated to acquire a schematic anthropomorphic shape (see Valera 2015). The meanings are difficult to establish, but the association observed in Tomb 5 of Sobreira de Cima and in Vale de Barrancas 1 and the recurrent presence of these specific bones in this precise period of time (second half of the 4th millennium BC) suggests some sort of participation between the human and ovicaprid phalanx or that these bones were seen as sharing properties or essences that provided them with agency in funerary contexts.

The presence of ivory since the late Middle Neolithic until the end of the Chalcolithic in the late 3rd millennium BC in Central – South Portugal can also be addressed from this perspective. So far, ivory from sperm whale, fossil Pleistocene European forest elephant, African savannah elephant, and Hippopotamus has been identified (Schuhmacher, *et al*. 2009; Valera, *et al*. 2015, Carvalho *et al.,* 2018). In face of these provenances, a question was asked (Valera 2010): what knowledge the prehistoric communities of central – south Portugal had of these animals? Sperm whales have migrating trajectories in the North Atlantic, so it is plausible that they were seen (see the interpretation of some iconographic representations in Britany megalithic monuments – Cassen 2005) and that exploitation of some carcasses driven to shore may have occurred. But regarding elephants the question remains: Did they knew the animal? What image or representation they made of it? What place was reserved to elephants in their imaginary? In other words, would ivory be just raw material, valued by its rarity, distant provenance, and visual characteristics? Or to this value were added other meanings related to the animal and to its ontological status in the world views of the time? It is important to note that we are talking not just about artefacts made of elephant ivory (objects of personal adornment and objects concerning shared symbolic and ideological principles), but also of the tusks themselves. They appear in funerary contexts, for instance in the structure 10042-49 of PP4 sector of Valencina de la Concepción (García Sanjuán *et al*. 2013), in Alcalar (Estácio da Veiga 1886-91) or in the cremations in Pit 40 of Perdigões (Valera, *et al*. 2015). The incorporation of the tusks in funerary

contexts has been seen mainly in the perspective of the value of an exotic product. Value, though, is a complex issue involving variables that go far behind its economic rate measured in terms of costs of production or exchange capacity. It also deals with the biography of things (Appadurai 1986) and with attributed meanings and properties. In the case of elephant ivory, it was not just the raw material that was exotic, but also the animal and its size and appearance. Such an animal would have had a strong impact in Iberian Neolithic and Chalcolithic people, especially because in most of the situations it would be through oral descriptions and storytelling, allowing animal characteristics to be emphasized by imagination. It is plausible that elephants would have a special significance in these people imaginary and that, through the principle of participation, ivory would share that primordial status, incorporating real or mythical properties of the original animal, enhancing the social value and agency of ivory objects.

The difficulty to deal with these issues should not elude their pertinence while addressing the social role of raw materials. Many ethnographic studies illustrate the attribution of properties and intentionality to raw materials and document the ritualization of the technological processes (see Tilley, 2001; Pétrequin, Pétrequin, 2008). Frequently, those attributes are associated to the meanings and "essences" of the local or of the entity where the worked material comes from (Scarre 2004). It is a process of personification of natural elements, which qualities stay active (are participated) in the extracted raw materials and in the way they were used. And many of those properties may inclusively be participated by the ones who extract and work those materials.

A good archaeological example of that can be argued again for the Neolithic hypogea necropolis of Sobreira de Cima, that presents a ritual manipulation of amphibolite without parallel (Valera 2009). Amphibolite is used as architectonic material (in pillars, wedges, and door slabs) and ingots preformatted for polished stone tools were deposited in the closing fillings of the access to the funerary chambers (Fig. 1: 2). They do not occur inside the chamber, where other votive materials, inclusively finished polished stone tools, are present. Therefore, these raw materials do not seem to play a role similar to the funerary gifts. They are not individual or collective offerings to the dead. They rather seem to talk about a central aspect of their lives. This necropolis is not far from amphibolite outcrops, where surface findings attested the extraction of this raw material. The community buried there seems to have been involved in the extraction of amphibolite and possibly in its circulation. In this case, a process of identification between the raw material, the activity and the community emerge. Consecrated by these depositions and architectonic use, the amphibolite raw materials seem to assume an emblematic role, functioning as cement in the construction and reinforcement of identities. Furthermore, this emblematic role and use in the funerary context could make the amphibolite raw materials one of the targets of the ritual practices. In this sense, through a process of homology, it would be less a votive material, and more a member of the community. More than simply represent the community in an iconic and emblematic manner, it would be in the condition of member, participating in the identity of the group, that amphibolite was integrate in the funerary contexts.

Other examples show the physical materialization of this principle of participation. Things and beings are not just ontologically fluid and instable, they are also partible. Their parts may be integrated and mixed in others, transporting primordial essences and integrating them in new compositions. That can be seen in the recurrent practice of integrating previous objects or parts of objects in new materials or constructions.

One of the situations is the integration of earlier stelae or stones from previous buildings/monuments in later megalithic constructions, a circumstance with multiple examples in Iberia and in the rest of Europe (Fig. 2). This practice was considered to have an ideological role in the building of megalithic monuments (Bueno *et al*. 2014; 2016; 2017), related to the symbolic and political use of the ancestors. The incorporation of the past in the present through its physical elements or parts generates a sense of primordial stability, merging present and past, the new with the old, creating the illusion of continuity and masking change. Something that can also be seen in the incorporation of older stones in new residential buildings, as noted for the walled settlement of São Pedro, Évora, where several stones with multiple cupmarks were reused and interpreted as reinforcing practices and meanings related to ancestors (Mataloto *et al*. 2015).

The same general practice can also be documented by grog in pottery production (Brück 2006). If a specific technical function can be ascribed to the incorporation of grains of previously
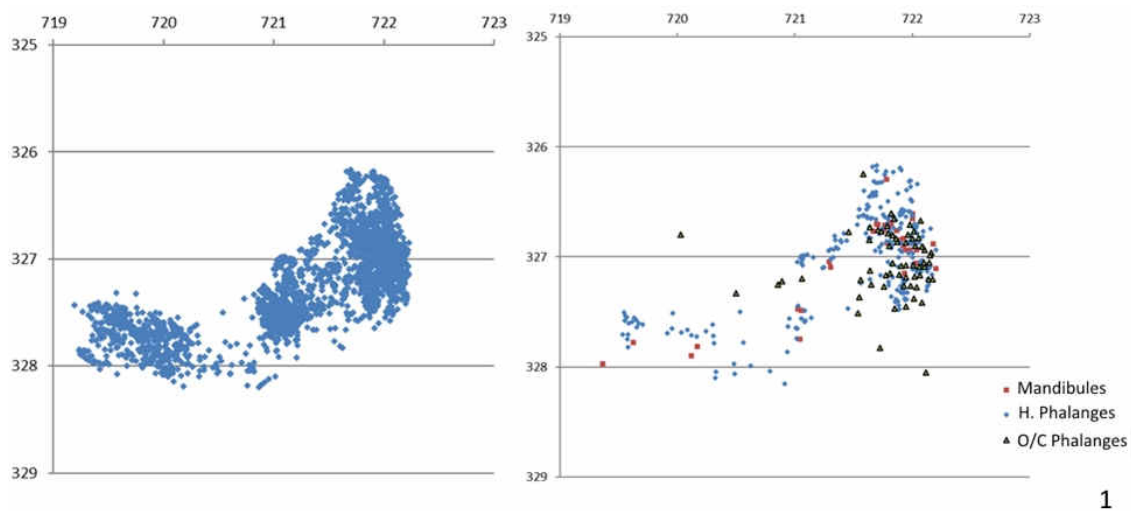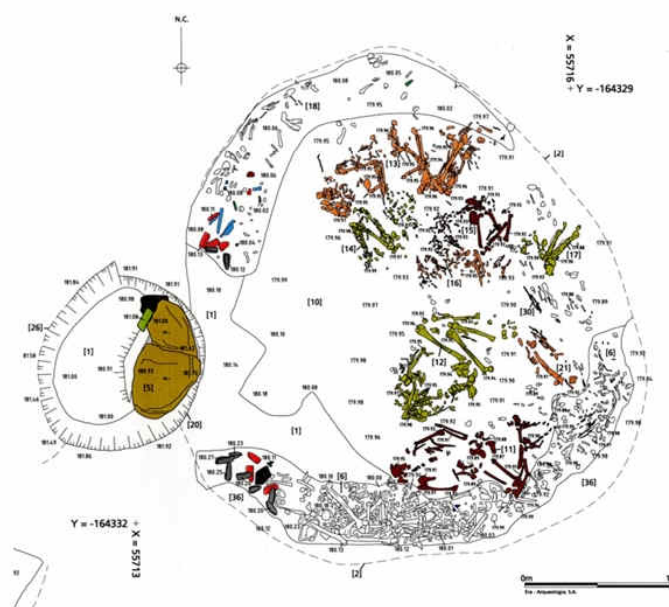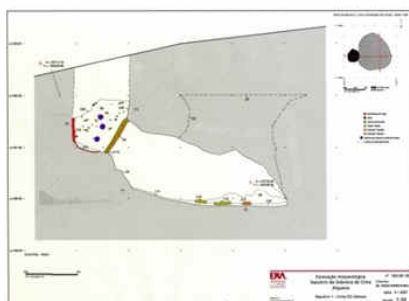
Figure 1 – Sobreira de Cima. 1. Distribution of human and ovicaprid phalanges in Hypogeum 5; 2. Hypogeum 1. Plan and profile and closing of the entrance with an amphibolite slab and the deposition of amphibolite ingots in the filling of the access pit.

grounded pottery, the technical procedure may be incorporated with meanings that inclusively may be part of the procedure and seen as central to its good outcome. The fragmentation of pottery and the reincorporation of its fragments in new pots mixtures past and present, allowing the new

to participate of the old, or the old to be regenerated in the new. The inlayed pottery decorations that uses grounded bone can also be seen from this perspective (and not just as means of enhance the decorations). Integrating the bones of an animal or of a human being in the pot decorations may be seen as a materialization of that permeability of categories (Fowler 2008).

Figure 2 – Reuse of a stelae in the megalithic monument of Motas 5 (Monção). Excavation Omniknos, Lda.

Another example of this incorporation of things and their "essences", encouraging mobility and interaction between entities, comes from the Neolithic site of Ponta da Passadeira, near Lisbon. There, a human bone was integrated in the clay of a feature (feature XXV) used for pottery production (Soares 2013a). The interpretation provided was that the bone was inadvertently integrated, as a result of the extraction of clay in a presumed, but not identified, close necropolis. In the context of a more permeable ontological and cosmological frame this circumstance gains new interpretative possibilities. The mix of a part of a human in the architecture of a productive structure could be intentional and could be seen in the context of these ideological strategies of circulation between entities and renewal through the participation of the old and meaningful in the new (in this case in what generates de new – the feature).

In sum, the physical partition and the reincorporation of materials in new productions act as materialization of more permeable and mobile ontologies. They generate metaphors for the cyclicity of life, where the new gets stability by participating of the old, and the old is regenerated and prolonged by participating in the new, in a way that can be associated to the human life cycles (Brück 2006).

But the ontological permeability and the participation of essences also stimulates hybridism (Nanoglou 2012).

Prehistoric hybridism is frequently discussed in rock art studies. In the Neolithic and Chalcolithic of Western Iberia, though, evidences outside rock art that can be interpreted as expressions of hybridism are not frequent, perhaps due to a research tradition less alerted to its recognition. But the issue can be discussed in some cases.

Figure 3 – 1. Joined deposition of extremities of mandibles of a pig and of a horse, facing opposite directions, in Pit 84 of Perdigões; 2 – Clay figurines from V.N. de São Pedro; 3 – Clay figurine from Perdigões.

At Perdigões Pit 84, dated from the Chalcolithic, the extremities of a pig mandible and of a horse mandible were deposited joined but facing opposite directions, in a Janus way (and curiously Janus is the roman god of gates, transition, and duality), suggesting the merging of some sort of oppositions (Figure, 3: 1). Another situation is represented by some clay figurines recorded at Perdigões enclosure, but also at the walled enclosure of Vila Nova de São Pedro (Fig. 3: 2-3). They are shaped with an ambiguous purpose, an intentionality that can be deduced from the realism and technical ability exhibit by some carved human and animal figurines of the period (Valera *et al.* 2014). They are shaped as an arc, suggesting legs, with a protuberance in the top, suggesting a head. It is difficult to decide if they represent humans or animals, although one peace

presents four legs, suggesting a quadruped (Fig. 3: 2). For the majority, though, the ambiguity prevails, traducing a perception of flexibility and the mutability of the categories, undermining the notion of unity. Other forms of hybridization are possible, namely the fusion of symbols, such as the decorated schist plaques and the "almeriense" figurines, or the sun representations and the eyes of some anthropomorphic figurines.

4. The relation part/whole

The same principle of participation sustains an essentialist relation part / whole, which provides fragmentation with an extraordinary potential. Just like one thing may participate of the "essence" of another, one part (one fragment) may share the completeness of the whole. Again, a good example is the communion wafer. If the whole is the body of Christ, the part isn't the leg or the arm, but still is the complete body of Christ (the whole). It is the principle of the relics, that has been proposed for human remains in certain situations, as is the case of the skull of La Vaquera (Delibes de Castro *et al.* 1999). The participation principle provides fragmentation with a significant ability for social agency. The capacity of decompose the unity in parts maintaining the original "essence" in each part creates the possibility of dissemination of ideas, meanings, and relations through fragments. The segmentation in half or smaller parts and their distribution allows the "essential" aspects participated by the object, like a ceremony, the person that own it or the significance of the moment of fragmentation itself, to be shared and spread, crossing space and time, and reinforcing the bonds between people, places, and events.

A good example comes from the ivory *lunulae* of Tomb 2 of Perdigões ditched enclosure (Valera 2010a). There, an assemblage of 14 different objects was collected, being one complete, six fragmented in half and the rest corresponding to seven smaller fragments (four extremities and three middle parts). It was noted that the six halves corresponded to the left half and the same was happening with the smaller fragments with just one exception (Fig. 4: 2). So, 92% of the fragmented *lunulae* represented the left side of the object and that pattern was considered to be intentional, not resulting from a random fragmentation of taphonomic nature. The fragments were considered to represent bonds and several hypotheses were suggested. The possibility that fragmentation was previous to the death, being the fragments introduced in the funerary contexts already as belongings of the deceased. The link was not related to the death but to bonds contracted before. Other possibility is that fragmentation might have occurred during funerary practices, remaining one fragment with the dead while the other fragment or fragments were distributed among the living, maintaining previous bonds, and the permanence and completeness of the ceremony/moment of communion. In this case, the *lunulae* could belong to the dead or to the living. Being death seen as a moment of transition (and not of an end), the desire for preserving the bond could be "mutual" and achieved either by fragmenting an object of the deceased or of the living person. In one situation, the bond would be preserved by the living retaining the dead through a part of him, in the other the "traveller" would take the living by carrying a part of him.

Half parts seem to have played significant roles in ideological display of these communities. The frequency of depositions of half pots is testimony of that. It is not easy to brake a pot precisely in half and the frequency of findings indicates that the fragmentation was not random. Examples of these depositions of half pots can be found at the "atrium ditch" of Carrascal 2 (Fig. 4: 3), where several halves accompanied the secondary deposition of human remains. They occur also at the Hypogeum 1 of Perdigões enclosures (Valera 2018) (Fig. 4: 1) or at Pit 50 of that same site (Fig. 5). In this last case, the pit, located precisely in front of the western gate in ditch 10, was filled with layers containing faunal remains (with several animal limbs in anatomical connection) and very small pottery sherds almost without remounting. In the last fillings, though, three half pots (a plate and two bowls) were deposited and the filling was finished with the deposition of a complete pot laying in a bed of small stones (Fig. 5) associated to a clay anthropomorphic figurine. The filling sequence shows a trajectory from high fragmentation to half parts and then to completeness, as if the process of filling incorporated some sort of metaphoric meaning where part / whole relations were significant. On the other hand, these strategies of fragmentation also seem to respond to principles of symmetry, that have relevance in many megalithic constructions and, as symmetric oppositions, in some depositions (see ahead).

Figure 4 – 1. Pot broken in two halves that were deposited apart in Late Neolithic Hypogeum 1 of Perdigões (Reguengos de Monsaraz); 2. Complete and half *lunulae* from Chalcolithic Tomb 2 of Perdigões; 3. Half pot fragments from the Chalcolithic atrium ditch of Carrascal 2 (Ferreira do Alentejo).

Figure 5 – Chalcolithic Pit 50 of Perdigões. The pit is located in front of the western gate of contemporaneous Ditch 10. In the closing of the pit halves of three pots (one plate and two bowls) and one rim were deposited. They were covered with sediment and then, over a bed of stones, a complete pot was deposited.

Another interesting situation, regarding the bell beaker pottery in inner Alentejo region, has been recently noted (Valera *et al.* in press). Contrary to other regions, in this area decorated bell beaker pottery is rare in funerary contexts, appearing mostly in settlements or ceremonial enclosures. However, it is in the few funerary contexts, mainly reuses of earlier megalithic monuments, that we find complete decorated bell beaker pots. In the settlements and ceremonial places, we have mostly or exclusively small sherds. This could be attributed to the contextual differences between funerary and settlement sites, where fragmentation could be higher due the vicissitudes of daily life. However, some of the later contexts suggest otherwise. In Monte do Tosco 1, almost all the beaker sherds were inside hut 1. They were very small and with rare remounting, representing different pots (Valera 2013a). The same general situation occurs in Porto das Carretas, with 14 small sherds from different pots in a restricted context (Soares 2013b) and at São Pedro, where 16 small fragments also representing mostly different vessels (Mataloto *et al.* 2015). A similar situation may be assumed for Miguens 3. These sites were excavated in large areas, so the rarity, the high fragmentation with little or no remounting and even the contextual concentration of beakers sherds in specific structures are representative and significant. In the context of the potential agency of fragments, easy to move and to exchange, particularly if they are fragments of special things, these contexts strongly suggest that what was in fact circulating and accumulated in these sites were fragments of decorated bell beakers, rather than complete vessels. And these fragments could very well have assumed the status and the social roles of the complete pots, or report to the moments/contexts where they were broken and retrieve their value and meaning from there.

Segmentation in the context of the meaningful relations part / whole can also be detected in architecture. Recently, the dismantling of stone circular structures (huts or towers) was highlighted. The structures, mostly dated from the middle / second half of the 3rd millennium BC, were recurrently dismounted resulting in the preservation of just a segment of their circular plans (mostly between 60% and 20%), suggesting a specific social practice (Fig. 6). Two interpretations were suggested: the result of curation practices after abandonment; the integration in the broader context of segmentation practices and their relations with closing ceremonies, memory, and reinforcement of social relations (Mataloto *et al.* 2015; Valera *et al.* in press). The two hypotheses may even be integrated, since the curation could accomplish its functional purpose being impregnated of symbolism and of ceremonial ambience. It would be a similar process to what we can see in the meaningful incorporation of older stones or stelae in megalithic monuments. Just here we see the "old", the "ancestor", where the stones were taken from, and have more difficulties in determined where they were reused.

"This interpretive approach would lead to the idea of a deconstructive activity as socially powerful as the constructive phases and to the awareness that dismounting could be a deliberate act of disclose of what was previously enclosed by architecture. This practice can also put an end to the active life of a space while simultaneously providing materials that may be reused as memories and links to the past. (…) This dismounting process could easily be related to a fractal and fragmentation perspective that has been mainly thought to objects, but that could be extended to bodies, or to architectures." (Valera *et al.* in press).

But segmentation in architecture is not restricted to removing parts. It is also present in construction phases, by building through segments. That has been noted for several ditched enclosures, where the enclosed areas result, not from an excavation of a continuous ditch open at once, but from the addition of segments of ditches (Valera 2012; 2015; 2018). Each new segment overlaps the previous one, often when the earlier is already filled and present different dimensions (Fig. 7). A combination of parts forms the enclosure, resulting from processes of excavation and filling differed in time and frequently with formalized depositions. These segments may be built by different segments of the communities, materializing the social organization, and the involved communal work can be a factor of aggregation and reinforcement of cohesion (Bueno *et al.* 2017). Architecture becomes a metaphor and a model of social relations and of social organization (Bourdieu, 1977; Giddens, 1979; Donley-Reid 1990). As noted above, these processes of segmentation and deposition may incorporate metaphorical links to the life cycles (Brück 1999; 2006), such as death/closure, reuse/rebirth, associating biographies of structures and biographies of people who used them (Hanson 1998), helping to mantain a cyclic perception of time.
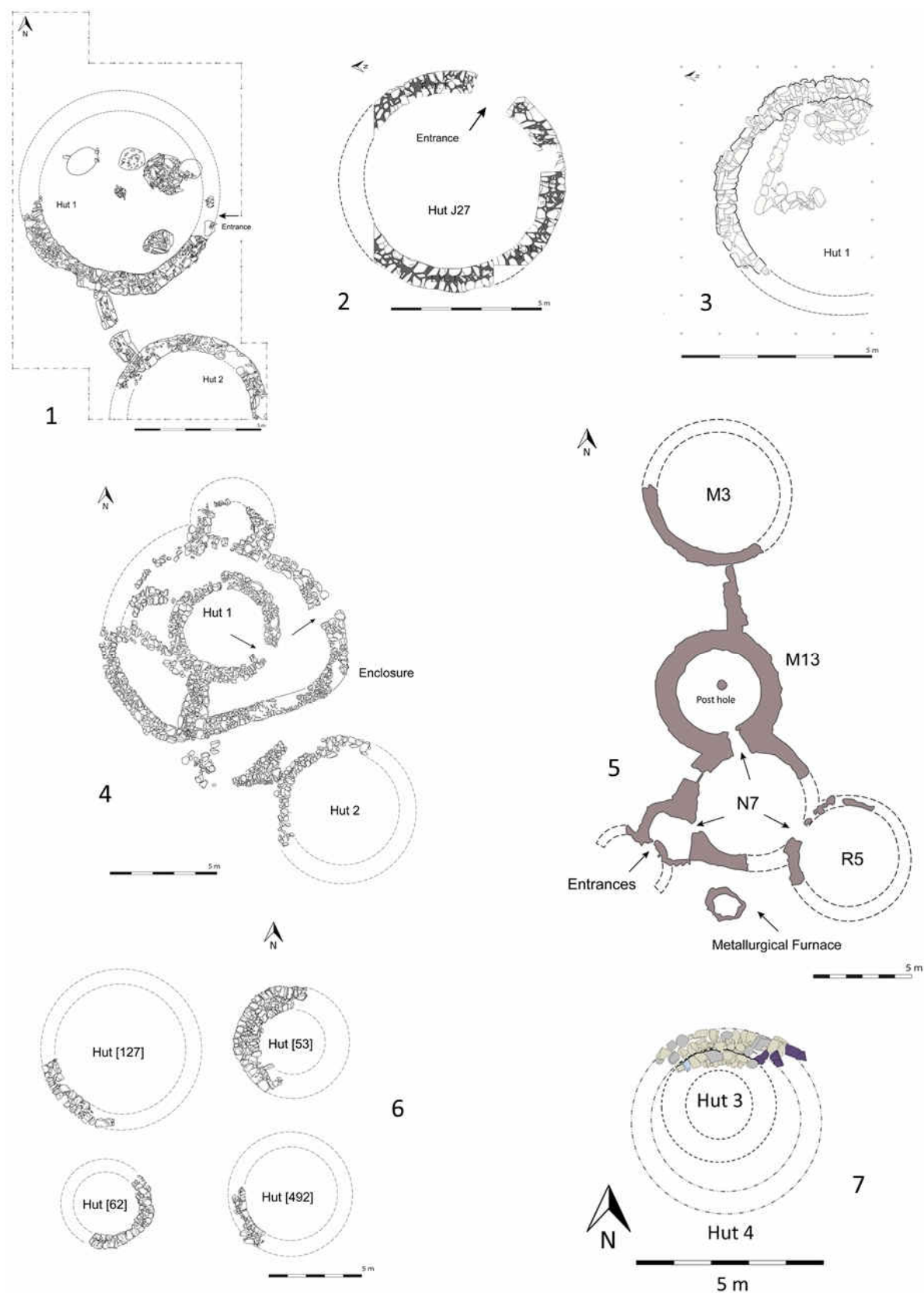
Figure 6 – Dismantling of circular stone structures in the Chalcolithic. 1. Mercador; 2. San Blás; 3. Monte do Tosco 1; 4. Miguens 3; 5. Porto das Carretas; 6. São Pedro; 7. Perdigões. Images taken from Valera *et al.,* in press (see publication for references on each image).

Figure 7 –Building through the addition of ditch segments with different dimensions and fillings. 1. Perdigões (Late Middle Neolithic); 2. Bela Vista 5 (Transition to the Bronze Age).

5. The perception of a cyclic time and of a qualitative space.

This mobility between part and whole, between decomposing and composing, allowed by participation and ontological fluidity, also talks about another mental facet: reversibility. This principle operates in the circulation between categories, through the ability of going and coming back, but also in the perception of reversibility of time. Using Eliade's elegant words, "*the Man of archaic cultures doesn't tolerate well History and periodically tries to abolish it*" (Eliade, 1969: 51), concluding that the linearity of time is a modern acquisition.

In this cyclic perception of time, repetition tends to be expressed by recurrence of gestures, of actions, founded in primordial and paradigmatic ancestry, eliminating the notion of profane time. Repeating the rite or the practice is participating in the essence of the original mythical act, transforming past and future in present, generating a perception of permanence and stability, which, paradoxically, is based in the perception of mobility between different times. Repeating the rite, the gesture, the practice is regenerating the primordial act and, through that, a legitimation of the present (Eliade, 1969; Smith, 2008).

This cyclical perception of time can be seen to integrate the architecture of the period, with tendency for circularity, but also the long recurrences of certain practices, such as the formalized depositions and fragmentation practices. Again, some specific contexts in Perdigões enclosure provide good examples of this longevity in a same place.

There, since the earlier stages, we can see the practices of opening recuttings in previous fillings of ditches that were then filled with depositions of selected fragmented materials (mainly pottery, faunal remains and small stones) where human remains took part. These practices occur through all the biography of the site, for 1500 years.

A similar gesture, such as intentionally breaking a human mandible and deposing it in a ditch with the two fragments orientated in opposite directions, is recorded in the first phase of the Neolithic (third quarter of the 4th millennium BC), and again almost a thousand years later in a Chalcolithic ditch from the middle of the 3rd millennium BC (see Evangelista, Valera, present volume) (Figure 8: 1-2). This deposition of pairs with opposite directions seems also to be significant and occurs with other materials. In Pit 50, two horns were deposited in parallel pointing to opposite directions (Fig. 8: 3), dating from the first half of the 3rd millennium BC, and the same situation was recorded in Ditch 1, dated from the second half of that same millennium.

The similarities between specific forms of deposition, occurring for long periods of time, suggest they are integrated in this reversible perception of time, where the past (ancestry) becomes present (or vice-versa) through the repetition of gestures, practices, and events. Cyclicity, based on fluidity, helps to comprehend the repetition and long duration of specific forms of deposition and fragmentation practices, and how stability is acquired by the participation of the present in the primordial agencies of the past.

But time and space are not independent dimensions. To a cyclic time tends to correspond a centred perception of space. Neither is continuous and linear. A centre tends to assume the "shape" of a micro cosmos, not as a representation, but as a reduction of the cosmos to a human scale, controllable and liable. That centre participates of the qualities and properties of the cosmos and tends to be organized and orientated according to the same logic. Architecture becomes cosmological (Lewis-Williams, Pearce 2005), and landscapes assume metaphorical meanings (Tilley 1991) and became alive (Smith 2008).

The emergence of aggregation centres in the middle 4th and 3rd millennium BC, with strong evidences of periodicity, of mobility and of large-scale interaction, concentrating practices of deposition involving all sorts of materials and beings, seem to respond to these general cognitive parameters. These sites helped in the hierarchic structuration and qualitative organization of space, and several of them assumed astronomic orientations (Valera, 2013b) and locations with privileged relations with other meaningful elements of the landscape, as it happens with the large complex of enclosures of Perdigões regarding the megalithic landscape of Reguengos de Monsaraz.

At Perdigões landscape, the cosmological axis is a horizontal one (Valera 2010b; 2018), establishing a West- East connection, with the enclosure located in the western limits of the valley, in a natural theatre open to East, to the valley of Ribeira de Vale do Álamo, where several tens of

megalithic monuments were built. At East, this landscape was closed by the Monsaraz Mountain, and behind it, by the grate river of the region: the Guadiana. The river was not visible from the site, hidden by the mountain that is precisely at 90 ° of Perdigões. So, the horizon captured by the overture of the natural theatre of Perdigões is an annual calendar at sunrise. A Sun that rises from that horizon, as if it comes from the river just behind it (Fig. 9).
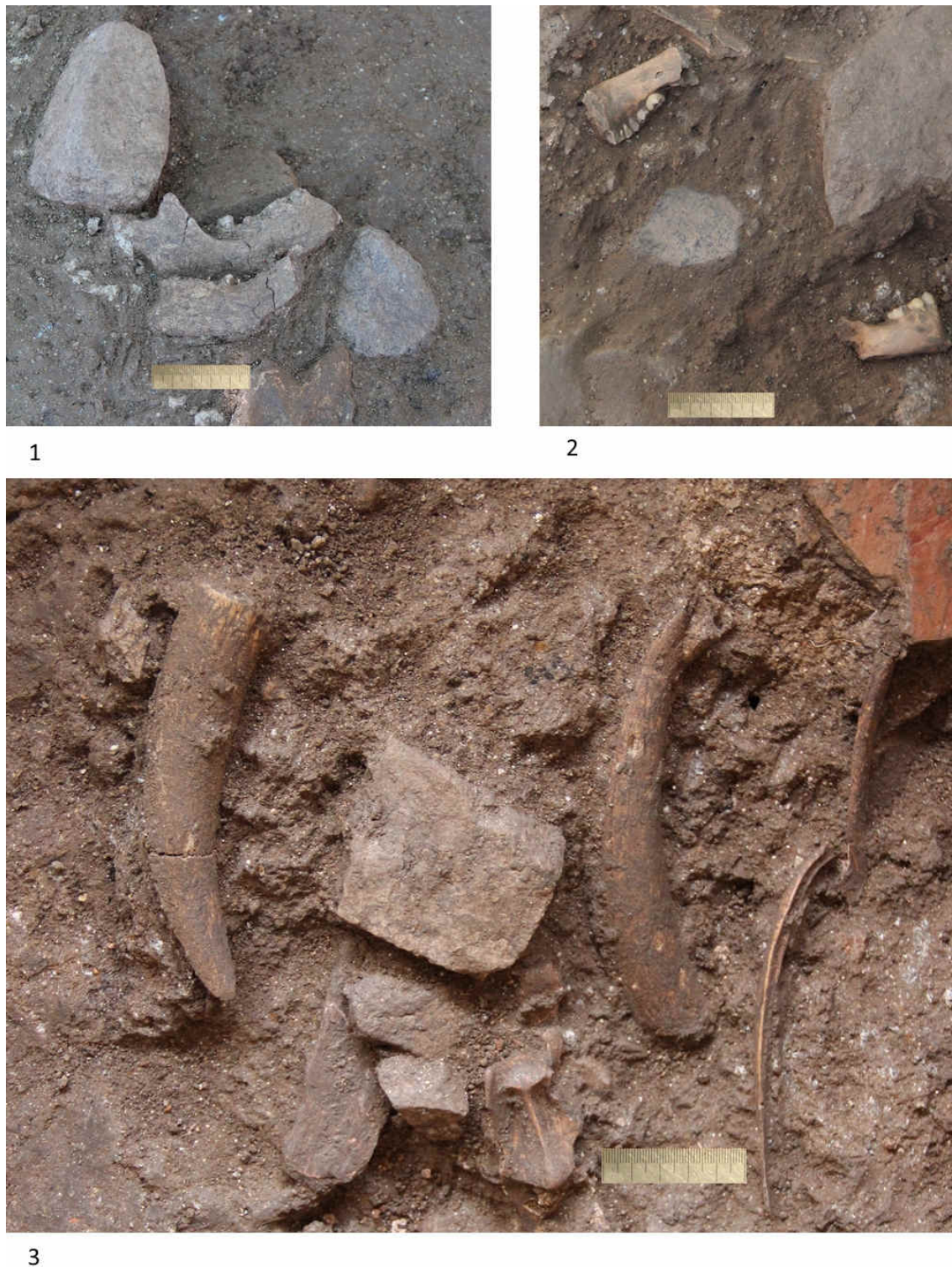

Figure 8 – Perdigões. 1-2. Intentional fragmentation of human mandibles in halves, deposited in ditches (Ditch 13c – Late Middle Neolithic - and Ditch 7 - Chalcolithic) with the jaws facing opposite directions; Two ovicaprid horns deposited in parallel, but facing opposite directions, in Pit 50.
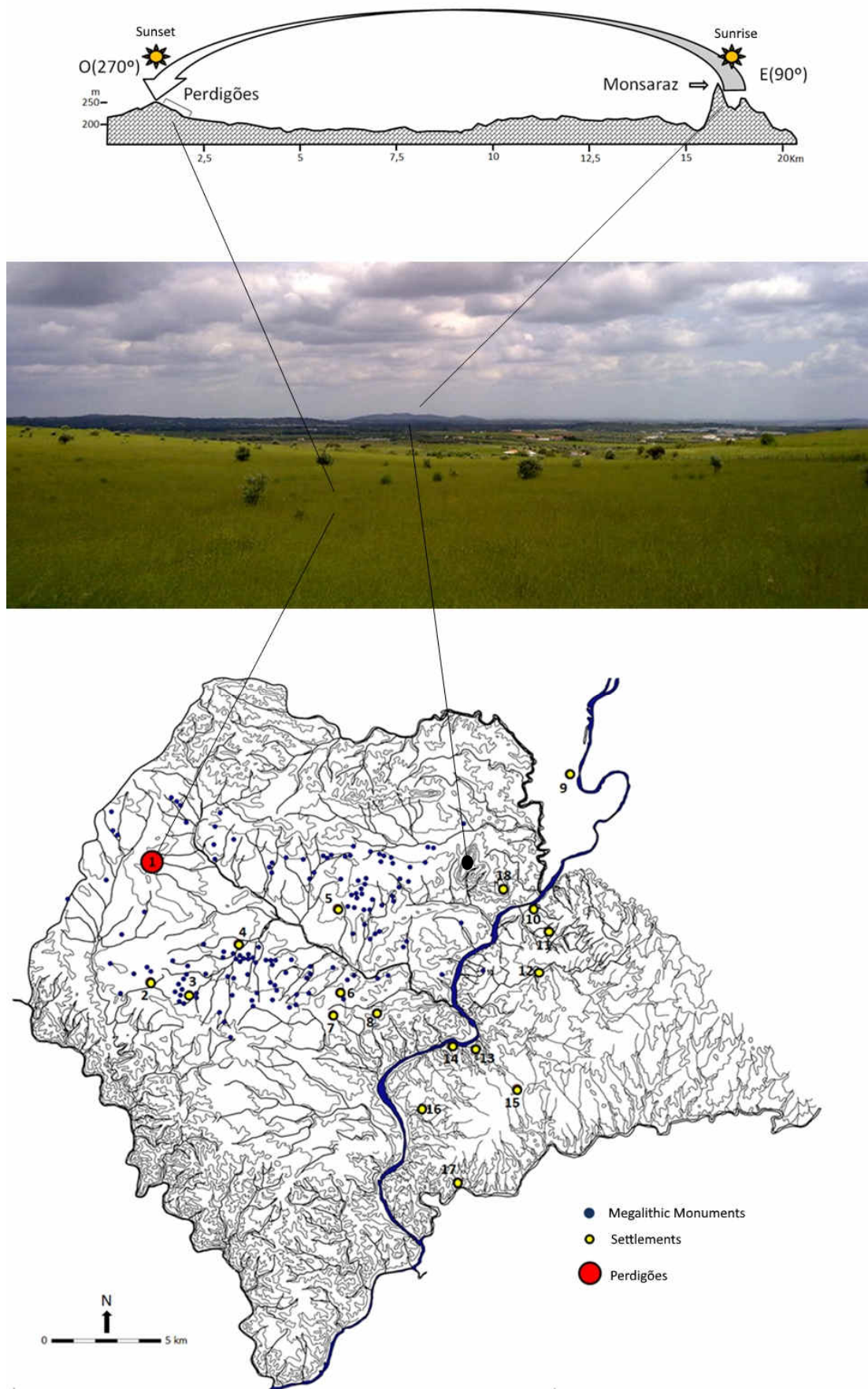
Figure 9 – Eastern visual relations of Perdigões enclosure in the local landscape.

Perdigões functioned as a circular chamber located at West, used among other practices for intense manipulation and funerary deposition of human remains. It was facing the valley that worked as an extended passage until the Mountain where the Sun emerges from a fountain of life (the river). The similarity of the organization of this highly symbolic landscape with the architecture of megalithic monuments is striking and could be a good example of the participation of the same cosmological principals at different scales in space and architectonic organization. They share the same structural dichotomies and associations that seem to characterize the Neolithic cosmologies: West / Death / Sunset – East / Life-Renewal / Sunrise. The pattern of this landscape suggests that space and its architectonic arrangement are qualitative, participating of cosmological essential and primordial characteristics and meanings.

Other ditched enclosures in the region, like Xancra, Santa Vitória, Borralhos or Outeiro Alto 2, present locations, orientations and architectonic designs that show that space organization was permeable to cosmology (Valera 2013b). Through homological processes, these architectures and the landscapes they helped to organize were scaling down the imagery of the cosmos, with all its compartments, and make it available to human circulation and control, becoming a medium and an outcome of social practices. Embedded in primordial meanings, space becomes one more agent of the Neolithic cosmological stability based in instable ontologies and categories that allow an extraordinary mobility and promote segmentation and psychological participation as powerful social tools.

6. Concluding

In Prehistory we deal with societies that found their cosmologies in cognitive processes that seem to present a significant permeability between categories, resulting in forms of psychologic participation. These cognitive processes allow the development of world visions based in significant mobility and reversibility in time, space, and status. The key words that characterize these cosmologies are Fluidity, Permeability, Mobility, Flexibility, Mixtures, Hybridism, Ambiguity, Mutability and Repetition.

This world views induce a plurality of agencies and social practices, where depositions and intentional fragmentation are included and where reversibility and homology frame the perceptions of time and space.

By considering these structural cognitive bases of deposition, fragmentation and architectonic practices, their relationship with other aspects of the social system becomes clearer, like their link to the symbolic organization of landscapes, social organization, and social interaction. Everything seems to be submitted to the principle of segmentation, from the simple object, to the building, from the body to the community. And everything seems to be permeable, generating a world of incredible ontological mobility and mixtures, generating a holistic image where categories tend to be dissolved or at least to assume grate ambiguity. A world that achieves its stability through an ontological instability.

Cognitive structures (or versions, to come back to the expression of Levi Strauss) are central in the construction and conformation of world visions, human agency, and social organization. The structural operative categories such as time, space, part, whole, or unity are historically constructed. They shape the perception of the world and human behaviour and they cannot be left out when trying to understand and explain it. In his famous book, *Le probleme de l' incroyance au XVI siècle. La relegion de Rabelais*, Lucien Febvre resorted to this approach to show that François Rabelais, like other humanists, was not announcing atheism, because this was simply impossible for the mental structure of the time. By concluding so, he showed that cognitive structures cannot be disregarded in the heuristics of the past.

Acknowledgments

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CHAPTER 2

DEPOSITIONS, ASSEMBLAGES AND RELATIONSHIPS IN PORTUGUESE LATE PREHISTORY. THE CASE OF THE WALLED ENCLOSURE OF CASTANHEIRO DO VENTO.

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Abstract

This text aims to approach structured depositions as assemblages that produce space, i.e., architecture. The interpretative context of structured depositions will be reviewed, paying particular attention to the Late Prehistoric Portuguese enclosures, and three specific contexts from the Chalcolithic walled enclosure of Castanheiro do Vento will be studied. It will conclude by establishing a set of relationships that emerge from the interpretation of these contexts as assemblages and as part of the architecture of the site.

Keywords: Structured depositions, assemblages, architecture, Late Prehistory, Castanheiro do Vento.

1. Introduction

The concept of structured deposition is based on the recognition of patterns, intentionality and selection in the archaeological record. It can be defined by the presence of particular things, by the particular arrangement of things, or by the particular locale where things are placed (e.g. Garrow 2012; Jorge, S.O. 1998; Richards, Thomas 1984). Frequently, the things that compose a structured deposit are fragmented. The fragmentation of exceptional things (rare in the archaeological record) is quite often read as intentional but the fragmentation of ceramic pots, for example, requires attention to detail, because the understanding of structured depositions inevitably lies between the definition of what is intentional and what results from taphonomic processes.

In this paper I will explore the concept of structured depositions in more detail and question its interpretative possibilities by analysing three specific contexts of the Chalcolithic walled enclosure of Castanheiro do Vento (V. N. Foz Côa, Portugal) (e.g. Cardoso 2007; Jorge, V.O. *et al*. 2006; Vale 2011). I will begin by considering the theoretical framework that allowed for the recognition of these contexts *as* structured deposits; within the research on the 3rd millennium BC in the Iberian Peninsula, the recognition of structured deposition is part of the wider context of new interpretations and understandings of the walled enclosures. Having discussed the theoretical context, I will argue, through the study of particular contexts from Castanheiro do Vento, that the research into structured depositions, as assemblages, should integrate the rhythms of dwelling practices and that the "container" cannot be separated from the content. The space created by the deposition itself is part of the architecture of the site just as the architecture is part of the depositional practices.

2. Depositions in archaeology – recognition and interpretation

It was all the pits lined with potsherds, unbroken stone axes, placed animal skulls and general weirdness that could not easily be overlooked that first alerted archaeologists to the likelihood that 'something was going on' in the domain of deposition. Without this strangeness, it is much less probable that the more subtle forms of patterning would have been identified as a problem to be addressed, in other than functional terms. (Thomas 2012:125)

Thomas (2012) points out that it was the recognition that *something was going on* in the way things (integrity of the piece, types of materials as well as associations) appear in prehistoric contexts, which allows them to be interpreted beyond merely functional explanations. Commenting on his iconic paper written with Richards and published in 1984, Thomas highlighted the importance of the continuous questioning of associations and articulations in prehistoric contexts, something that demands a constant consideration of the multiple ways a deposit is formed (Thomas 2012:127). In fact, the possibility of recognizing structured depositions in archaeological contexts demands a detailed study of things, spaces and the relationships between things and between things and spaces. Structured depositions can never be *the* explanation (Garrow 2012; Thomas 2012), but can be *a* possibility to consider *strangeness*.

2.1. The introduction of the concept

In 1984, Richards and Thomas interpreted the distribution and association of pottery fragments at Durrington Walls (including decoration style in relation to the context) with other materials such as animal bones and flint, as structured depositions resulting from ritual activities. The authors argued that ritual practices would have involved highly formalized and repetitive actions that can be recognized in the archaeological record by a *high level of structure* in the depositional patterns (Richards, Thomas 1984; Garrow 2012: 86-90). This perspective, in-line with emergent post-processualist archaeology opened the interpretative framework far beyond a functionalist approach (as noted by Thomas in 2012). The recognition of ritual depositions allowed archaeologists to infer *the meanings and social roles of things*, while processualist approaches (especially Schiffer 1987) were used to understand the formation of the archaeological deposits based on the physical characteristics of things and the way they appeared in the archaeological record (following Holtorf 2002: 54).

Portuguese archaeology had to wait until 1998, when S. O. Jorge identified a context at the walled enclosure of Castelo Velho de Freixo de Numão (V. N. de Foz Côa, Portugal) as a structured deposit (Jorge; 1998). The perception of the so-called "depositions" formed the base

for the shift in the interpretative model of Castelo Velho (Jorge, S.O. 2005: 11-12), as the recognition of structured depositions questioned the traditional explanations of functional areas within the processualist framework in which the site had previously been understood as a fortified settlement (Jorge, S.O. 1993), and are part of the interpretation of this site as a monument or as a monumentalised hill (Jorge, S.O. 2002:131, see also Jorge, V. O. *et al*. 2006) where a "set of activities that are difficult to catalogue occurred" (Jorge, S.O. 2005: 11)[1].

S. O. Jorge's approach, new in Portuguese prehistory, was based on an archaeological context characterized by the presence of human bones, animal bones, loom weights, pottery fragments, a fragment of a quern stone and a bead, found along with schist slabs of different dimensions (Jorge, S.O. 1998; Jorge, S.O. *et al*. 1998-99). Although the deposition could have been polarized by the human remains, S. O. Jorge always refers to this context as a deposition of things in which rather than creating a hierarchy of the various elements of material culture, everything had participated equally in the deposition, or within the ritual practices. This led S. O. Jorge to question if in other contexts identified on the site, also characterized by the presence of pottery fragments or loom weights but where human remains where absent, could also be interpreted as structured depositions within ritual practices (Jorge, S.O. 1998:291). Recently, the author (Jorge, S. O. 2014) has reviewed this context and questioned the archaeological explanations based on ritual (which I will address later in this text), and highlighted the key points at the core of this structured deposition: this context is an "ordered deposit of fragments of things", in fact "the fragment is the main artefact in the construction of the deposit" which indicates "the previous manipulation of the elements that constitute it, outside the stone structure." (Ibid: 72).

Another walled enclosure where the concept of structured deposition has been connected to the interpretation of the place itself, and within the same theoretical framework, is Crasto de Palheiros (Murça, Portugal) (Sanches 2008). At this site, excavated between 1995 and 2008, intentional depositions of things, such as axes, pots and several animal bones, both within and outside small stone structures, were recognized as part of highly codified and symbolic actions. In parallel, other features interpreted as being of domestic use were also identified, which led Sanches to write "this shows us that we are still far from understanding all the social, political and ceremonial dimensions of this enclosure." (2008: 27).

The concept of structured deposition is commonly linked to the practice of intentional fragmentation (of things and bodies, both human and non-human), as it is clearly presented in S. O. Jorge's work. Although this is not the space to discuss intentional fragmentation[2], I would like to mention, in the context of structured depositions in 3rd millennium Portugal, the intentional fragmentation and deposition of a set of ivory *lunulae* deposited in a funerary context at the ditched enclosure of Perdigões (Reguengos de Monsaraz, Portugal) (Valera 2010). Inspired by the concept of enchainment (Chapman, 2000; Chapman, Gaydarska 2007), Valera highlights the intentional breakage of the *lunulae* (of the 14 pieces just one is complete) and the manipulation of the parts (92% of the assemblage comes from the left side of the *lunulae*). This pattern of fragmentation could indicate their link to different stories of human beings, places, other things and animals, which opens the interpretation of the deposit to more than functional, but also more than symbolic, approaches.

The recognition of the ordered deposition of things, along with the recognition of the fragmented character of that which was deposited, is part of understanding prehistoric sites as complex architecture. In Portugal, this line of research emerged primarily in the study of prehistoric enclosures (Jorge, S.O 2005; Jorge, V.O *et al*. 2006; Vale 2011; Valera, 2010) but the

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[1] In this context several academic works were developed, such as Baptista, L. (2003); Gomes, S. (2003); Oliveira, L. (2003) and Vale, A. (2003).

[2] Although intentional fragmentation makes part of many analyses of structured depositions, I will not focus on this particular practice and its implications here as it is the main topic of some of the papers in this volume and I have also had the opportunity to discuss the concept in relation to Castanheiro do Vento in Vale, 2011.

identification and interpretation of structured depositions in other kinds of architecture, such as pit deposits (e.g. Luz 2010; Vale 2016), are also being questioned. Spaces constructed and used over a long period of time challenge the paradigm of "fortified settlements". It was the recognition that *something was going on* that allowed archaeologists to question the solely functional explanation of every context and it was the recognition of the strangeness of depositions that allowed the shift to a more interpretative and contextual view of the Portuguese enclosures.

2.2. Questioning the use (and abuse) of structured depositions

Garrow, in 2012, reflected on the meaning and use of the concept of structured deposition thirty years after the publication of Richards and Thomas' paper. According to Garrow, this term continues to be widely used in British archaeological literature but usually without reflection, uncritically and as an explanation in itself. Following Garrow's analysis, different deposits, formed by different processes and probably with different meanings, were interpreted as structural, intentional and symbolically relevant deposits. In these cases, the interpretation is mainly based on the ritual dimension of the structured deposits, neglecting, in Garrow's view, the temporality of the deposition and failing to consider the daily practices and how these same practices could have materialized. Garrow argued that a theoretical approach to the depositions resulting from everyday practices was missing, and that variability "does not have to have been intended or explicitly meaningful" (ibid: 109). It is not only symbolic or ritual practices that generate differences, everyday life practices can explain, for example, the number of pottery fragments in a feature or the relation between pottery and lithic objects. Based on this background, Garrow presented the study undertaken at the archaeological site of Kilverstone (Norfolk, United Kingdom), dating from the Early Neolithic (Garrow *et al*. 2005). Taking into account the quantity of flint and pottery in each of the 138 pits, the contents revealed different "material culture patterning". The analysis also showed that in the same pit pottery fragments with different degrees of erosion were deposited together, indicating that they could have had different treatments prior to deposition but, according to the authors, they were integrated in the pits along with the fill deposit. These patterns were interpreted as the consequence of everyday practices where the "accumulation of pottery and flint, and the digging and filling of pits, occurred at different ´tempos´" (Garrow 2012: 113). And, it is precisely this lack of rhythm and "tempo" that Garrow criticises in "structured deposition" explanations, as the temporalities prior to and after deposition seem not to be considered.

The author wants to move away from the "ritual" argument and focus on the other practices that could have created different patterns in the archaeological record. However, although Garrow mentions the impossibility of separating ritual and everyday life, following Bruck (1999), he maintains these two spheres of human life as separate analytic categories. The use and definition of ritual in archaeology has not always been consensual and identifying past ritual practices in the archaeological record has been argued to be out of reach. In an influential work on this matter, Bruck argued that the idea of ritual can only be understood within modern western thought, and approaches labelling depositional practices as refuse disposal or as ritual activities "risk slipping into the trap of applying artificially polarized interpretative frameworks (i.e. functional versus symbolic)" (Bruck 1999: 335). Bruck proposed the interpretation of what she called "odd deposits"[3] in domestic middle Bronze Age contexts in the south of England, as marking devices of specific spaces or times that identify the life cycles of things and places in relation to human life cycles.

However, Thomas (2012), after Garrow's analysis of the use (and abuse) of the term structured depositions to explain past intentions, argued that deposition practices *are* embedded

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[3] A term then used by Garrow (2012) to designate one end of the spectrum between material culture patterning and special or uncommon deposits.

in the ritual practices of the community that performed the deposition, which does not mean that this sphere is set apart from daily life. The ritual and the profane are, according to Thomas, intermingled in every practice from the mundane to the exceptional. Even if not always explicated or theorized, the most ordinary activity *reproduce symbolic orders*, through *habitus* (after Bourdieu 1977) becoming the way things are and the way they should be done.

The inference of ritual practices in structural depositions was part of an attempt by post-processual archaeologists to understand the meanings and social roles of material culture, however it has been questioned by several authors who nevertheless still engage with the analysis of structured depositions, such as Garrow and Bruck, and in Portugal by S. O. Jorge (also see Bradley 2005, for the ritualization of everyday life or the *impossibility to separate* the two). As mentioned above, in 1998 the deposition with human bones in Castelo Velho was interpreted as the result of ritual practices (Jorge, S. O. 1998). However, in 2005, when revisiting some earlier papers about her research project at the Castelo Velho walled enclosure, S. O. Jorge refers only to the term deposition; there is no reference to ritual. And more recently (Jorge, S.O. 2012; 2014), the author questioned the possibility, in the context of depositions of things and/or of human bones, of separating the ritual actions from the everyday actions. According to S. O. Jorge, this dichotomy is misleading and the use of the dichotomy of ritual/secular or everyday life in archaeology is based on the belief of a familiar past (2012: 28-29). For S. O. Jorge the description of the actions and gestures that could have been linked to the depositional practices can be identified and described by archaeology. However, the inference of meanings from those actions identified by the archaeologist (of fragmentation, manipulation and circulation) in order to approach identity and power, can only be justified by the illusion that past materialities can reveal past intentions, and that is "a kind of an impossibility" (Jorge, S.O. 2014:73). The author argues that "the Past is not a variation of the Present. The past can only be approached by analogy, which implies the use of concepts such as distance and mediation." (Jorge, S.O. 2014:73).

2.3. Depositions and the formation of deposits through the study of broken pottery

> *The study of prehistory has been characterised by an almost bi-polar disorder of 'domestic' or 'ritual' interpretations of the evidence, or put more positively, by how best to relate these two aspects of interpretative practice.* (McFadyen 2016: 88)

Recently, McFadyen (2016) published her work based on the fragmentation of pottery from different archaeological contexts at the walled enclosure of Castelo Velho, including the deposit containing human bones (Jorge, S.O., 1998). The pottery assemblage of this particular feature was characterized by a majority of plain medium sized body fragments (between 3 and 6 cm) and a significant number of small sized potsherds (almost 40%). "The pieces that make up the majority of the assemblage do not stand out" (McFadyen 2016: 89), it was not possible to recognize intentionality either in the breakage of the pot or the selection of a fragment to integrate into the deposit. The author does not deny the ritual character of the manipulation and deposition of the human bones, but the analysis of the potsherds dislocated the focus from the meaning of placing broken pots in the structure and instead concentrated on the temporality of the practices of deposition. Going further into the understanding of the formation of the deposit, it was "the daily practice of living with things (many in a broken state), that creates the conditions for a Structure with Bone" (McFadyen 2016: 89). McFadyen, through the study of the assemblage of potsherds, aimed "to understand the temporality of the entanglement of architectural elements" (McFadyen 2016: 75), linking what can be interpreted as a special deposition, because it involves human bones, with the everyday practices and rhythms.

At the walled enclosure of Crasto de Palheiro, Barbosa (2015) approached the temporalities of specific architectural features through the analysis of the fragmentation of ceramic pots trying to understand their stories after breakage. The author attempted to give temporal depth to the construction and use of the space, also focusing on the formation of the deposits through the

analysis of the potsherds. Barbosa interpreted the fragmentation and manipulation of pieces of pottery in different ways in relation to different architectonic features: identifying fragments as part of structured depositions where they were selected intentionally, as construction materials and others as part of different deposits in which the physical characteristic were the result post-depositional actions. Recently, Sanches and Barbosa (2018) pointed out the difficulty in establishing the intentionality of the deposition of potsherds at Crasto de Palheios, mainly because of the permanent transformation of the site through actions of construction, destruction and rebuilding and also due to post-depositional factors. In some contexts, the intentionality of deposition or/and breakage can only be inferred by their rarity in the archaeological record, such as the bell beaker fragments and their consequent special use in particular moments, placed in structured depositions or inserted in architectonic devices.

Finally, the work of Blanco-González (2015; 2016) also has to be mentioned in the context of Iberian prehistory. Blanco-González's work engages in structured deposition as well as the formation of deposits through the study of the fragmentation patterns of potsherds, not only as the result of "natural, modern or unavoidable side-effects" (2015: 360) but also as part of the manipulation and circulation of fragments of human and animal skeletons in several contexts across the Iberian Peninsula.

2.4. Assemblage theory and depositions

These recent approaches on the Iberian Peninsula (McFadyen 2016; Barbosa 2015; Blanco-González 2015; 2016) try to understand the temporalities of the deposition itself, linking what could have been an exceptional, special or even ritualized moment to the everyday life of past communities. Through the attention paid to the physical characteristics of things, namely pottery fragments, these works aim to understand the formation of deposits and depositions, taking Schiffer's (1987) analytical proposals into a post-processual approach, but adding to the functional, mechanical or natural mechanisms other layers of interpretation in the explanations of the archaeological record. This line of research is mainly concerned with understanding the "tempo" of construction and use of the archaeological sites and it is not focussed on the search for the symbolic meaning of past practices.

In Britain, Assemblage Theory brought back the theoretical analysis of depositions in archaeology or assemblages, based on the work of Deleuze and Guattari (1987), and on the recent approaches in philosophy and political theory of authors such as DeLanda (2006; 2016) and Bennett (2010). Within this framework, depositions, as assemblages, have an emergent and relational character. As defined by Hamilakis and Jones:

> *the making of assemblages is a dynamic but also deliberate rather than random process […] [and] the juxtaposition of distinct elements can be transformative, generating new entities, new possibilities and new ways of understanding.* (2017: 79)

The assemblage does not refer solely to the immediate space and time that it occupies but can indicate other spaces/times where each element of the composition (of the deposition) operated before its final deposition. Additionally, when placed in association, other relations and meanings (sometimes unexpected) are activated. In this sense, each element of the assemblage refers to other assemblages and requires not just a descriptive work but also one that focusses attention on the process – the historical process in which the assemblage emerges (Harris 2017). This approach proposes that human beings, other beings and things stand at the same level in the study of past relations; there are no hierarchies. This idea has already been emphasized by symmetrical archaeology (e.g. Olsen 2010; Olsen *et al*. 2012). However symmetrical archaeology proposes the abandonment of the search for meaning and focuses on the description of things while, for assemblage theory "there is no reason to reject meaning, identity, or emotion from our archaeological vocabulary" (Harris 2017: 129) as the assemblages are constituted by material as well as expressive elements.

Using assemblage theory, Harris (2017) re-worked a well-known context, a deposit identified at the bottom of the ditch of Etton causewayed enclosure (Cambridgeshire, United Kingdom), first published by Pryor (1998). Working at several scales of analysis, the author began by thinking about one of the pots within the deposit as a way to question the relationship between things, spaces, times and beings in one single ceramic pot. This piece connects clay, fine shell (temper) and the human hands, all equally important in the making of this particular form. It was then used as a container or a cooking receptacle, and in that way it acted as a collector of substances that bind different spaces, human beings and other animals; this pot emerges from a precise historical process, a tradition of making ceramic pots and specific consumption stories, and at a given point in time came together with other things, the pot "was incorporated into another assemblage" (Harris 2017: 131); it was deposited with other things at the bottom of the ditch at Etton. This assemblage creates new physical/material relationships and new meanings. It is part of and emerges from others. It is located in a ditch at Etton, a site that should also be understood as an assemblage, constituted by several structured depositions. Etton is a specific assemblage that emerged through a particular historical process, putting together, dislocating and disconnecting things, human beings and other beings, as well as places, plants and water, between 3700 and 3200 cal BC. Additionally, Etton is part of another set of assemblages: that of British Neolithic enclosures and, at a wider scale of analysis, the Neolithic process itself.

Considering the above, in the next section I am going to focus on the study of specific depositions from the archaeological site Castanheiro do Vento. I will discuss what Garrow (2012) after Bruck (1999) called "odd depositions", because of the exceptional elements deposited, or the exceptional associations created by the deposition, or the exceptional places that were constructed through the deposition of different things. In fact, it was the exceptional character of the things, associations or places that allowed their recognition as structured depositions during excavation. However, after Harris (2017), I would like to think of these contexts as assemblages at different scales[4] and consider them as architectural devices that create space and allow other spaces to emerge. The work on structured depositions at Castanheiro do Vento is also dependent on the Portuguese interpretative context that I discussed above, and was inspired by the work of two researchers S. O. Jorge (2005) and McFadyen (2016).

3. Depositions at Castanheiro do Vento - the relationships within architecture

3.1. The archaeological site

My work is in and around the walled enclosure of Castanheiro do Vento, located in the Northeast of Portugal. The research project is closely connected with the one undertaken at Castelo Velho (Jorge, S. O. 2005) and Castanheiro do Vento has also been interpreted as a monumentalized hill (Jorge, V.O. *et al*. 2006)[5], constructed and used between 2875 and 1519 cal BC (Cardoso 2007: 103). The general plan is defined by three concentric stone walls (M1, M2 and M3), that enclose a main precinct. Attached to the outermost wall, a smaller precinct has been defined in the southeast part of the site. All the walls are punctuated by the so-called bastions, 19 in total, and are interrupted by entrances (3 in M1, 2 in the smaller precinct, 7 in M2 and 4 in M3) (Fig. 1).

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[4] When I started thinking about structured depositions at Castanheiro do Vento (Vale, 2011) I was not familiar with the work of O. Harris or the theoretical framework of assemblage theory, but I was also trying to work at several scales of analysis, mixing times, spaces, things and beings. However, Harris' paper helped me to *restructure* the approach to structured depositions.

[5] The archaeological research at the site began in 1998 (co-ordinated by a team of archaeologists, now made up of Vítor Oliveira Jorge, João Muralha Cardoso, Sérgio Gomes and myself).
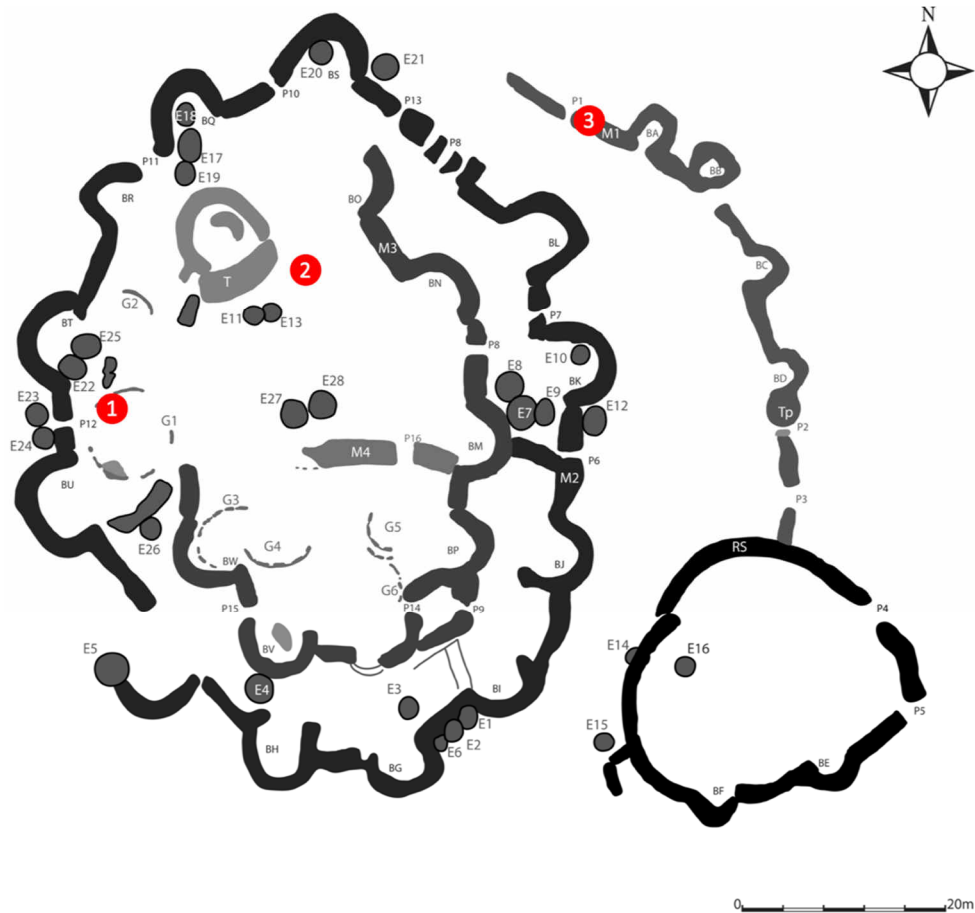
Figure 1 - General plan of Castanheiro do Vento from the 2011 excavation. Major structures are visible, with the depositions reference in the text marked in red.

In some areas of the site it was possible to identify a buttress system, made by slabs of schist placed on the outside of the stone walls, parallel and perpendicular to one another and in the north and eastern area of the hilltop there is a stone ramp or embankment constructed in a similar style. In the main precinct 28 round structures were identified, the perimeters are defined by slabs of schist and all measure less than 2.5 m in diameter (ibid: 211-216). Six bigger round structures, similarly defined but with diameters varying between 5 and 8 metres, were also identified (Vale 2011: 44-50). Some of these structures have a semi-circular shape, although this could have been caused by post depositional practices. Small round structures, made mainly from quern stones, both broken and intact, were also identified.

The features described above were a form of stone embroidery that drew the base of the walls at ground level (Jorge, V. O. 2009). The foundations were made of schist with inclusions of quartz and granite, and the walls would have been primarily constructed from earth and wood. The stone-based walls could have been made by using a monolithic earthen construction like moulded earth or cob, and the round structures were possibly constructed by a network of interwoven wooden sticks covered with mud and clay, wattle and daub. Castanheiro do Vento can be seen as a labyrinth, with multiple paths, narrow tracks, and different arrangements of space. If we assume that the stone-based structures are contemporary, which we do, the different entrances through the 3 walls do not always coincide, so the access to the main precinct was not in a straight line. Within the site, inside the labyrinth, the view to the outside would have been obscured and constrained and beings and things would be immersed in the enclosure. This sense of immersion would have occurred if we project the height of the upright structures of the walls to

approximately 2 meters; this projection creates "corridors" between the walls, measuring from 5 to 18 meters long between walls M1 and M2, and from 2 to 8 meters long between M2 and M3. Considering the site with roofs covering the majority of the identified structures, and even assuming that the entrances were open at the same time but without considering possible openings in the walls (i.e., windows), the natural light inside the site would have been scarce and the immense landscape that is part of the experience of the site today would have been greatly reduced. The structured depositions presented below add another layer to this labyrinthine architecture, as I hope to demonstrate.

3.2. Examples of structured depositions at Castanheiro do Vento

In the labyrinth of Castanheiro do Vento several structured depositions were recognized, and I will focus on three of them. The first is part of a round structure with 8 meters in diameter and located at the western part of the site, between wall M2 and M3, the second is located in the main precinct, and the third is part of M1, between bastion A and entrance 1 (Fig. 1). The first deposition (Fig. 2) is made up of four slabs of schist, 41 pottery fragments, a fragment from a bovine horn, river fish bones (from *Alosa sp.*), a loom weight, a core and a chip of quartz. The ceramic fragments, mainly non-decorated potsherds, present preserved edges, with only 14.6% of them presenting weathered external surfaces and 12.2% weathered internal surfaces; 30% are large sized fragments (>7cm) and 15% are less than 3cm in size (Vale 2011: 295-298). It does not look like there was intentional fragmentation or intentional selection of the fragments, but it seems that the time between the breakage of the pot and the final deposit of these fragments would not have been long. These ceramic fragments were deposited in association with two elements that are unique to the archaeological record of Castanheiro do Vento, the bovine horn and the fish bones.

Figure 2 - Structured deposition 1. Detail of the bovine horn and loom weight along with some pot sherds.

The different materials and their being broken or whole points to different times of manipulation and deposition, as well as the different temporalities of the things themselves. The fish bones are, by their very nature, fragile, and the conservation of the ceramic fragments indicates a short period of use before deposition. The fish bones could also reference to the rhythm of cyclical time, since they are from a species that only comes into fresh waters in the spring, making its appearance in the region seasonal. In the same way, the bovine horn points to the cyclical time of the seasons, as cows reproduce once a year and had probably to pasture in different places depending on the dry or wet season[6]. These things (the fish bones and the bovine horn) were placed in a relationship with pot sherds and loom weights invoking the rhythms and traditions of ways of doing and the practices of working, shaping and firing clay. The quartz and the slabs of schist could refer to the long term and to stories that last. The slabs of schist extracted from the geological substrate, from the base of the site, are mixed in the deposit with things that came from other places and spaces. This assemblage gathers different things, but the assemblage of these things at a precise moment allowed other relationships to emerge.

In the second deposition (Fig. 3), potsherds were assembled with eight granite quern stones, all fragmented. The ceramic pieces were distributed in two groups, polarized by two large fragments with their inner surfaces facing upwards. All the sherds are from the body, have no decoration and have well preserved edges and surfaces. They are in a space also defined by the quern stones, arranged in a circular form. The quern stones were presumably used to grind cereals and have their worn surface turned to the inside of this assemblage. They are all fragmented and the granite is not all from the same source (although both sources were identified as around 5km from the site). This assemblage, made up of unremarkable objects, or things from everyday life, emerges due to its exceptional disposition: the way the elements have been assembled. These fragmented things were intentionally deposited and their assemblage marks a specific place on the site. The granite from different locations was the raw material of the elements used previously as quern stones. The clay, coming from areas close to the site (or from the site), was used in the making of medium and large sized pots which presumably had contained different substances. These fragments (from pots and quern stones) could have been connected to stories of consumption but also, through their arrangement in this deposition, could also have created other stories due to the different relationships that were created by the fragmentation and deposition of these things. The relationship of these things with the rhythms of daily life and tasks, such as farming, harvesting cereals, or collecting nuts or any other plants/fruits that could have been transformed by grinding, or the storage, transformation, and spilling of different things into and out of the pot, could have been very much present and celebrated. The "tempo" of the gathering of clay or the quarrying of granite could also have been present in the assemblage, accentuating or reinventing daily life, commemorating it or alluding to the transformations of things, to the continuous making and unmaking of the world.

The third deposition (Fig. 4) is an assemblage of one loom weight, two fragmented granite quern stones and slabs of schist. The loom weight and the pieces of granite were part of the construction of the outer wall (M1) of Castanheiro do Vento along with the schist slabs. The assembling of the granite, clay and schist seems to invoke the very materials of which the site is made. These elements, integrated in the wall, are part of it, they are architectural elements, and the wall, as an element that is woven through actions of deposition, is part of the practice of deposition itself. The construction of the wall was not just dictated by functional and practical reasons, but it was woven from different materials connecting different spaces and times, and as

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[6] The breeding of cattle by these communities would have represented a big investment, as noted by Sanches (2016:95), firstly because feeding cattle requires fresh pasture and permanent grassland which implies planning and food storage for the winter months, and secondly because it takes two years for cattle to become fully grown and they only reproduce once a year. The slaughter of a cow would also involve the conservation and preservation of the meat or its immediate consumption in a festive/ritual context of collective consumption.

such different stories could have been told, created or learnt in relation to these materials and emerged through their assemblage. The different raw materials, the clay and granite, were reshaped, worked and transformed into loom weights and quern stones and after use were placed together with schist slabs for construction, shaped from the local bedrock, in the making of the wall, bringing together different activities, different daily tasks and rhythms.

Figure 3 - Structured deposition 2. Detail of the deposition with two large pot sherds with their interiors facing upwards.

3.3 Structured depositions as architectural assemblages

This last deposition marks a specific place within the site, bringing together, as the others did, different materials that were probably used in other activities, activities that were performed outside walls. These things, even the ones that are rare in the archaeological record, the fish bones or the bovine horn, seem to connect the rhythms of everyday life with the use and construction of the site. These depositions materialize the gathering of different substances, raw materials and objects, coming from different places and from different practices. These assemblages gathered things as they also gathered human beings and other beings. It was through this assembly of beings and things that space was constructed.

These assemblages, or assemblies, were recognized as structured depositions and understood as practices of intentional placement of things. Fragmented things and fragments of pottery that indicate a deliberate choice and perhaps an intentional fracture, but mainly comprising pottery fragments that would have been accumulated in and around the site; however, all the fragments were part of the architecture of the site through its construction and use (following McFadyen 2016). These things were in association with other things, spaces, times and beings and the elements in the deposits were not hierarchized, following S. O. Jorge (1998) and Harris (2017). The pieces that delimited these contexts, usually understood as containers or structures that held something inside, are also part of the deposition, and just as the fragments of other pieces

are part of the construction of space, these pieces create space. Architecture is deposition and the deposited pieces are constructive elements. These depositions are assemblages of things along with the schist slabs and the quern stones, as architectural elements are part of the assemblage.

Figure 4 - Structured deposition 3. Detail of the loom weight and the quern stones in the wall 1.

By bringing forward new (other) relationships, these depositions, or assemblages create new (other) paths of understanding (or being) in Castanheiro do Vento (or in the world). These other paths (or relationships) add more complexity to the labyrinthine architecture, and by promoting new spaces and understandings, and creating spaces for commemoration, remembrance, and being, the act of dwelling in the site was constantly reinforced and transformed, and probably subverted by these assemblages. These assemblages, as part of the dwelling practices in the site, represent ways of understanding the space through the deposit of pot sherds or schist slabs that both enclose and generate new approaches to space in time. The labyrinth of Castanheiro do Vento was made by these depositions which are impossible to dissociate from the construction of the walls or round structures; they are part of the construction and use of the site. They are architecture: the labyrinthine architecture of Castanheiro do Vento.

4. Conclusion

A structured deposition, understood as an assemblage, emerges from the relationship between the structure that defines it and the things with which it is filled; the schist slabs and the granite elements delineate space as well as the ceramic fragments or the faunal remains. Every element in the deposition is equal without hierarchical analytical constraints (in this way the ceramic fragments, the horn and the remains of other animals all make up the assemblage). These depositions are based on the fragmented nature of the deposited things, of pieces that could have been fragmented due to very different reasons, and have been accumulated, or been forgotten, in different places around and within the site until their placement in the final deposit (as McFadyen 2016 has already noted in the context of Castelo Velho). Each assemblage connects specific fragments. Each fragment can indicate other assemblages, different relationships that could, or could not, have been called into the final deposition; but the deposition is the composition of all the elements. The deposit of different things promotes other relationships, possibly unexpected ones (after Harris 2017) and the deposition contains in itself possibilities that could or could not be actualized.

Castanheiro do Vento has not been interpreted as a settlement or a domestic place, but as a place in which different generations constructed, used, visited, throughout a long period of time, making this site theirs, part of their lives, of their everyday life. They lived in and around the site, with things, fragmented things. The architecture of Castanheiro do Vento is the form and the material of the gathering practices that occurred during construction and use. And during construction and use, different materials were carried around, handled, thrown away or intentionally deposited; the assemblages discussed above are part of Castanheiro do Vento's architecture as they create space through their construction and use. Different materials, from different places, and in relation to different practices were put together, not before or after construction, but during. By putting things together, the site of Castanheiro do Vento emerged as an assemblage of different things, interconnected with other assemblages, and Castanheiro do Vento was part of shared ways of inhabitation, that allow us to infer historical process of making and dwelling. As each assemblage is not fixed, but is always becoming, each deposition, and each archaeological site is particular and specific. A specific *assembly* of things and beings.

Acknowledgements

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CHAPTER 3

SEGMENTING AND DEPOSITING: THE MANIPULATION OF THE HUMAN BODY IN DITCHED ENCLOSURES SEEN FROM PERDIGÕES.

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Abstract

The investigation of the peninsular Recent Prehistory ditched enclosures has been revealing the importance that funerary practices and the manipulation of human remains have assumed in these contexts. Among a significant diversity of situations, architectures and material assemblages are deposition practices of articulated or disarticulated human remains inside ditches. Documenting fragmentation (of bodies) and different forms of deposition of human remains, this evidence allows the exploration of the heuristic potential of the theories that propose the intentionality present in these practices, in a context of greater ontological fluidity and permeability.

This work will address and describe the currently available anthropological and contextual data regarding human remains found in ditches in the Perdigões archaeological complex, dated from the late Middle Neolithic, Late Neolithic and Chalcolithic. A contextualization within the wider Iberian reality will also be attempted, seeking to discuss the interpretative possibilities that rise in face of the occurrence of human remains in ditch fillings, framed within a more comprehensive context of intentional practices of fragmentation and structured depositions occurring on the site.

Keywords: Ditch depositions; body segmentation; funerary practices; Perdigões.

1. Introduction

The Perdigões ditched prehistoric enclosure (Reguengos de Monsaraz, Portugal) is a large archaeological site covering an area of 16 hectares composed of various enclosures encircled by wide ditches, associated to a cromelech with several surviving menhirs. The available chronological data (based on archaeological evidence and absolute chronology with 98 radiocarbon dates) indicate that the site was in use for a long period of time, beginning at the late Middle Neolithic (mid 4th millennium BC) and surviving until the transition between the Chalcolithic and the Bronze Age (last quarter of the 3rd millennium BC) (Valera *et al.* 2014a; Valera 2018). It has been continuously investigated since 1997 and thoroughly published (Lago *et al.* 1998; Valera *et al.* 2000; Valera *et al.* 2007; Márquez Romero *et al.* 2011; Valera 2017; Valera 2018). Throughout the last 20 years, several funerary structures have been unearthed, showing a surprising variety of mortuary practices, which include mainly secondary depositions of fragmented human bones and cremains in different architectural structures found alongside a great variety and number of votive artefacts and animal remains (Valera *et al.* 2000; Valera *et al.* 2014b; Evangelista 2018).

Approaching some understanding of the Neolithic/Chalcolithic funerary world is a complex and vast quest. The enclosure/enclosing phenomenon is yet another materialized aspect of this way of being-in-the world and the interaction between funerary behaviours and the practice of enclosing is still a theme replete with blank spaces and doubts. The results from the investigation of the last 20 years in Perdigões prehistoric enclosures allow research to advance and the opening up of other perspectives on how to try to understand these practices in the light of the approaches to prehistoric ontologies (Lévi-Strauss 1976; Halowell 1960; Bird-David 1999; Ingold 2000; Fowler 2004; Lewis-Williams, Perce 2005; Malafouris 2007; Valera 2010; present volume), where an apparent fluidity between different categories defies our westernized modern concepts and views of the world.

The practice of human remains deposition in apparently non-funerary structures in Perdigões has also been recurrently identified (Valera, Godinho 2009; 2010; Valera *et al.* 2014b). They are found mostly in ditches but also in pits, predominantly integrating depositions that also include ceramic fragments, fauna remains and small stones (other materials are less frequent but can occur).

In this chapter, and for the sake of concept operationality, the designation *formalized funerary practices* will refer to those which occur in formal architectural structures built with the objective of receiving structured human depositions accompanied by their votive estate (such as specific pits, cists, *tholos* or *tholoi* type tombs, dolmens or *hypogea*) and the label *non-formalized structures with human remains* will concern architectural elements that fulfil a functionality other than originally funerary but where fragments of human bones integrated in the fillings are identified, taking part in an apparently non-compliant way (Marquez Romero, Jiménez Jáimez 2014).

This text centres around these latter practices in Perdigões and some of them are mentioned here for the first time. After their description and of their contexts, some topics will be discussed regarding the relation between ditched enclosures and these social practices, and concepts like body hood, death and the role of segmentation will be debated, aiming to access the more intangible aspects of these communities' cosmologies.

2. Time and space of the funerary contexts at Perdigões

Figure 1 shows the image obtained through geophysical survey (magnetometry), that provided almost the whole plane of the 16 ha Perdigões site (Márquez Romero *et al.* 2011). Red squares represent opened excavation areas so far, corresponding approximately to 1.5% of the overall area of the site. The blue dots are the structures containing the so-called formalized funerary depositions: on the Northwest side are the Late Neolithic primary depositions in pits 7 and 11 (Valera, Godinho 2009; Silva *et al.* 2015). In the Eastern part of the enclosures are Copper Age collective Tombs 1, 2, 3 and 4 of mainly secondary depositions (Valera *et al.* 2014b; Rodrigues 2017; Garcia 2018; Silva *et al.* 2017; Evangelista, Silva 2013; Valera, *et al.* 2018;

Evangelista 2018). Finally, in the central area, Pits 16 and 40 (Valera *et al.* 2014b; Silva *et al.* 2015) were used for the deposition of hundreds of cremated human remains and are found in direct association with open air depositions of Ambiente 1 and the contiguous cist 1 (*Valera et al. 2014b*; Pereira 2014). Finally, the yellow dots refer to non-formalized funerary structures where fragments of human bones have been identified as part of structured depositions that include other materials such as pottery or fauna. Human remains are present in most of the excavated areas.

In face of this scenery, several main aspects are to be emphasized. Firstly, the coexistence, in the same general enclosed area of a significant number of structures and practices involving human bones. The available radiocarbon dates show that some of these structures were initially built and used outside enclosed areas. That is the case of tombs 1 to 3. But they were later deliberately enclosed when Ditch 1 was built, while at least tombs 1 and 2 were still in use (Valera *et al.* 2014a). Only Tomb 4 was kept outside the enclosures. Secondly, these contexts show a great variety of architectures (pits, cists, orthostatic *tholos* type monuments, *tholos*, pits with wooden structuration) and of body treatments, where integrality is totally the exception. Thirdly, several of these contexts and practices of deposition show a general contemporaneity, especially during the middle / third quarter of the 3rd millennium BC (*idem*).

The minimum number of individuals (MNI) recorded so far in Perdigões is also revealing. If the number of individuals recovered in the different types of structures (formalized or non-formalized) is accounted for and related to the percentage of surveyed area, then it becomes clear how this set of enclosures was unequivocally the arena for practices where rituals related to dead and death had a great preponderance.
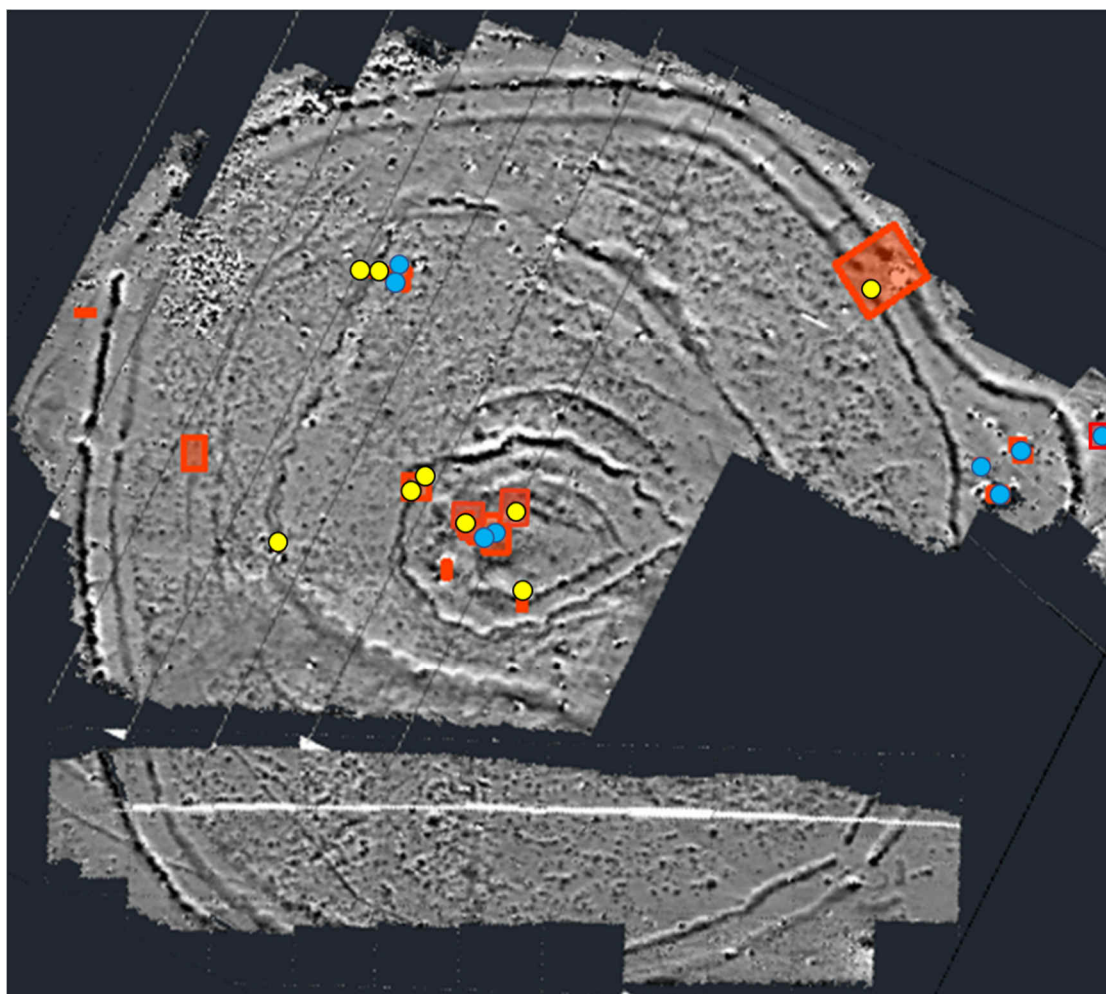

Figure 1 –Perdigões enclosures with the location of the surveyed areas (in red) and the presence of human remains (formalized funerary contexts in blue; non-formalized funerary contexts with human remains in yellow).

Table 1 - MNI per formalized funerary structure in Perdigões.

Structure	MNI	Adults	Non-Adults
Pit 7	2	1	1
Pit 11	3	0	3
Tomb I	103	55	48
Tomb II	56*	34	22
Tomb III	20*		
Tomb IV	10	6	4
Pit 16	9	6	3
Pit 40	250*		
Ambiente 1	90	72	18
Cist 1	8	5	3
Total	**551**		

*Partial numbers

These numbers relate to funerary structures detected in an excavated area that corresponds only to 1.5% of site. With this data, still incomplete for some of the structures still under laboratory study, it is possible to estimate that remains of several thousand individuals might be present in Perdigões. It must be also noted that most of these remains correspond to the Chalcolithic phase of Perdigões, dated between 2900-2200 BC.

As has already been stressed by other authors (Valera 2012b; Boaventura *et al.* 2014), diversification of funerary practices increases during the 3rd millennium BC. This phenomenon is happening with regard to architectures, that we know now largely go beyond the tradition of caves, dolmens and even *tholos/tholoi* type structures to include other solutions like hypogea, pits, ditches and practices involving open-air depositions. But after the turn of the 3rd millennium BC, diversification is also obvious in the mortuary practices and body treatments involved, reinforcing the idea of a complexification of processes. Primary burials are present in the archaeological record of Perdigões in Pits 7 and 11 (Valera, Godinho 2009; Silva *et al.* 2015) but even here, there is evidence of several forms of post-mortem disturbances (Godinho 2008). In the other funerary contexts, manipulation of remains are frequent. Although taphonomy can often explain some of these phenomena, many of them are the result of deliberate actions through the rearrangement of bones inside funerary structures.

Variability is also extended to the artefact assemblages found in different architectures, suggesting differentiated ritual prescriptions applied to coeval funerary structures in the context of identity management (Valera, *et al.* 2015; Valera 2015b).

Another idea that comes through is connected to collectiveness, which seems to reach its greatest expression in the middle of the 3rd millennium BC. Indeed, most of the funerary structures analyzed in Perdigões, correspond to deposits containing burials, often the result of successive deposition over a period of time. The degree of commingling varies but no discernible differences are found between individuals based on status, age, or sex. And above all, no sense of individuality emerges in any of these contexts.

The interpretation of the significance of mortuary variability implies a broader understanding of how these mortuary rituals were articulated with the living social structure, ideology and even economic life. This is hardly a simple task, constricted as the investigation is by the level of incompleteness of the information available for the past. The study of the articulation of many of these funerary practices with some of the large ditched enclosures started for the South of Portugal a few years ago (Valera 2012a; 2012b; 2016; Valera *et al.* 2014b) following a trend started in Europe decades before (Whittle 1988a; Burgess *et al.* 1988; Evans 1988a; 1988b; Bradley 2005) and reveals that these places could function as arenas for the various social practices that mirror the Neolithic cosmogony, where formal funerary procedures, but also the manipulation of human remains in non-formalized funerary structures, were important.

3. Deposition of human remains in non-formalized structures in Perdigões: the contexts

3.1. During the Neolithic phase

During the Neolithic phase of Perdigões, dated between 3500 and 2900 BC (Valera, 2018), human remains occur in formal funerary depositions in two pits (as seen above) and in four non-formalized funerary structures.

Ditch 13, section C (Survey 1, Sector Q)

Together with Pit 62, Ditch 13, located in the central area of Perdigões, is the earliest evidence of manipulation of human remains at Perdigões, dated from the late Middle Neolithic 3500-3300 BC (Valera 2018). Its section "C", 140cm wide, 54cm deep and an open convex profile, was filled by a complex succession of deposits, showing at the top a recutting filled by a deposition of small stones, ceramic fragments, faunal bones, and a human mandible. The unmistakable intentionality of this deposition can be established by observing the conditions in which this mandible was deposited: intentionally fragmented in the chin area through flexion and with the two halves deposited one on top of the other but in opposite directions (Figure 2: 1) (Valera *et al.* 2018).

The mandible belongs to an adult individual, with male morphological characteristics (Ferembach *et al.* 1980). The left central and lateral incisives (Fédération Dentaire International (FDI 31 and 32), canine (FDI 33), premolar (FDI 34 and 35) and third molar (FDI 38) were lost postmortem. Preserved in situ were the postmortem fractured roots of the right canine (FDI 43), the premolars (FDI 44 and 45) and of the first and second molars (FDI 46 and 47). The FDI 48 was found complete, showing slight wear, grade 2 (Smith, 1984) on the mesial cusps. No deposits of tartar or cariogenic lesions were observed.

Pit 62 (Survey 1, Sector Q)

Pit 62 is a 0.33m deep and 1.26m wide circular structure with a trapezoidal profile strangled in the mouth. At the base is has a diameter of 1.38m. Three main stratigraphic deposits were identified. SU 366, a clayey, orange deposit with sandy pockets and medium compaction. filled almost the entire pit (Valera 2018). It provided some ceramic fragments, fauna and quartz lithic industry and an FDI 14. The fact that apex closure could not be observed since it was fractured post mortem, only allowed to estimate that this tooth belonged to an individual with an age equal or greater than 11.5 years (AlQahtani 2009) although a degree 5 (Smith 1984) of tooth wear points to it belonging, most likely, to an adult individual. A small cariogenic lesion on the distal surface was also identified, near the cementoenamel junction. No tartar deposits were observed.

Ditch 8 (Sector P)

This Late Neolithic (3300-2900 BC) feature has a "V" shape profile and is 1.6 meters deep. It was filled with alternating layers of horizontal distributions of pottery fragments, stones and faunal remains with layers of earth with less archaeological materials, showing an intentional, but periodic, filling process. Closing the filling of this ditch was an elongated deposition of small fragments of pottery and some faunal remains, among which a human tooth (FDI 17) was recovered (Valera 2018) (Figure 2:2). The apex is completely closed, allowing to estimate a death age equal or greater than 14.5 years (AlQahtani 2009). It presents slight wear, grade 2 (Smith 1984) and a postmortem traumatic lesion on the buccal surface of the root. Enamel hypoplasia are absent as are the presence of tartar or cavities.

Figure 2 – 1. Mandible of Ditch 13; 2. Tooth in Ditch 8; 3. Bones from Ditch 5.

Ditch 5 (Survey 2, Sector Q)

Cremated bones were recovered from the Late Neolithic Ditch 5, in the section excavated in Survey 2 of Sector Q (Table 2, Figure 2:3). In this section the ditch was 1.6m wide and 0.54m deep, with a convex profile. Below a thin top layer of brown sediments, the rest of the filling was very homogenous until de bottom divided into two longitudinal deposits: SU 351 on the South side and SU 352 on the North one (Valera 2018). They are distinguishable essentially by the slightly lighter coloration of the south side and by an incomparably greater presence of ceramics and fauna on the North side. It was on this North side and integrating this ceramic and faunal deposits that the human bones were identified. They comprise a group of non-identifiable fragments of long bones, a cranium fragment, a fourth metacarpal (MC) and the sternal extremity of a clavicle fragment whose incomplete degree of fusion indicates belonging to an individual under 30 years of age (MacLaughlin 1990). No sex diagnosis was possible. The MNI is 1.

All the fragments reveal signs of exposure to fire. The white colored were the most frequently found followed by those with gray / whitish tone. This data reflects that most of the material was exposed to temperatures above 645 degrees Celsius (Shipman *et al.* 1984). The type of fractures observed are mainly longitudinal cracks, with the presence of some transversal cracks. Curved fractures, which are often associated with the shrinkage of the periosteum as a reaction to soft tissue rupture (like muscles and tendons) due to heat (Symes *et al.* 2008), were identified in one fragment of this sample. However, recent work has shown that these fractures can also be found on burnt dry bones (Gonçalves *et al.* 2011; 2015). These are the most ancient examples of cremated human bones at Perdigões.

Table 2 – Cremated bone fragments identified in Ditch 5 (Sector Q) in Perdigões.

Bone Fragment	Laterality	Age	Sex
Cranium	NO	Adult	NO
Sternal Ext. Clavicle	Left	<30	NO
MC 4	Right	Adult	NO

3.2. During the Chalcolithic phase

During the Chalcolithic phase of Perdigões several formal funerary contexts were built in the Eastern extremity of the enclosures (Tombs 1 to 4) and in the centre (Pits 16, 40 and Cist 1 and associated Ambiente 1), but human remains continued to be integrated in depositions inside non-formalized funerary structures, such as Ditches 2, 3, 4 and 7.

Ditch 2 (Sector L)

During the 2016 archaeological campaign, in a survey done in Ditch 2 (excavated in the context of the 2008-2016 collaboration with the Málaga University within the research programme of Perdigões), a fragment of right humerus preserved in about two thirds (191 mm) of the diaphysis was recovered in SU 602. It was fractured above the deltoid tuberosity and no fragments of the metaphysis or proximal end were identified. It presented a recent fracture in the middle of the diaphysis and was also fragmented below the distal metaphysis. Six small bone fragments of the distal epiphysis were recovered, which, given their degree of fragmentation, could not be glued back together. All visible epiphyses were fully fused indicating it belonged to a skeletally mature individual of undetermined sex (Márquez Romero 2016).

Ditch 2 has a U-section, with open walls and broad, rounded base. The maximum width in this survey near the gate is 4.60m (but the ditch is wider), with a depth of 2.09m. It is dated from the Chalcolithic and presents a complex stratigraphy with changes in the depositional dynamics, alternation between anthropic and natural deposition phases, into which pits were excavated, which in turn, in some cases could correspond to episodes of recutting. Two main phases of filling were identified and SU 602, where this isolated human bone was recovered belongs to Phase 1 (*Idem*).

Ditch 3 (Sector I)

These were, alongside the ones from Ditch 4A, the first human remains identified in ditches in Perdigões and have been already published (Valera, Godinho 2010).

Inside Ditch 3 a radius was recovered as part of a structured deposition, in SU 94. Indeed, in Ditch 3 it was possible to identify several moments of intentional depositions not involving human bones, corresponding to horizontal accumulation of stones, pottery shards and abundant faunal remains (Idem: 30). At the Eastern wall of the ditch, in a niche found half way up, a cranial fragment was recovered from what seemed like an intentional deposition and dated from the second quarter of the 3rd millennium BC (Figure 3).
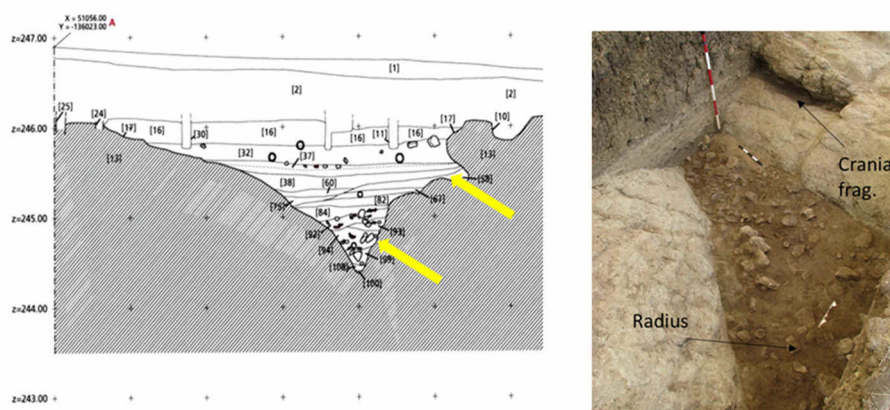

Figure 3 – Ditch 3, with the location of the recovered human bones.

Ditch 4A (Sector I)

In a stretch of Ditch 4 from Sector I, a hand phalange was recovered from SU 18 in the more recent filling layers of the ditch. In SU 90, one of the deeper deposits of this negative structure, a fragment of a left radius, a fragment of skull, 3 metacarpals and 3 hand phalanx were recovered, although no anatomical connection was identified (Figure 4:A). The MNI for depositions in Ditch 4 is 1, and some of the hand bones were diagnosed as belonging to a probable female individual. Age estimation was hindered by the nature of these human bones although the authors (*Idem*) suggest the individual (s) represented by the hand bones were over 16 years of age. These depositions were found commingled with fauna, ceramic sherds, some stone and copper remains, and were dated from the middle of the 3rd millennium BC.

Ditch 4B (Sector P)

During the 1997 diagnostic campaign at Perdigões, several human bone fragments were recovered from a small survey (Survey 1), located over a SW section of Ditch 4 (Table 3 and Figure 4:B). Though, only after the geophysics, done in 2011, it was possible to correlate this location with Ditch 4 trajectory. The assemblage of bones integrated SU 61, in the top half of the ditch, which had clear stratigraphic evidence of a complex history of cutting and refilling. The bones were found alongside depositions of ceramic shards and faunal remains.
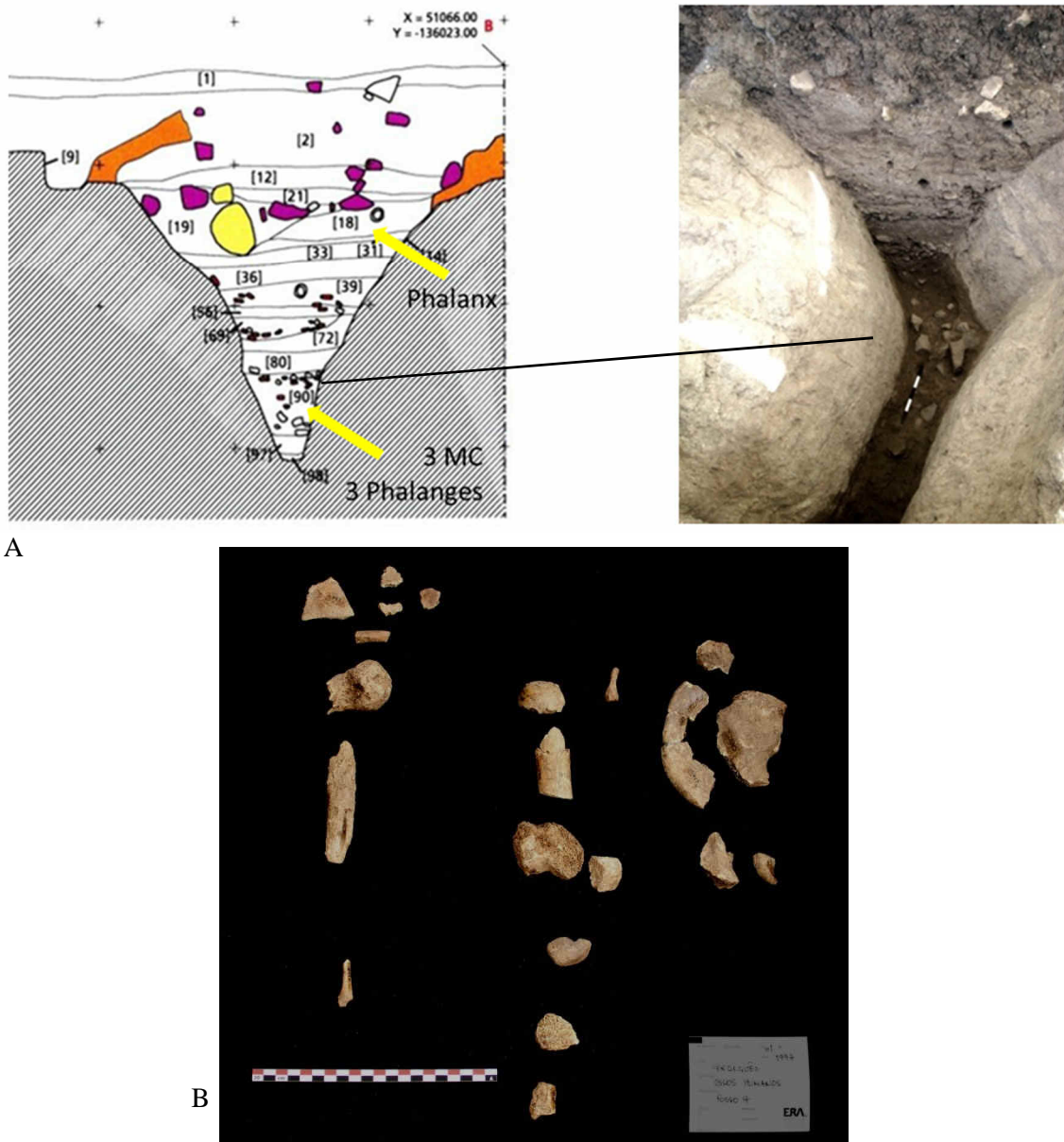
Figure 4 – A. Location of the recovered human remains in Ditch 4A; B. Human remains recovered in Ditch 4B.

None of the bones were recovered complete. Their surface was considerably altered by the presence of concretions. Generically speaking, all anatomical parts of the human skeleton are represented except for ribs and vertebrae. The cranium, scapular and pelvic girdle, lower and upper limbs are present although for the latter only a left MC 4 was identified. They comprise a minimum number of 2 individuals: one adult and one non-adult based on the presence of an immature inferior ramus of the ischium. The ischial epiphysis for the tuberosity starts fusing around the age of 14 for females and 16 for males (Schaefer *et al.* 2009). Although just a fragment of it was present, macroscopical analysis based on size suggests the bone belonged to a much younger individual.

The recovered auricular surface was analysed for age estimation following Lovejoy and colleagues (Lovejoy *et al.* 1985) although it was not possible to score some of the features due to the level of concretion and wear on the bone surface. Nonetheless, it is possible to affirm that this bone probably belonged to a young adult: slightly coarse granularity and no retro auricular activity were visible.

The presence of a possible male individual is based on the metric analysis of a left femoral head with a vertical diameter of 44 mm, above the section point of 43,23 mm defined by Wasterlain (Wasterlain, Cunha 2000).

Table 3 – Bone fragments identified in Ditch 4B (Sector P) in Perdigões.

Bone Fragment	Laterality	Age	Sex
Ilium	Right	Non-Adult	***
Ischium	Right	Non-Adult	***
Ilium	Right	Adult	NO
Cranium	NO	Adult	NO
Clavicle	NO	Adult	NO
MC4	Left	Adult	NO
Ilium (Auricular Surface)	Right	Adult	NO
Ilium	Right	Adult	NO
Femur Prox.	Left	Adult	NO
Femur Diaphysis	Left	Adult	NO
Femur Prox.	Right	Adult	Male?
Femur Diaphysis	Right	Adult	NO
Femur Distal	Right	Adult	NO
Patella	Right	Adult	NO
Tibia	Right	Adult	NO
Cuboid	Right	Adult	NO
MT5	NO	Adult	NO

Ditch 7 (Sector P)

The section excavated in Ditch 7, still unpublished, showed a "V" shaped ditch, with 2.95 m deep and 3.95 m wide at the top. A first sequence of horizontal depositions of stones, pottery shards and faunal remains, intermediated by deposits with less materials, was filling the lower half of the ditch. This sequence ended and was intentionally closed with a deposition of a small stone agglomeration. The top half of the filling was different and presented several episodes of recutting and refilling.

Human bone fragments were integrated into a continuous horizontal deposition [SU91] and [SU92] which contained stones, ceramic fragments and abundant animal remains, integrating the referred first sequence of the filling. The frontal fragment (ner. 3315 from SU 91) and the mandible (ner. 3318) were found very close to each other and towards the South of the section. The remaining cranial fragments (left and right parietal, and occipital) were about 1.20 m to the North.

The frontal bone belonged to a non-adult individual ($\geq$ 2 years of age) (Schaefer *et al.* 2009) and was found almost complete, broken into 3 fragments that were glued back together during laboratory work (Figure 5:3). The internal table of the bone was covered by a thin layer of concretion that rendered the analysis of the bone surface impossible. The outer surface showed no relevant alteration. The metopic suture was completely obliterated. This process is usually completed around the age of two indicating it belonged to a non-individual above that age.

Figure 5 – 1. Sequence of depositions in Ditch 7 where the human remains were collected (red ellipse); 2. Mandible from Ditch 7; 3. and 4. Skull fragments from Ditch 7 (4. With possible scalping marks).

As for fragment no. 3318 it is a complete non-adult mandible except for the missing condyles on both sides. Like the mandible of Ditch 13, it is broken in two by the chin and deposited with the fragments orientated to opposite directions (Figure 5:2). The presence of the whole deciduous dentition of the individual (in full occlusal position), the crypt of the FDI 81

(and its size, which suggests that the crown was already complete), as well as the presence of the first molar cusps and the crypt of the FDI 36 (and also the probable crypt of the FDI 37) suggest the approximate age of 3.5 years of age (± 12 months), according to Alqahtani *et al.* (2010), or 4 years of age (± 12 months) according to Ubelaker (1979 in Schaefer *et al.* 2009). The deciduous central incisor presents a small level of wear, grade 3 on the scale suggested by Smith (1984), with exposure of a thin line of dentin (more evident in the left tooth). The remaining preserved dental pieces exhibit reduced wear, grade 2 on the same scale, with small wear facets with no dentin exposure.

About 1.5 meters to the North of fragment 3315, 48 cranial fragments were collected also belonging to a non-adult individual (no..3316). After the collages, a left parietal, a right parietal and an occipital were reassembled (Figures 5:4).

The left parietal is the most complete element with almost all of the sagittal and coronal sutures preserved. It is the area around the inferior border that is more incomplete and damaged. The internal surface shows no relevant changes. On the external surface, alterations caused by heat are visible in 1.5 cm of the 1/3 third of the coronal suture (C3) and abundant incision like alterations appear to start upwards from the inferior border towards the sagittal suture (Figure 5:4). The anthropic origin of these lines cannot be ruled out (Figure 8) and could correspond to a scalping process.

As for the right parietal bone it was glued back together from 35 bone fragments. Only a small segment of the coronal suture (C1 / C2) is visible. It also shows signs of exposure to fire on its internal and external surfaces that acquired an orange brown coloration in the less affected, zones evolving to a dark brown / black coloration in the zones where the action of the fire was more intense. This fragment also presents the same incision-like alterations that appear to originate in the lower border towards the upper part of the parietal.

Table 4 - MNI per non-formalized funerary structure in Perdigões.

Structure	Chronology	MNI	Adults	Non-Adults
Ditch 2	Copper Age	1	1	0
Ditch 3	Copper Age	1	1	0
Ditch 4A	Copper Age	1	1	0
Ditch 4B	Copper Age	2	1	1
Ditch 5	Late Neolithic	1	1	0
Ditch 7	Copper Age	1	0	1
Ditch 8	Late Neolithic	1	1	0
Ditch 13C	Middle Neolithic	1	1	0
Pit 62	Middle Neolithic	1	1	0
Total		**10**		

Table 5 - Skeletal parts represented in the different non-formalized funerary structures in Perdigões.

	Ditch 2	Ditch 3	Ditch 4A	Ditch 4B	Ditch 5	Ditch 7	Ditch 8	Ditch 13C	Pit 62
Cranial		x		x	x	x	x	x	x
Axial Skeleton									
Upper limb	x	x	x	x	x				
Lower limb				x					

Finally, it is the left side of the occipital bone which is mainly preserved. It has a dark brown coloration on 85% of its external and internal surface, probably due to the action of fire. The remaining surface has a light brown tint. Along the base of the occipital, a set of circular marks with about 0.5 mm in diameter are visible. The origin of these small punctures is unknown. Abundant, short linear incisions that radiate upwards from the nuchal region were also identified.

None of the bone fragments identified within the archaeological excavation of Ditch 7 overlap anatomically. They all belong to a non-adult individual and are metric and morphologically compatible and therefore the possibility of them belonging to a single individual ($\geq$ 2 years old) cannot be ruled out. The mandible was directly dated, providing the following result: ICA-15T/1023, 4010±30 – 2620-2470 cal BP 2σ.

An overview of the non-formalised human depositions known in Perdigões up to now allows to conclude that this is a cross-chronological phenomenon identified in structures belonging to the Late Middle Neolithic through to the Copper Age (Table 4). There also seems to be no cultural selection in terms of the individuals deposited taking into account their biological profiles. In fact, data are showing that fragments of both male and female individuals are present in these depositions and that there is also not a distinction based on age as elements belonging to adult and non-adult individuals were identified.

These finds also have in common the fact that they appear in the archaeological record in the form of human remains dispersed through conglomerates of rocks, fauna, fragments of pottery in what can be considered as depositions imbedded with intentionality. Cranial fragments and elements seem to integrate these deposits quite frequently (Table 5) at the same time that the axial skeleton seems to be absent. Episodes of intentional fragmentation of mandibles were identified in ditches 7 (Copper Age) and 13c (Late Middle Neolithic). So far, archaeological evidence for deposition of human bones in ditches points to secondary deposition of unarticulated human bones with complete absence of any primary depositions or even of partial anatomical connections in these depositions, some of which might have been unintentionally carried along with other materials filling the ditches.

4. Depositions of human remains inside ditches in other enclosures

The identification of scattered human remains deposited in ditches is increasingly growing in Iberian ditched enclosures (Figure 6).

At Los Marroquiés Bajos some none quantified human remains, with partial anatomical connections, were recorded in Ditches 4 and 5 (Zafra de la Torre *et al.* 2003: 83). In the central ditch of La Pijotilla, some human skulls were deposited together with faunal remains, pebbles and pottery shards (Hurtado 2003; 2008). At the inner ditch of San Blás, dated from the second half of the 3rd millennium BC, a mandible and a phalanx were deposited together with other archaeological materials and faunal remains (Hurtado 2008). At Valencina de la Concepción several evidences of this practice are known. In La Perrera, in the middle of a 7m deep and "V" shaped ditch a skeleton in foetal position, another in anatomical connection but without the head and a third in partial connection and partly burned were recorded (Fernández Gómez, Oliva Alonso 1986: 20). In an inventory presented by Costa Carmaré and colleagues (2010), the following minimum numbers of individuals were presented for the ditches of La Perrera (n = 10) also re-analysed by Marta Diáz-Zorrita Bonilla (2017), for the ditch of La Candera (n = 2) and for the ditch of Matarrubilla (n = 13).

At Camino de las Yeseras two fragments of skull and another two fragments of humerus were collected in the North section of the ditch of enclosure 4, commingled with abundant faunal remains. It is underlined that some of the human bones have marks of carnivorous bites. Scattered human bones were also reported in a central structure, in what are considered to be hut structures and in pits (Liesau *et al.* 2013/2014; Ríos *et al.* 2014).

At Porto Torrão, in Sector 3, East – a section of an internal ditch revealed the deposition of human remains in the first phases of the filling (Santos *et al.* 2014; Rodrigues 2014). Approximately 100 human remains were identified, some in anatomical connection around faunal remains. The bones of a further 6 individuals (2 adults, 3 non-adults and one of indeterminate age) were also uncovered. Sexing the adult individuals was not possible. Isolated finds are also

mentioned: a cranial fragment and a cranium with a mandible. No absolute chronology is yet available for these depositions.

In the 2003 archaeological intervention at Porto Torrão ditched enclosure in the context of a mitigation process of a high voltage electric poles which would have direct impact on the prehistoric site (Valera, Filipe 2004), this practice was recorded and dated. One of the poles, pole 181, was in the more central area of the site. Several negative structures were identified, including pits and two large ditches. Human bones were identified in Ditch 2 and Pit 3 and are published here for the first time.

For Ditch 2, fragments of two left femurs, a right tibia and a probable right ulna were found alongside the almost complete cranial vault (missing the left temporal, zygomatic, maxilla and mandible). All these bones belong to adult individuals although analysis of the degree of suture closure on the cranium revealed it probably belonged to a young individual (Krogman, Iscan 1986). No sexual diagnosis is possible. Only a small portion of the left orbit on the cranial vault survived showing evidences of microporosity compatible with *cribra orbitalia*, a condition widely accepted as a result of anemia, which is typically due to an iron deficient diet. among other things, such as infectious disease (Wapler *et al.* 2004; Waler *et al*. 2009).

These human remains were identified in the lower half of the structure in deposits which included the presence of International style bell-beaker pottery and which have been dated to the 3rd quarter of the 3rd millennium BC (Valera 2013a). This shows that these practices extended to beaker times, as the chronology obtained for the remains of Ditch 7 of Perdigões, although not associated to beaker pottery, also shows.

For Pit 3, a 1.5 m deep circular structure, two main deposits were identified with high concentrations of ceramic material and faunal remains. A group of 13 cranial fragments was recovered from SU 2012. This structure is also dated from the second half of the 3rd millennium BC (Valera 2013a).

Other occurrences of human remains inside ditches, still poor characterized, have been documented in other smaller enclosures at La Loma del Real Tesoro, (Escudero Carrillo *et al.* 2017), Los Limoneros (Barciela *et al.* 2014), Marges Alts (Pascual Benito 1989), Arroyo Saladillo (Sánchez Voigt 2014), Monte das Cabeceiras 2 (Borges 2015) or Montoito (Mataloto, personal information).

1 – Perdigões
2 – Porto Torrão /Carrascal
3 – San Blás
4 – Montoito
5 – Pijotilla
6 – Valencina
7 – Marroquiés Bajos
8 – Camino de las Yeseras
9 – Marges Alts
10 – Los Limoneros
11 – Monte das Cabeceiras 2
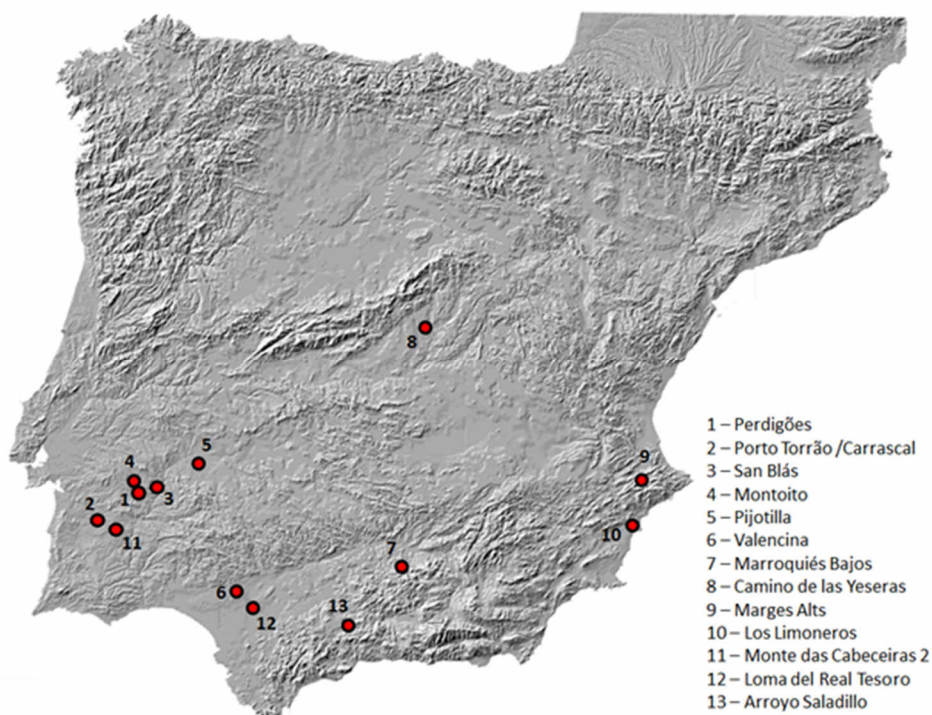12 – Loma del Real Tesoro
13 – Arroyo Saladillo

Figure 6 – Iberian ditched enclosures with depositions of human remains inside ditches.

The first approaches to this practice in Iberia did not develop the subject much. Bones were considered to have been extracted from their graves and dumped into the ditch or to belong to individuals who died and were abandoned there (Zafra *et al*. 2003: 83), resulting from ritual sacrifices (Hurtado 2003: 247) or disposed as garbage (Hurtado, 2008: 190) or even as a result of acts of interpersonal violence leading subsequently to the victims being thrown into the ditches (Fernández Gómez, Oliva Alonso 1986: 20). The use of words such as "dumped" or "thrown" expresses the dominate perspective present in the traditional interpretative discourses regarding these contexts, considered to be a reject of, possibly inconsiderate, human remains.

However, these practices, have a wide distribution and are well known in European ditched enclosures, where scattered bones, frequently fragmented and commingled with other materials (pottery shards, faunal remains, stones), are common. Anatomical connections occur, but they are less common, especially the complete ones. A good European example is Herxheim (Orschiedt, Haidle 2006; Zeeb-Lanz 2014). There, 96% of the human remains representing more than 450 individuals are deposited in two ditches. They presented a high level of fragmentation, with intense marks of manipulation of some bones (skull scalping and shaping; marks of defleshing and dismemberment; smashing of certain bones), showing a significant investment in body treatment and in the spatial distribution of the remains. Similar procedures of segmentation and fragmentation were reported in Heildelsheim (Andersen 1997), Calden (Raetzel-Fabian 2000), Hambledon Hill (Mercer 1980), Montagan (Joussaume, Pautreau 1989) or Gravon (Mordant, Mordant 1988), But, has referred above, primary burials have also been detected inside ditches, at Maiden Castle ad Flagstones (Thomas 1996) or Champ-Durand (Joussaume 1988). These examples (easily multipliable) document a recurrent intentional practice and the variability of body treatment and of contexts of deposition of human remains of the Late Neolithic and Chalcolithic communities. This recurrence contradicts the idea of an occasional practice and is most possibly related to some shared cosmological principle at a large scale, which megalithism also indicates. The interpretation of these depositions as ceremonial practices was developed initially in the first half of the 20th century (Evans 1988a), and during the eighties they gave way to the interpretation of some enclosures, such as Hambledon Hill, as centres of death management (Mercer 1980).

In Iberia, the anthropological results for most of these sites still come up against badly established temporalities, a great variety of mortuary practices and body treatments happening in different architectures with different artefactual sets. However, what is also very clear, at least for Perdigões, is that these different practices involving human bones all come together reunited in the same physical place, built and rebuilt throughout approximately 1,500 years and that each of these realities must have played a part in the construction of meanings and the embodiment of beliefs for the communities that used that site for the deposition of human remains.

The recent empirical revolution has put many points on the map of prehistoric landscapes of the Alentejo inland. The change in the archaeological record shows a diversification of the funerary structures and practices but also a considerable increase in the number of known ditched enclosures (Valera 2013b; Valera, Pereiro 2013). These may or may not correspond to stages for performing practices related to the use of human remains and the concentration of monuments associated with ditched enclosures seem to be happening mainly in the larger ones of the Évora and Beja district. In fact, as far as the recent investigations show, not all enclosures hold funerary practices or document the handling of human remains. However, it is now clear that this interaction between ditched enclosures and the social practices involving the manipulation of the human body (Valera 2016) starts early within the time span of the phenomena of enclosures (sometime around the middle of the fourth millennium, at least in Perdigões), and this correlation seems to increase significantly during the 3rd millennium BC, reaching the late phases of the Chalcolithic.

The expression, both in time and in space, that funerary practices and the handling of human remains are showing in some large ditched enclosures cannot be dissociated from other characteristics that many of these sites exhibit. Namely, the little evidences of permanent residential structures for all their time span or of a strong agrarian engagement, the documentation of periodic ritualized practices of deposition and feasting, the squandering practices suggesting social emulation processes, the importance of the circulation and consumption of exotic materials,

the cosmological bonds of the enclosures design or the levels of human and animal mobility. This multi variable perspective is gradually but steadily moving interpretation away from the standpoints that approach these large sites as "macro-villages" or urban/pre-urban settlements with associated and clearly spatially defined necropolis areas (Márquez Romero, Jiménez Jáimez 2010; García Sanjuán 2017; Valera 2013b; Valera *et al.* 2014b).

It brings them closer to places where a range of very diversified social practices occurred under a set of ideological and cosmological rules that can be considered part of the Neolithic ontology and materialize in many other arenas. Although they must have served different purposes and probably had different roles and meanings according to each region, duration, position in interaction networks, etc, these large enclosures can be looked at as stages for social practices that replicate and give sequence to everyday life. A place like Perdigões could have functioned as a local or regional centre for the funerary treatment of the dead, amongst other things. The recognition of this centrality can be seen in the data provided by research on human and animal mobility through isotopic analysis, of provenance studies of raw materials and of exchange networks regarding exotic objects. At Perdigões, as probably in other large ditched enclosures, funerary practices and the handling of human remains were a reflection and simultaneously a condition of such a centrality.

5. Interpreting the deposition of human remains in ditches

The presence of isolated human remains integrated into specific and intentional deposits inside negative structures in Perdigões at the same time as other more formalized funerary practices are taking place calls for a reflection on how this form of deposition, performed and enacted by the living community, can allow for an insight on social practices, context and meaning.

In any society, between the moment of death and the moment of final deposition of the body or what remains of it, (a period that can take hours, days, months or years), many variables and forms of body treatment can occur (Pearson, 2000). In other words, funerary practices are embedded within biographies, that may be short or extremely long. An archaeological mortuary record can be built based on any moment of a sequence or comprising several stages of the sequence. When identifying a funerary context or a deposition containing human bones it is difficult to tell which part of the "funerary cycle" we are accessing, what part of the process is being revealed to us (Weiss-Krejci 2005; 2011a; 2011b).

Additionally, and especially regarding prehistoric societies, the rules, prescriptions or mental framework involved in the handling of death can be far from being completely understood. These are difficult codes to access. But if it is accepted that the range of possibilities following the biological death of individuals are much broader than our westernized world vision foresees, different levels of interpretation can be reached.

The use of human bones in these non-formalized funerary contexts cannot be linearly and exclusively associated with the traditional vision of funerary practices, normally linked with a set of ritual actions that ensure the transition from the world of the living to the world of the dead and which involve several and normalized phases of corpse treatment until the moment of final deposition, normally in identifiable containers usually accompanied by grave goods. Nor can it simply be regarded, based in a sense of unfamiliarity with these practices, as meaningless discarding procedures.

In fact, all possibilities must be considered. When facing a context containing human bones it is not clear, in many cases, what phase of the funerary cycle led to it. They may be at any stage of this "transition period" towards intended final deposition. And even after this intended final deposition, they may be called later to participate again in social life and be brought to new social arenas.

The transition period can involve various forms of body treatment to accelerate, or avoid putrefaction including cremation, excarnation, mummification, defleshing, drying in the sun, to name a few. They may be subject to temporary depositions on scaffolds, trees, under house floors, or in temporary monuments. All variations are possible and can have simultaneous or different effect on the bones (Pearson 2000; Weiss-Krejci 2005; 2011a). So that when bones are deposited

in their intended final resting place they may be completely articulated, partially articulated or disarticulated, fragmented on purpose or not, or cremated. The final deposition places can vary too: in specifically built structures or in reused features, above or underground, in the ocean or rivers, under trees, for example.

And then we must consider the possibility for post funeral processes occurring in the form of manipulation, tomb revisiting, exhumation and reburial. All these processes are actions that may or may not be ritualized or respond to particular cycles or festivities, to specific historical periods of warfare or many other social and political practices. That is why the borders between funeral and non-funeral practices involving human remains are not always clear.

Bearing these premises in mind when analysing the interaction between recent prehistoric enclosures and depositions or use of human bones, some of the practices can be more easily identified, providing some insight into the Neolithic practices.

At Perdigões, the coexistence in the same space of a significant number of different structures and funerary practices or involving the handling of human bones, with a wide variety of body treatments, have in common the fact that the integrity of the human skeleton is the exception. If we want to make a direct association between the unity of the skeleton and that of the individual (with the maintenance of its integrity), we do not find it in the material remains. Indeed, regardless of the type of context (funerary formalized or non-formalized) we do not find in Perdigões, with the rare exception of the Late Neolithic funerary depositions in Pit 11, a reference to a supposed unity of being through the intended preservation of the unity of the skeleton. And this is something that, so far, the formalized funerary structures and the non-funerary ones with human remains have in common.

The state or quality of being one or united into a whole, which defines unity in our modern view of the world, seems to be questionable for these communities. In fact, it is the whole that is missing in the archaeological and anthropological record and so it seems that we must focus on the separate parts of a whole and ask questions relating to or involving the relationship of parts to a whole. Meaningful fragmentation strategies seem to be a central social tool for the conveying and materialization of this idea. Not just of objects but also of people. The establishment of significant links must be considered for bodies that could be dismembered, disarticulated and divided as the essence of the being / individual is dispersed by significant structures and places. This phenomenon may not be limited to Perdigões spatiality and works at much larger scales, as the studies of the mobility of people (or bones) are suggesting, since that, in the ongoing study, the percentage of exogenous people to the Ribeira do Vale do Álamo valley (the local area of Perdigões) is high (Valera *et al.* in preparation).

This fact gives us some clues about ontological principles ruling the way the human body is treated after death by these communities. One of the working hypothesis could be the existence of a «chaîne opératoire» in Perdigões regarding funerary practices and the treatment of human bodies. Although this concept was initially developed for lithic technology, it can be used also for funerary practices since it centres around the idea of matter being successively transformed into a final product. The notion of an operational chain implies the idea of succession, but above all the interaction of the different elements that constitute it. In other words, when analysing the different funerary practices taking place in Perdigões, it could be argued that they result from social acts involving a step-by-step manipulation and use of the human skeleton under one specific funerary practice or several, divided into several stages (themselves divided into sequences) corresponding to a change of state of matter under the guidance of an agent, towards an end.

Human remains are given different treatments and fates and have different forms of participating in these processes. In one hand, the normalised funerary practices dispose of human remains in formal, easily revisitable and identifiable structures (like pits or tholoi), so that they remain open to post funeral processes of manipulation, tomb revisitation or circulation. In the opposite way, we could argue that the ones found in the bottom or in the middle of ditch fillings singly deposed alongside animal bones, stones and pottery shards (a practice that seems exclusive of these ditched enclosures), have less chance of being recovered and are more easily forgotten, and when finally deposed or enclosed they become socially dead.

Likewise, the information shown on the diversity of treatment given to human remains show that the dead are brought to participate in whatever social practices are taking place in these sites as entities that have only gone through a biological death but are socially still very much capable of being part of the arena. This could reveal a mental framework where boundaries between worlds and existential categories are much more fluid.

In recent years, the emergence of posthumanist and neomaterialist approaches to social and humanist sciences, have allowed for a redefinition of this anthropocentric perspective on the material world, shifting the role of people and things in the social processes (Fahlander 2017). The impact of neomaterialism in archaeology is still marginal but an approach which radically changes our traditionally human-centered point of view into one which does not "draw any distinctions between natural matter and that which has been modified by humans" (*idem*: 76) confers the material world a wider importance when trying to comprehend past practices. It goes along with the criticism to the "human exceptionality", put forward by the so called Amazonian ethnography, that stresses the body's instability and its construction and reconstruction through relational configurations occurring in the social processes (Viveros de Castro 1998; 2004). In the case of what is being discussed here, it would call for a displacement on our approach of the depositions of human remains found inside non-formalised structures and interpret them under a different light. Could the human remains become deflated, devoid or drained of their intrinsic human value and transported to a category where they are equated to other materialities? Or is their presence in these contexts that levels up the other materialities in ontological terms? The main point is that there seems to be an ability for metamorphosis (Ingold 2000) that generates an ontological instability of human, animals and materials. The development of the Neolithic may be seen as a transition period, where relevant traces of more fluid cosmologies can be found, generating permeable categories and a more relational connection between things and beings and between wholes and parts, and existential states. What these funerary practices might mean or how the dead were socially active depends a great deal on how Man saw himself and how he perceived the relations between worlds.

The presence of human remains, independently of what might be our perspective on the reasons, document an intentional anthropic integration in the fillings of the ditches. Even if some cases, like the bitten bones of Camino de las Yeseras (Liesau *et al*. 2013/2014), could support arguments in favour of a random origin, most of the situations document human intentionality. This intentionality must not be confined to a specific subsystem, such as the religious one or, in an opposite direction, such a domestic disposal of some sort of meaningless remains. Rather, it reports to social actions that cross all the social whole, and therefore, its spaces, activities, and assorted displays. A wider perspective considers that these human remains in ditches are just a part of the materialities that are submitted to intense manipulations inside the enclosures, and that would build the significance of each enclosure (Whittle 1988a; 1988b; Edmonds 1993; Márquez Romero 2003; 2004; Márquez Romero; Jiménez Jáimez 2010; Valera, Godinho 2010).

For this matter, the spatial distribution of the formalize and non-formalized structures with human remains is also of importance. In the last decade, the idea of a well-established spatial segregation of necropolis areas in some Iberian large ditched enclosures has been questioned. At Valencina de la Concepción, the spatial analysis of human remains shows a distribution between random and dispersed, but not concentrated, contradicting the notion of a well bounded funerary ground (Costa Caramé *et al*. 2010: 96, 103-104). However, in architectonic terms, there seems to be a concentration of megalithic monuments in the Southern area and of non-megalithic features in the North quadrant. A circumstance that does not mask the fact that all the vast complex of Valencina participates in the practices of manipulation of human remains: *"Rather than as a settlement with a sharply dual space, whereby one sector was occupied by the living ("domestic / productive" sector) and one by the dead ("funerary" sector), the Valencina site should be understood as a large space of occupation and use in which various functions and activities (productive, domestic, funerary and votive) overlapped, both in space and in time, according to complex patterns which at this time are not yet fully understood."* (*idem*: 105).

In Perdigões, a similar scenario occurs. In the eastern area of the enclosures there is a concentration of formalized funerary structures (Lago *et al*. 1998; Valera *et al*. 2000; 2007; 2014b). Radiocarbon dating shows that these tombs were previously unbounded, and that only by

the middle of the 3rd millennium BC some of them became surrounded by the outside Ditch 1 of Perdigões enclosures. But were still in use when they became "inside" features. At the same time, at the centre of the enclosures, structures for the secondary deposition of human remains were built and human remains were being deposited in ditches in different areas of the site. In fact, in one way or another, human remains occur in almost all surveyed areas in Perdigões, showing a general spatial permeability to the practices involving human remains. As A. Whittle stressed thirty years ago, *"(…) it is unwise to separate the human burials from the complex as a whole (…) The site is demonstrably the scene for prolonged depositions of various kinds, amongst which the human burials are only one element."* (Whittle 1988b: 144-145).

The different contexts with human remains at Perdigões must be understood in a relational way with all the other practices that were taking place at the site and not as an individualized and well segregated dimension of social life. As argued before, *"The practices related to death management can hardly be understood separately from the social practices as a whole, because their 'function', their symbolic, social, spatial and temporal expressions go far beyond the specific intent to provide a place for the dead. It makes sense to ask, at this point of research, if aren't Perdigões essentially a place for symbolic and practical management of death and life, a scenario for a grate variety of ritualized social practices (…) to which we lack a specific designation in face of the operative inadequacy of terms such as settlement, necropolis, monument, etc., due to the bounded and exclusive character they carry."* (Valera, Godinho 2010: 37).

But they also need to be integrated, in a higher scale, with the practices involving all the megalithism, for they are expressions of it (Evans 1988a; 1988b; Whittle 1988a; 1988b; Andersen 2002; Bradley 2005). Not just because in general we are talking about the same people and cosmologies, but because there is an effective interrelation in spatial organization of landscapes and in the practices themselves (Valera 2016), especially if we take in consideration that most of the contexts of human depositions at Perdigões during the 3rd millennium BC are of a secondary nature.

Finally, this is a repetitive practice through all the chronology of Perdigões. The importance of repetition for these prehistoric societies was eloquently debated by Eliade (1969), and if meaning was built by participating and relating in specific contexts, it was also resulting from the repetition of old and recurrent practices. In this sense, the long-term practice of depositing human bones in ditches amongst faunal remains and other materials may be seen as a replication of primordial and paradigmatic gestures and acts that anchors each present in the tradition that provides its "reality". Stability is acquired by repetition.

6. Conclusion

The presence of human remains inside ditches is a frequent circumstance in European enclosures, and in Iberia they are being more frequently found, especially in the large ditched enclosures. They are just a part of complex and socially unbounded practices that involve human remains and other materialities, that respond to more fluid and permeable categorizations of the world that tend to mix things, places, times, and practices. As a product of relational behaviours, they need to be approached in relational terms, and not as an autonomous entity or procedure.

As seen with ditched enclosures, these practices of manipulation of human remains also disappeared by the end of the 3rd millennium BC in Southwest Iberia (Valera 2015a), entering a period when predominantly primary individual or multiple burials prevail. This contrast, in other parts of Europe, has been seen as a change in ontological conceptions of the self and in the processes of subjectification, from more dividual and porous identities still anchored in strong collectiveness, to more bounded perceptions of the individual (Thomas 1991; Treherne 1995; Chapman 2000).

What these depositional contexts of the 3rd millennium suggest is a reality where self-definitions are in permanent negotiation, more instable, and where living and non-living beings seem to lack an autonomous value or identity. They acquire (or construct) them by participating in successive contexts, through the relations established in each context.

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CHAPTER 4

TILL DEATH US DO PART? HUMAN SEGMENTATION IN FUNERARY PRACTICES IN THE MIDDLE NEOLITHIC CEMETERY CAVE OF BOM SANTO (MONTEJUNTO MOUNTAIN RANGE, PORTUGAL).

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Abstract

Ongoing multidisciplinary studies of skeletonized human remains from the Middle Neolithic Bom Santo Cave (Lisbon, Portugal) is indicating a very heterogeneous population at various levels (diets, mobility and genetics). The current interpretation suggests that its socio-economic and funerary territories encompassed the lower Tagus, its tributaries and the granitic sectors of the Mora–Pavia area in the Alentejo.

Archaeothanatological analyses indicated mutually exclusive funerary practices: secondary depositions at Room A and primary and secondary depositions at Room B. Polished stone tools are evenly distributed in both rooms, while ornaments, pottery, flint blades and sheep/goat phalanges are almost restricted to Room A.

Such distribution patterns reflects the coexistence of distinct funerary practices in which Room A is part of a much complex behaviour that included primary depositions, exhumation, transportation and re-deposition of human bone remains between different sectors of the cave and/or cemeteries (caves, dolmens) of the above-described territory. Thus, a more dynamic (in its rituals) and wider (in its geography) set of funerary practices than usually perceived — in which the intentional segmentation of human skeletons is attested — seems to have taken place at the onset of megalithism in central-southern Portugal.

Keywords: Neolithic; population studies; funerary practices; segmentation.

1. Introduction

Ongoing research at the cemetery cave of Bom Santo (Lisbon) is providing a unique and vast array of evidence on the Neolithic populations of Portugal. Together with provenance studies of raw materials and bioanthropological, genetic and multi-isotopic data from human remains, some rather unexpected funerary and ritual behaviour has been determined that push current models to radically new levels of interpretation. Osteological evidence for intentional segmentation of skeletons is an example of those newly discovered ritual behaviours.

In short, Bom Santo is a 400 year-duration snapshot of a Neolithic population coeval of, and most likely co-involved with, the building of the earliest megalithic monuments in the southern half of the country (Carvalho 2014a; Carvalho *et al.* 2012; 2016). Indeed, several types of evidence observed at Bom Santo strongly evoke "megalithic behaviours" (see below) commonly attested in dolmens elsewhere (Carvalho 2016). However, unlike most of its dolmenic counterparts built on acidic soils in neighbouring regions, it has the potential — i.e., bone preservation conditions — to provide direct insights into the buried populations and their funerary practices and rituals, such as the intentional segmentation of skeletons. Thus, it is reasonable to assume that evidence from Bom Santo may be extrapolated to the megalithic monuments where the lack of well-preserved osteological material prevents further inferences on these important research topics.

The aim of this contribution is thus to present a synthesis of ongoing research on the buried population, multi-isotopic and genetic analyses, funerary practices, and provenance of grave goods and raw materials that provide the cultural context within which the observed presence of intentional post-mortem segmentation and manipulation of human skeletons may gain significance.

2. The Bom Santo Cave evidence: population, funerary features and patterns of interaction

Bom Santo Cave is a Middle Neolithic cemetery located on the mid-slope of the north-eastern side of the Montejunto mountain range (Lisbon district), overlooking the right banks of the lower Tagus basin, at 350 metres a.s.l. (Fig. 1A – C). At the time of discovery, 1993, its existence was only deduced from a very narrow slit, hidden under a thick vegetation cover. Removal of the top sediments revealed a limestone boulder sealing the cave entrance after its last prehistoric use. The necropolis occupies the upper two of the three levels in which the cave is topographically structured (the entrance is located in the upper level), reaching a total area of around 285 m^2 comprising 11 rooms with human remains. Human footprints preserved *in situ* in a thin sandy surficial layer near the entrance are eloquent testimony of the cave's notable preservation conditions. The upper level consists of four rooms, of which Rooms A (Seven Heads Room) and B (Shell Room) were systematically excavated. The middle level, the wider one, includes seven rooms but none have been excavated to date. Finally, the lower level is filled with collapsed blocks, making progression very difficult and treacherous. Apparently, there are no funerary contexts here.

In the middle level, around 70 m from (and 25 m below) the entrance, the Bracelets Room
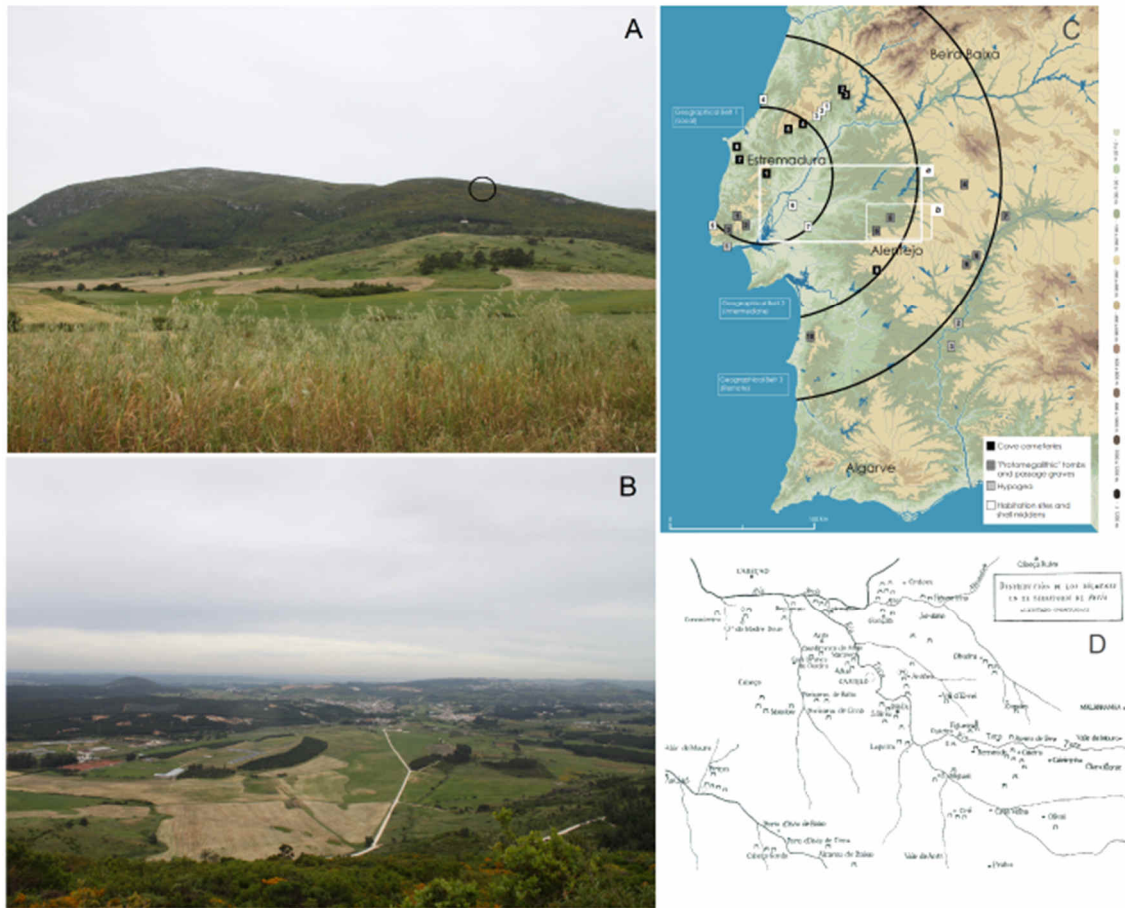
Figure 1 - A - Location of the Bom Santo Cave (circle) in the NE sector of the Montejunto mountain range, seen from the adjacent plain. B - The Tagus plain seen from the Bom Santo's entrance. C - Location of Bom Santo Cave in Estremadura and main coeval sites within the Geographical Belts 1 to 3 and its hypothetical territory (rectangle *a*) and the Mora–Pavia megalithic area (rectangle *b*) (after Carvalho 2014: fig. 6.1, adapted). D - Megalithic monuments of the Mora–Pavia area (after Correia 1921).

Sites names: Cave cemeteries: 1 - Bom Santo; 2 - Ossos; 3 - Cadaval; 4 - Barrão and Casais da Mureta; 5 - Lugar do Canto; 6 - Casa da Moura; 7 - Feteira; 8 - Escoural. "Protomegalithic" tombs and dolmens: 1 - Pedras Grandes; 2 - Trigache 4; 3 - Carrascal de Agualva; 4 - Rabuje 5; 5 - Cabeceira 4ª; 6 - Cabeço da Areia; 7 - Sobreira 1; 8 - Poço da Gateira; 9 - Georginos 2; 10 - Pedra Branca. Hypogea: 1 - São Pedro do Estoril; 2 - Sobreira de Cima; 3 - Outeiro Alto 2 and Quinta da Abóbada. Habitation sites and shell-middens: 1 - Costa do Pereiro; 2 - Pena d'Água Rock-shelter; 3 - Cerradinho do Ginete; 4 - Meu Jardim; 5 - Magoito; 6 - Monte da Foz 1; 7 - Moita do Ourives.

— a name deriving from the various bracelets associated with surficial funerary deposits — is one of the richest sectors of the necropolis owing to the abundance of skeletons. This room has 13 funerary clusters defined according to their location and specific topography. It lies on a north–south axis delimitated to the south by the cave wall. The shorter, west–east axis is rather irregular due to the presence of huge boulders. However, despite rigorous topographic surveying and description (Duarte 1997; Carvalho, Regala 2014), the striking singularity of this room had gone unrecognized until a visit to the cave on November 21st, 2015, when a "megalithic construction" — symptomatically nicknamed "The Altar" — and an anthropomorphic stele were identified (Fig. 2). These two structures, which to our knowledge are unique in Neolithic cave cemeteries in Portugal, were preliminarily described as follows (Carvalho 2016):

> 1 - Aligned against the room's eastern wall, there is a roughly square, thick limestone slab resting on two boulders (one at each end), thus forming the so-called Altar. Both boulders and the back of the slab lie directly on the limestone floor (a naturally elevated and flattened platform), in the contact between it and the ceiling. At the time of the discovery there were two amphibolite adzes *in situ*, on top of the slab, symmetrically placed at each of its ends.

In the slab's central area, there is a large parallelepiped boulder lying on one of its long sides.

2 - Immediately in front of these structures there is a monumental stele resting on top of limestone boulders that crown the platform on its western side. The stele is anthropomorphic in shape, resembling well-known examples associated with (or reused in) megalithic buildings across western and southern Iberia (e.g., Bueno *et al.* 2015). Clearly, this is an impressive monument, with notable topographic — and therefore symbolic — prominence within this true funerary chamber.

Where the room's ceiling meets the back of the megalithic structure, there are crushed human bones. Similarly, under The Altar's slab and all over the adjacent platform there are more crushed and, at least apparently, burnt human bones along with schist discoid beads and tiny fragments of charcoal. All these remains are embedded in a thin humic layer that covers the limestone bedrock (Fig. 2B – D). These pieces of evidence strongly suggest the existence of a cremation area at Bom Santo, which is an extremely rare find in Neolithic cemeteries in Portugal.

At this point in the research, 3D laser-scanning and modelling with LIDAR technologies are still in progress and further work in Bracelets Room will be unavoidable in the future for thorough recording and sound interpretation of these structures and associated funerary and cult contexts. The only rooms that have been excavated so far — Rooms A and B — are located immediately below the steep slope that connects them to the entrance, in the cave's upper level. Sediments form a ca. 40 cm-thick homogeneous deposit. Together with a very coherent material culture, this stratigraphy suggested a single period of use, a deduction confirmed by 19 radiocarbon results that point to a timespan of ca. 400 years (3800–3400 cal BC). As will be discussed below, these rooms were most probably intended for distinct funerary practices, with Room B being used for both primary and secondary depositions, and Room A mostly, if not exclusively, used for secondary depositions (Gonçalves *et al.* 2016).

Human remains from 15 individuals were sampled for systematic analyses (Table 1). To avoid repetition of results, individuals #01 and #02 (in partial anatomical connection) were chosen alongside 12 lower mandibles (#03 to #14), plus the so-called "hunter", from Hunter's Room (#15). Albeit representing only 20% of the population in Rooms A and B (14 out of 71 individuals), this is the first case in Portugal where a chronologically well-defined Neolithic population is fully characterized regarding basic bioanthropological traits (morphology, sex and age at death), direct AMS dating, ancient DNA, palaeodiet (carbon and nitrogen isotopes) and mobility (oxygen and strontium isotopes) at individual level (for a synthesis, see Carvalho *et al.* 2016). The main results are the following:

1 - Genetic analyses revealed the prevalence of sub-types of mitochondrial haplogroups U5, J and H, followed by haplogroups T, HV0 and K. Overall, this genetic composition indicates outstanding mitochondrial diversity that sharply contrasts with evidence from other Neolithic burial sites in the Iberian Peninsula (Carvalho *et al.* 2016: table 5), a fact that suggested the role hypothetically played by systematic exogamic practices as an explanation for the above pattern.

2 - Isotopic insights into palaeodiets indicate a preference for predominantly terrestrial food-sources. However, most individuals (9 out of 15; 60%) also show isotope values indicative of a diet composed by ≥20% of freshwater foodstuffs. This trend parallels the coeval dolmen of Cabeceira 4 (Carvalho, Rocha 2016), located in the upper section of the Sorraia River, at the time a natural route connecting the lower Tagus valley with the Alentejo hinterland. Indeed, this assessment of higher freshwater input in diets is in keeping with the landscape: in the mid-Holocene, the northern limit of the Tagus' brackish waters was located to the north of Bom Santo and resulted in the formation of a very large estuary (reaching 15 km wide) with tributaries permitting upstream navigation to the hinterland and the economic exploitation of abundant wild resources.
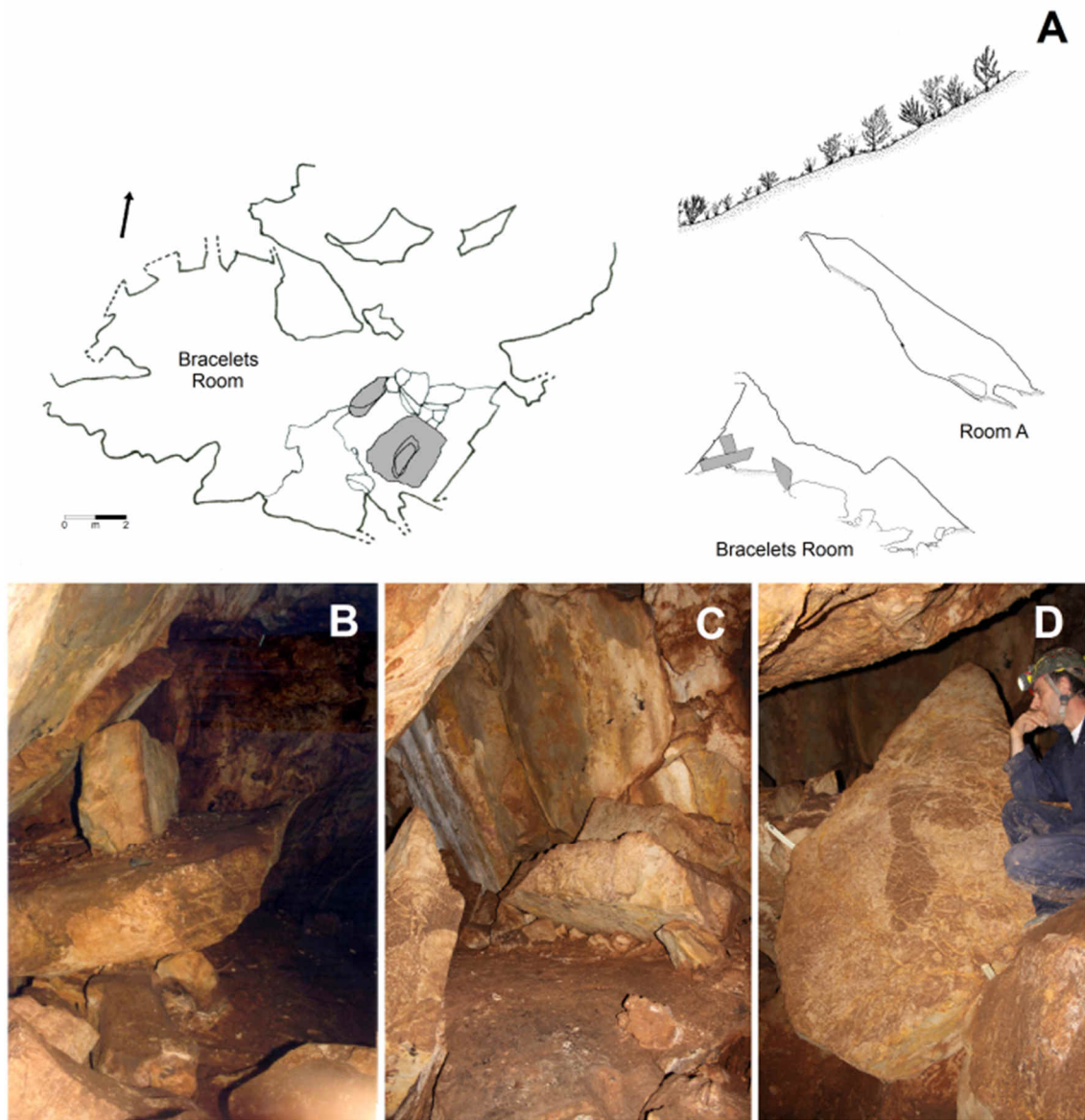
Figure 2 - A - Simplified plan of Bracelets Room (left) and topographic profile (right), with indication of the stele and megalithic construction (The Altar) in grey. B - The Altar seen from north. C - General view of from south, with top of stele (left), platform with crushed (and burnt?) human remains (centre) and The Altar (right). D - Anthropomorphic stele in frontal view.

3 - Strontium isotopes from human tooth enamel show a continuous 0.7103–0.7136 range. Five red deer and sheep/goat bone samples established a preliminary local baseline of 0.7105. If some inherent limitations are excluded from the reasoning — the lack of comprehensive regional "isoscapes", the use of bulk enamel samples analysed by TIMS, not by LA-MC-ICP-MS, etc. — , the obtained results indicate that most individuals (12 out of 15; 80%) are non-local, having spent their childhood in, or regularly visited areas with higher local $^{87}Sr/^{86}Sr$ values. Two out of the three sheep/goats also exhibit a non-local origin (0.7122 and 0.7134). The nearest regions with high local $^{87}Sr/^{86}Sr$ values are the granitic plains in the Alentejo, to the east, accessible through the Tagus estuary and its tributaries, namely the Sorraia (Fig. 1C). In the face of these results, a first interpretation of the Bom Santo isotope data favoured a model with a mobile farming population associated with itinerant pastoralism.

Reinforcing the above conclusions, provenance analyses carried out on grave goods suggest a broad cultural integration of the Bom Santo population (Carvalho 2014b; Carvalho *et al.* 2016):

1 - Pottery consists of undecorated vessels of simple geometric forms, repeating well-known typologies from Middle Neolithic burial-caves and dolmens. However, although locally made, vessels show rather distinct fabric recipes and testify technological variability that sharply contrasts with uniformity in morphology. In particular, the recipe of one vessel is typical of the Rio Maior area, 30 – 35 km north of the cave, suggesting an import.

2 - Polished stone axes and adzes are made of amphibolite, meta-volcanic and sedimentary or meta-sedimentary rocks. With the exception of the latter type of rocks, which are locally obtained, all others are exogenous: the closest sources of amphibolite are found along the western borders of the Hesperian Massif (90–100 km to the east) while meta-volcanic rocks can be found in the Lower Alentejo and at the Sado river mouth (respectively, 150 km and 80–90 km south).

3 - The knapped stone assemblage is formed by elongated products (blades and bladelets) and geometrics (trapeziums). Ongoing petrographic analyses (H. Matias, A.F. Carvalho, work in progress) indicate the presence of three main types of flint: one found in siliciclastic deposits of the Tagus Sedimentary Basin, thus a locally available resource; another of undetermined provenance but surely from more distant sources; and a third one, represented by a single blade (the largest in the entire assemblage), probably imported from the Milanos Formation in the Baetic System (Spanish Andalusia), around 400 km to the south-east.

4 - Bone awls from Bom Santo were obtained by splitting long bones longitudinally, whereas at other coeval sites—e.g., Escoural Cave, in the Alentejo region (Fig. 1C)— morphologically similar awls were obtained by thinning, not splitting into two equal halves. These examples from contiguous regions are testimony of different technical options aimed however at the same, culturally determined end-product.

5 - Personal ornaments are diversified but most raw materials (limestone, shell) could have been obtained between the Tagus estuary and the nearby Atlantic coastline. Only schist beads may have been brought to the cave from more distant sources. Wherever taphonomic environments allow their preservation, Middle Neolithic cemeteries in the Alentejo yield the same adornment types.

Overall, these observations suggest a scenario where distinct groups with their own technological options and geological constraints are incorporated in larger cultural or political units that share common stylistic behaviours (plain, spherical pots; thinly elongated awls; trapezoidal arrowheads; ornaments made of marine molluscs). However, the large and geologically heterogeneous geographical area where these phenomena are attested suggest variable strategies of acquisition and/or exchange of artefacts and raw materials and thus different scales of interaction with the environment and between human groups.

3. Intra-site spatial analysis and funerary practices

Gonçalves *et al.* (2016) performed a spatial analysis of selected human remains and grave goods from Bom Santo's Rooms A and B, an exercise that revealed recurrent distribution patterns.

Regarding the abundant human skeletal remains (7465 bones and bone fragments, and 2039 teeth), the purpose of the examination was to assess if the two rooms presented differential funerary practices (primary and/or secondary). As will be shown below, both primary and secondary depositions were present in Room B while only the latter were clearly present in Room A. This scenario raised a twofold hypothesis: that remains from both rooms could represent two different funerary practices, and that Room A could potentially be the final destination of

skeletons primarily deposited elsewhere. The latter issue will be focused in the conclusions section.

Indeed, in comparison with Room B, Room A presented better long bone completeness (Table 2) and much smaller absolute frequencies of bones with labile joints (such as phalanges from the hand and feet) although frequencies for long bones were similar for both rooms (Carvalho *et al.* 2012; Granja *et al.* 2014; Gonçalves *et al.* 2016). A minimum number of 36 individuals in Room B and 35 individuals in Room A has been estimated based on the repetition of lower right first molar so similar frequencies were expected if the same practice had been implemented in both rooms. However, the frequencies of hand distal phalanges (HPh) and foot distal phalanges (FPh) were quite different (Fig. 3), with a large number in Room B (HPh n=153; FPh n=81) and a very small number in Room A (HPh n=19; FPh n=25).

The above results reinforced the hypothesis proposing that the two rooms had been used for somewhat different practices. However, the matching of antimere bones or of contiguous bones from the same individual was successful only for intra-room human remains. No successfully matching involved bones located in different rooms. Therefore, no clear evidence favouring a direct association between the two rooms has been found. In short, the available evidence indicates the adoption of two different and separate funerary practices in Room A (where only secondary depositions are attested) and Room B (where both primary and secondary depositions were found), despite their contiguity.

Grave goods were also taken into consideration. The provenance of raw materials is indicative of mobility indexes or exchange networks. As seen in the previous section, some raw materials are geographically-specific, and their transport from one location to the cave site can be interpreted as the result of exchange and/or mobility. Therefore, they may be used to pinpoint the geographical origin of human groups or single individuals and to assess their interactions. However, the present study added another dimension: the grave goods spatial scattering patterns at the intra-site level of analysis. This was examined and used to explore their possible association with differentiated funerary practices.

Differences in grave goods between Rooms A and B were investigated by looking at the distribution of personal ornaments, pottery and polished and knapped stone tools in each excavation square (Fig. 4). This analysis showed an uneven distribution, with the large majority of the ornaments, flint blades and potsherds being found in Room A. Ornaments, in particular, showed a notable concentration in B4 and immediate squares, allowing their interpretation as elements of maybe a few composite necklaces made with materials from different sources (shell and schist beads). The exceptions were the polished stone tools, which were evenly scattered in both rooms and thus testify different behaviour. However, these distribution patterns of raw materials are always independent of their specific geographical area of acquisition, thus showing that there is no latent spatial segregation according to provenance (Fig. 4).

4. Discussion: the "fragmentation thesis" at Bom Santo

The present approach to the "fragmentation thesis" (Chapman, Gaydarska 2007) at the burial-cave of Bom Santo relies on a couple of assumptions: first, that Rooms A and B yielded well-preserved funerary deposits that constitute reliable material testimony of the funerary and ritual behaviours that took place there, as evidenced among other features by the intentional closure of the cave in Neolithic times or the preservation of human footprints in Room C; and second, that the evidence still contained in the meagre sedimentary deposit that remain unexcavated in Room A will not distort the general patterns in the spatial distribution of grave goods and human remains. With the above assumptions in mind, a preliminary interpretation of the observed funerary practices can be summarized as follows:

Room A—or a major section of it — must have been exclusive for secondary depositions of human remains (i.e., segmented skeletons) associated with all types of grave goods.

Room B shows evidence for both primary (i.e., intact skeletons) and secondary depositions associated only with sheep/goat phalanges and polished stone tools.
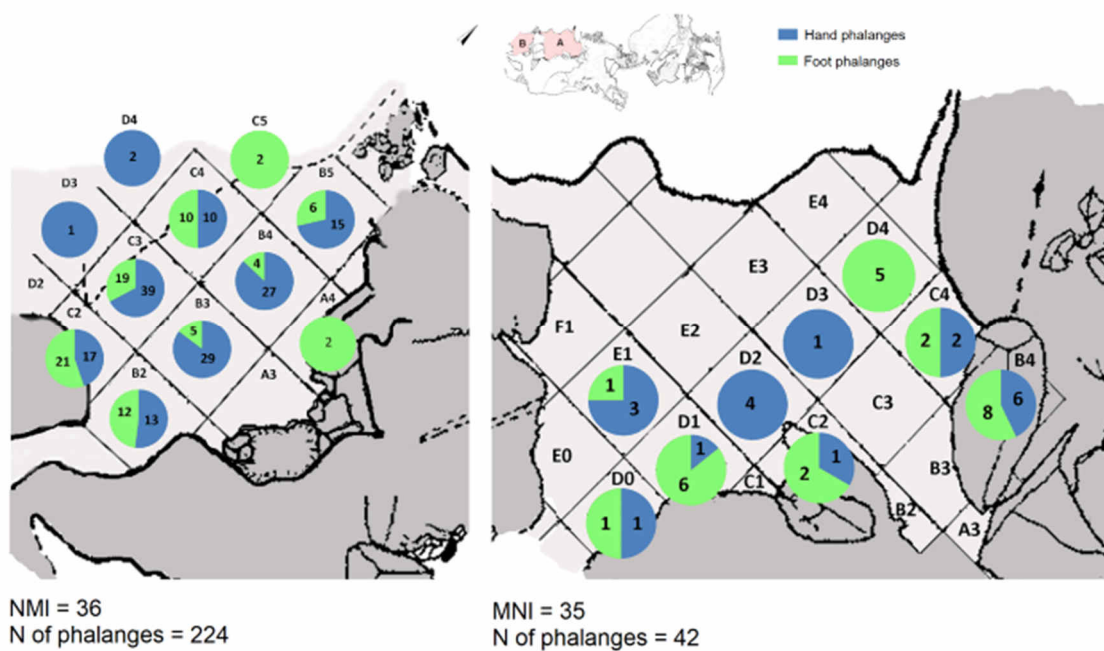
Figure 3 - Frequency and dispersion of human hand and foot distal phalanges in Rooms A and B of the Bom Santo Cave.
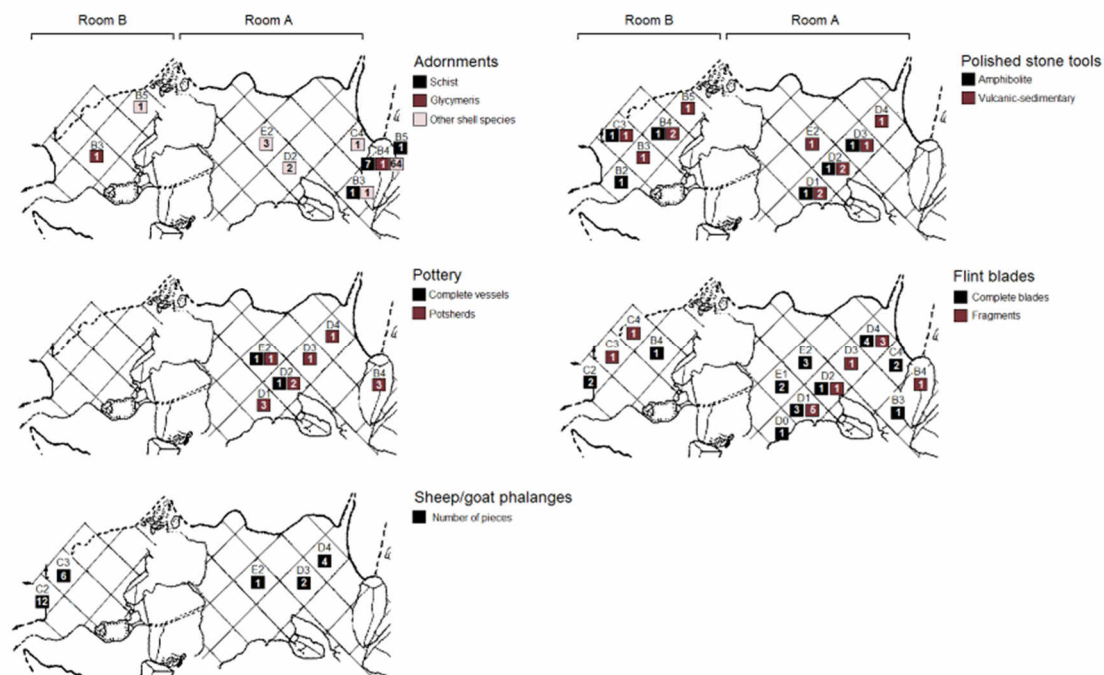

Figure 4 - Spatial patterning of main grave good types in Rooms A and B of the Bom Santo Cave.

Based on the above interpretations, Room A implied the segmentation—more likely than actual bone fragmentation (Gonçalves *et al.* 2016; Granja *et al.* 2014)—of skeletons previously deposited elsewhere, and apparently left to decompose naturally, since no marks of intentional de-fleshing were identified. The transportation of human bones to this room would take place subsequently. It is possible that some of the remains present in this Room corresponded to disturbed primary depositions which would mean that not all remains have been transported from elsewhere. However, given the current evidence, potential primary depositions could hardly explain the entire assemblage. If primary depositions indeed occurred, these appear to have represented a very small part of it. Interestingly, Room A is the only funerary space where personal ornaments and pottery were also found (Fig. 4), which means that the former grave goods are intrinsically associated with practices of secondary handling of human remains.

Even more interesting is perhaps the fact that pottery may have been intentionally fragmented at some point in this sequence of decomposition-exhumation-transportation-redeposition of human remains. In fact, pottery was found in very small quantities — two complete vessels, two rimsherds (one decorated) and 11 loose sherds — but its scarcity is in good accord with evidence from other Middle Neolithic cemeteries, a fact that ultimately has to be considered a cultural option. However, at Bom Santo these sherds also testify the presence of independent, incomplete vessels that could not be refitted. If the above assumptions are considered, it can only mean that pots were fragmented elsewhere and some potsherds incorporated into the funerary deposit only subsequently, behaviour akin to that of the treatment of the human skeletons.

Systematic breakage was also observed in the flint material. Refitting exercises permitted only two blades — one from each room — to be reconstituted. The total number obtained of 37 individual pieces present the following fracture patterns: intact pieces: n=20 (54%), proximal: n=7 (19%), mesial: n=5 (13.5%), and distal fragments: n=5 (13.5%). As in the case of the pottery, this high fragmentation index and the lack of the missing parts strongly suggests in the majority of these cases that this is not the effect of trampling or sediment compression only, but rather also of intentional behaviour.

Apart from 20 bone tools (mainly awls), the large and medium-sized mammal remains from Bom Santo are mostly phalanges of sheep/goat. At the time of the excavations, this was a surprising find. A first interpretation was that phalanges may have been attached to skins that were left as funerary offerings or used as shrouds to wrap the dead. However, the recent publication of the Sobreira de Cima, Outeiro Alto 2 and Quinta da Abóbada hypogea also noted a very explicit *in situ* association between sheep/goat and human phalanges in Middle Neolithic funerary contexts in the Alentejo (e.g., Valera, Costa 2013). In the case of Bom Santo, these were found comingled with the human remains but clearly in very restricted locations — particularly square C3 in Room B, where 18 sheep/goat phalanges were found in close association (Fig. 4) —, thus suggesting an original deposition in anatomical connection (along with the identified primary depositions of human skeletons?). Overall, the formal and ritual resemblance with the above hypogea is even more striking.

5. Conclusions

Spatial distribution of grave goods at Bom Santo revealed some rather unexpected patterns indicative of rather complex funerary practices (Gonçalves *et al.* 2016) and of the different roles likely played by accompanying grave goods. Indeed, some items seem to be specific to secondary funerary contexts (flint blades, pottery and ornaments in Room A), others to primary practices (sheep/goat phalanges in square C3 of Room B), while others do not seem to be correlative of any particular type of practice (polished stone tools). Also, flint blades, pottery vessels and human skeletons were frequently (but not constantly) segmented at some point in these practices. This is eloquently attested in Room A. As with the relation between human and sheep/goat phalanges, the parallel between segmentation of skeletons and fragmentation of vessels suggests the existence of some sort of homology between humans and pots in the ideology underlying these funerary rituals. Although less clearly attested, intentional fragmentation of flint blades may also

be associated with this principle. On the other hand, the ubiquity of polished stone tools within Rooms A and B remains to be given a more intelligible meaning. It should be mentioned, however, that polished axes and adzes must have been imbued of a special significance in the Neolithic given a twofold phenomenon: their omnipresence in burial-caves and dolmens throughout the country — namely in the neighbouring Alentejo (e.g., Gonçalves 1992) — and their explicit depiction in dolmens and menhirs.

One important question remains to be explicitly addressed: where did initial burials take place prior to the incorporation of the bone remains in Room A? Given the unlikelihood of adjacent Room B (Gonçalves *et al.* 2016; see above), two non-mutually exclusive possibilities can be put forward: from other (unexcavated) sectors of the burial-cave and/or from built cemeteries elsewhere (Fig. 1C). The first possibility can only be assessed in future excavations but the socio-economic structure and ideology of Middle Neolithic (i.e., megalithic) populations that are now being unfolded in Portugal, mainly at Bom Santo, provide sound guidelines to explore the latter possibility.

To start with, the attested long-distance import of grave goods is a crucial observation that allowed three successive geographical belts of provenance — "local", "intermediate", "remote" — to be drawn (Carvalho 2014b: fig. 6.1; see Fig. 1C). Within these belts, which display disparate geological and orographic features, variable levels of strategies of acquisition and/or exchange of artefacts and raw materials were used, resulting in different scales of interaction with the environment and between human communities. Integration of the available isotopic evidence on human diets and mobility permitted the building of an interpretative model in which the Bom Santo population directly exploited a territory comprising the Montejunto range, the Tagus palaeoestuary, and the plains of neighbouring Alentejo, including the westernmost fringes of the granitic and schistose formations of the megalithic Mora-Pavia area (Fig. 1D) — in short, the "local" and "intermediate" geographical belts. The proposed overall interpretative model foresees "[...] a cemetery used by coeval human groups with complex funerary practices but sharing a similar material culture and belonging to a common political entity, most likely a 'segmentary society' occupying a large territory with practices of exogamy predominating [as suggested by the mitochondrial DNA variability]" (Carvalho *et al.* 2016: 21).

However, this is a purely socio-economic model. The above evidence for complex sequences of funerary practices (involving intentional, systematic segmentation of human skeletons and their transportation), along with the finding of typically "megalithic structures" (see above), are observations that shed new light on the Bom Santo burial-cave at two main scales of analysis (Carvalho 2016): first, at the level of the funerary practices, rituals and cults that might have taken place inside the cave (as particularly evidenced in Bracelets Room; Fig. 2) — i.e., the mountain acting as a dolmen chamber; and second, at the understanding of the role played by Montejunto itself in the surrounding landscape (Fig. 1A – B) — i.e., the mountain acting as a mound.

In this new context, the deduction that Room A was most probably used for secondary depositions only, with human remains being introduced from outside the cave, suggests that it must have been a small part of much wider, more complex funerary behaviour in the framework of which a chain of practices — primary depositions (with de-fleshing), exhumation, transportation and secondary deposition (of segments of skeletons) — would take place in distinct cemeteries across the landscape. Coeval burial-caves and dolmens in Estremadura and dolmens and small graves in the nearest sectors of Alentejo — in particular, along the Sorraia river valley and the adjacent Mora-Pavia plains (Fig. 1C–D) — are thus likely to have been involved in these broader dynamics of spatially and conceptually segmented funerary practices. The above-defined socio-economic territory of the Bom Santo population must have been also a stage for the structured funerary and ritual practices.

If confirmed by future research, observations made possible at Bom Santo due to its more favourable preservation conditions may be extrapolated to those other cemeteries where similar direct evidence cannot be obtained. In particular, this would be the case, not only of the intentional segmentation of skeletons, but also of the ritual use of sheep/goat phalanges (associated with primary depositions) and pottery vessels or potsherds (associated with secondary depositions) as homologs for humans. Thus, the presence of "non-local" sheep/goat remains does not have to be

necessarily evidence for itinerant pastoralism, as was tentatively (but not exclusively) put forward before (Carvalho *et al.* 2016). Systematic provenance studies of abiotic raw materials (e.g., flint) from coeval Mora-Pavia dolmens and open-air habitation sites will be crucial to assess this model.

The onset of megalithism, at least in the mentioned territories, seems to have been characterized by complex funerary behaviours in which intentional segmentation of corpses and particular objects may be the material manifestation of a segmented frame of beliefs — and maybe also of a segmented worldview.

Acknowledgments

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Table 1. Bom Santo Cave: Biological profile, mtDNA haplotypes and haplogroups, isotopes and radiocarbon dating of the buried population (a).

Burial	Room	Sex	Age	Haplotypes	Haplo-groups	Strontium isotopes	Marine proteins	Aquatic proteins	^{14}C (cal BC)
#01	B	M?	A	16270T, 16296T	U5b	0.710265: Local	3%	7%	3455 ± 55
#02	B	M	A	16126C, 16294T, 16304C	T2b	0.711009: Non-Local	6%	6%	3415 ± 110
#03	B	F?	A	-	-	0.711296: Non-Local	9%	33%	3725 ± 40
#04	B	M	A	16126C, 16332T	J	0.712836: Non-Local	11%	39%	3675 ± 25
#05	B	M	A	-	-	0.710503: Local	10%	23%	3705 ± 35
#06	B	M?	A	16195C, 16298C	HV0	0.712517: Non-Local	5%	19%	3540 ± 75
#07	B	M	A	16221T	H10e	0.713594: Non-Local	4%	31%	3735 ± 45
#08	B	I	A?	-	-	0.711508: Non-Local	5%	26%	3520 ± 85
#09	B	I	J	(16189C), 16224C, 16311C	K1a2a1	0.710619: Local	8%	18%	3565 ± 55
#10	B	M	A	16126C, 16196A, 16259T	J	0.711235: Non-Local	10%	6%	3580 ± 45
#11	A	M	A	-	-	0.711783: Non-Local	12%	16%	3540 ± 75
#12	B	F?	A	16239T, 16292T	H1	0.711702: Non-Local	2%	24%	3555 ± 65
#13	A	F	A?	-	-	0.712348: Non-Local	4%	29%	3530 ± 80
#14	B	I	A	16221T, 16256T, 16270T	U5a1	0.712266: Non-Local	6%	42%	3780 ± 65
#15, Hunter	-	M?	A	not analysed	not analysed	0.714641: Non-Local (b)	8%	25%	3735 ± 45

(a) After Carvalho *et al.* 2016: tables 3 and 4, updated. Sex: M - male; F - female; I - indeterminate. Age: A - adult; J - juvenile.
(b) Unpublished result.

Table 2. Completeness of each skeletal element according to Room A and Room B (a).

Element	Room A				Room B				Total			
	n	$\overline{x}$	Md	SD	n	$\overline{x}$	Md	SD	n	$\overline{x}$	Md	SD
Cranium	585	3.89	4.00	0.52	828	3.89	4.00	0.53	1413	3.89	4.00	0.53
Mandible	40	3.38	4.00	0.93	70	3.16	4.00	1.14	110	3.24	4.00	1.07
Teeth	677	1.51	1.00	0.82	749	1.27	1.00	0.58	1426	1.38**	1.00	0.71
Vertebral column	290	2.82	3.00	1.17	623	2.90	3.00	1.14	913	2.87	3.00	1.15
Ribs	202	3.35	4.00	1.05	341	3.38	4.00	0.98	543	3.37	4.00	1.00
Sternum	11	3.45	4.00	0.93	35	3.29	4.00	0.99	46	3.33	4.00	0.97
Clavicle	38	1.95	1.00	1.18	51	2.47	3.00	1.24	89	2.25*	2.00	1.24
Scapula	30	3.87	4.00	0.35	67	3.70	4.00	0.70	97	3.75	4.00	0.61
Humerus	61	2.34	2.00	1.17	57	3.02	4.00	1.17	118	2.67**	2.50	1.21
Radius	42	1.95	1.00	1.23	76	3.00	4.00	1.21	118	2.63**	3.00	1.31
Ulna	38	1.79	2.00	0.81	65	2.74	3.00	1.18	103	2.39**	2.00	1.15
Hand	229	1.57	1.00	0.90	923	1.38	1.00	0.80	1152	1.42**	1.00	0.83
Hip bone	56	3.68	4.00	0.51	89	3.58	4.00	0.77	145	3.62	4.00	0.68
Femur	75	2.32	2.00	1.14	109	3.17	4.00	1.16	184	2.82**	3.00	1.22
Patella	26	1.31	1.00	0.83	32	1.16	1.00	0.45	58	1.22	1.00	0.65
Tibia	77	2.18	2.00	1.14	96	3.02	4.00	1.20	173	2.65**	2.00	1.24
Fibula	44	2.09	2.00	1.03	67	3.13	4.00	1.15	111	2.72**	3.00	1.22
Foot	316	1.54	1.00	0.90	825	1.61	1.00	1.04	1141	1.59	1.00	1.00
Total	2837	2.45	2.00	1.32	5103	2.39	2.00	1.35	7940	2.42*	2.00	1.34

(a) After Gonçalves *et al.* 2016: table 1. n = amount of fragments; $\overline{x}$ = mean; Md = median; SD = standard deviation. Statistically significant mean differences between both rooms: *p < .05; **p < .01. Mann-Whitney statistics was used. Carpal and tarsal bones are included in the hand and foot categories, respectively.

CHAPTER 5

FRAGMENTATION AND ARCHITECTURE. CONTRIBUTION TO THE DEBATE ON THE "FILL" OF NEGATIVE STRUCTURES IN BAIXO ALENTEJO'S LATE PREHISTORY.

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Abstract

This paper discusses the fill of negative structures in Baixo Alentejo's late prehistory. These fills tended to be classified as burial, storage and rubbish contexts, associating the use of the structures to well-define social scenarios. Although this approach has let us understand the plurality of uses under which the structures were constructed, used and abandoned, it has overshadowed the ambiguity of some of the contexts. Regarding this, the remarkable presence of deposition contexts should be noted, as also should be noted that several depositions are made with fragments and parts of objects. Social fragmentation practices are a strategy to reconfigure the social arena, so the emphasis on fragments and fragmentation processes may then help us to redesign our view on this architecture tradition. Considering this, we focus on how fragments participate in the infill of the structures and how they might be a clue revealing temporal and spatial unities which, initially, were unimaginable. We show how fragments can be used to: define filling deposits of structures; revise filling sequences; and establish links between different structures. We present two examples from different sites to illustrate our reasoning. The examples demonstrate how the study of fragmentation may take us to see temporal and spatial dynamics different from those suggested by the classification of the fills as burial, storage and rubbish contexts. Following the links of the fragments may not help us to construct well-defined social scenarios, however those links do enable us to appreciate the strangeness of past communities' temporal and spatial dynamics.

Keywords: Late prehistory; Baixo Alentejo; Negative architecture; Fragmentation; Temporal and spatial dynamics

1. Introduction

Recently, "a late prehistoric world in negative" (Valera *et al*. 2014) has been discovered in Baixo Alentejo as a result of several infrastructure projects. This "world" is composed of different negative structures (pits and hypogea, for example) which are distributed in clusters along small hills. In interpreting the social dimension of these sites, the analysis has tended to order the structures by defining their function according to the nature of their fills' (e.g. Alves *et al*. 2014a; 2014b; Antunes *et al*. 2012; Santos *et al*. 2009). In doing so, studies are oriented towards the recognition of burial, storage and rubbish contexts. The focus on these "well-defined" archaeological contexts enables the structures to be linked to specific ritual and domestic dynamics, showing how this architectural tradition was a stage within different social scenarios. Although this approach has let us understand the plurality of uses under which the structures were constructed, used and abandoned, it has overshadowed the ambiguity of some of the contexts. Regarding this, the remarkable presence of deposition contexts should be noted (e.g. Valera *et al*. 2014; Baptista & Gomes 2013; Gomes & Baptista 2017) suggesting different social dynamics to the ones above-mentioned. Additionally, it should also be emphasized that several of those depositions are made with fragments or parts of objects connecting these structures to the practices of fragmentation in prehistory (e.g. Chapman 2000; Chapman & Gaydarska 2007). These contexts, by bringing together elements from different social dynamics, remind us that by insisting on ordering the depositions according to a function of the structure we may lose some aspects of its variability and social dimension; and the complexity under which its fills were produced.

The study of fragmentation entails an analysis of the life cycle of things, contributing to discussions of how deliberate fragmentation participates in the recreation of the social conditions of humans and non-humans (see Chapman *ibid*.; Chapman & Gaydarska *ibid*.). Fragmenting and distributing things are practices participating in and shaping the intra and inter-communities' dynamics. The circulation of a fragment, as the circulation of any other social agent, contributes to the maintenance and transformation of social order (*ibid*.; *ibid*.; and also, Appadurai 1988). A fragment evokes time and space creating a tension which may reconfigure the imagery of the social arena; it activates memory (e.g. Bradley 2003a; Connerton 1989; Lillios 2003; Meskel 2003) and changes the limits and possibilities for action (Barrett 1994a, 1994b). The fragments in the negative structures we are presenting in this paper may be the evidences of social dynamics that would be overshadowed by an enquiry more oriented towards the identification of domestic or ritual activities. The focus on the fragments allows us to envision a different rationality to such a "well-defined dichotomy" (e.g. Bradley 2003b, 2005; Bruck 2001). Given the potential of a fragment to reconfigure the social arena, the emphasis on fragments and fragmentation processes may then help us to redesign our view on this architecture tradition.

In order to contribute to the understanding of Baixo Alentejo's "world in negative" during late prehistory, this paper discusses how the study of fragments of artefacts and human bones can contribute to a discussion of the temporal and spatial dynamics of the infill processes of structures. By focusing on the results of 129 archaeological interventions developed by the team of Arqueologia e Património Lda. (Figures 1 and 2) in EDIA, S.A. infrastructure projects (*e.g.* Baptista 2010, 2013; Baptista & Gomes 2013; Gomes & Baptista 2017), we selected six contexts which show how the study of fragmentation reveals that the structure fills activate different temporal and spatial unities which, initially, were unimaginable. During the excavation, our concern was to translate the infilling of the structures into a linear temporal sequence (the Harris Matrix), privileging the individualization of fills and their stratigraphic relationships. Although these linear sequences were important in managing the digging and recording processes, and for understanding the infilling of the structures, they are just one perspective on the complex temporalities under which these infilling/construction practices took place. In paying attention to fragments (i.e., how the fragments were produced and how they were integrated within the fills), our goal is to add other temporal dynamics to the infilling of the structures. In so doing, we aim to contribute to grasping the temporal and spatial complexity of this architectural tradition.

The selected contexts come from four sites: Vale de Éguas 3, Monte Marquês 15, Horta do Jacinto and Montinhos 6. The archaeological intervention in Montinhos 6 was initiated by the

construction of a reservoir allowing the investigation of two small hills, in which were identified more than two hundred structures distributed in several groups. In Monte do Marquês 15, a pipeline project crossed a small hill revealing a cluster of almost thirty structures in its crown.
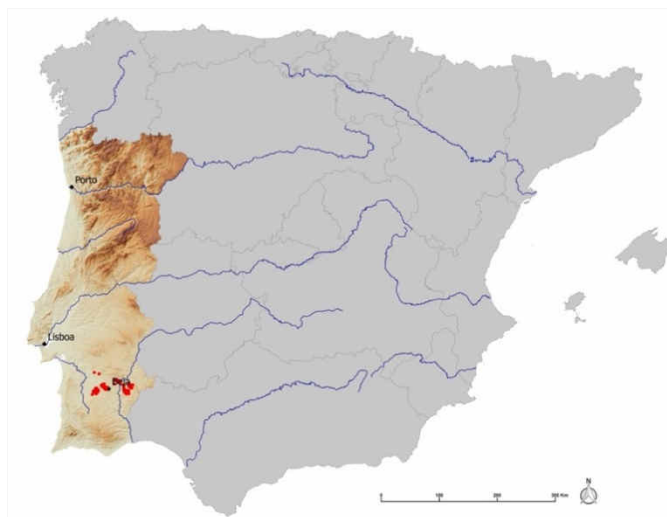

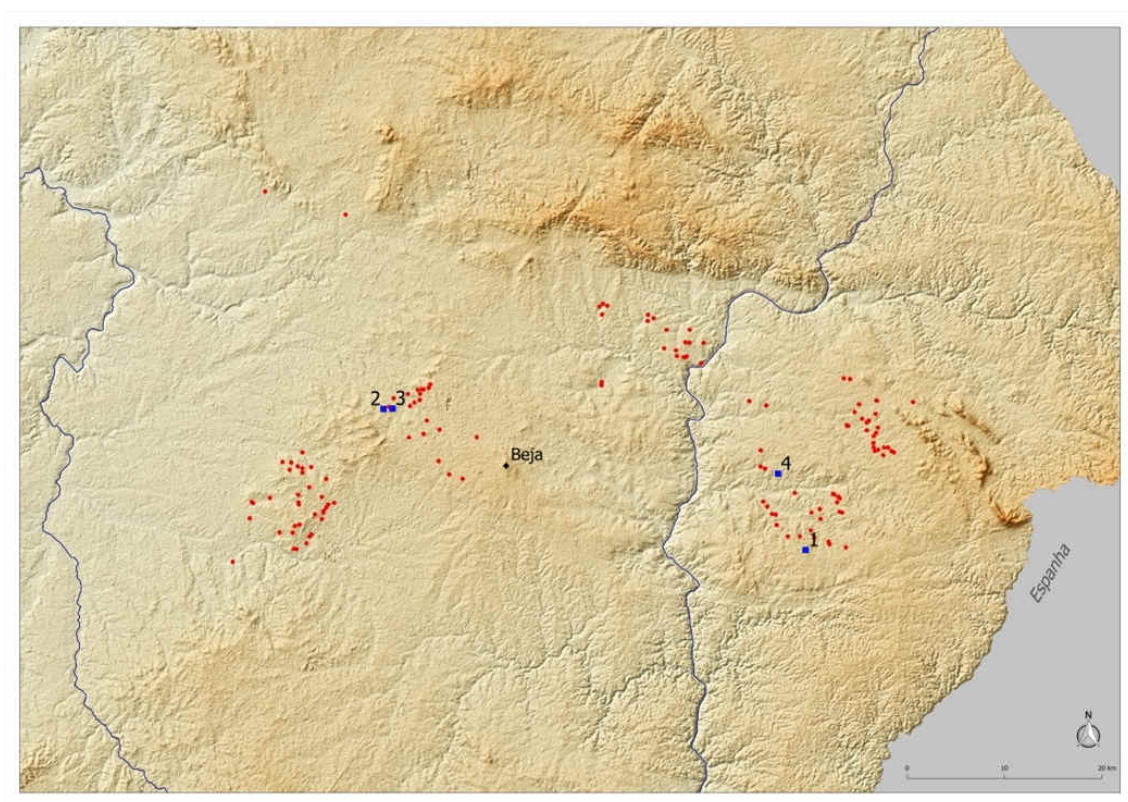Figure 1 – Location of the sites on the Iberian Peninsula.

Figure 2 - Location of the 129 sites with negative architecture excavated by Arqueologia & Património Lda. The blue squares correspond to the sites presented in the text: 1 – Vale de Éguas 3; 2 – Monte do Marquês 15; 3 – Horta de Jacinto; 4 – Montinhos 6.

The six structures at Vale de Éguas 3 were also identified during a pipeline project. In the case of Horta do Jacinto, the pipeline allowed the identification of two structures (distancing around 500 m apart). From a stratigraphic point of view, it should be noted that the structures at these sites were identified in the top of the geological substratum ("caliço", an easily cut type of limestone), after removing the upper deposits which had been disturbed by agricultural activities. Consequently, the stratigraphy articulating the relationship between the different structures is generally absent. In contrast, the interior of the structures presented various sequences of infilling, corresponding either to a single deposit, without an artefactual component, or to a sequence of overlapping sediment deposits, stone levels, with associated concentrations of artefacts, ecofacts and human and animal burials (Baptista & Gomes 2013; Gomes & Baptista 2017; see also Alves *et al*. 2014a; 2014b; Antunes *et al*. 2012; Porfírio & Serra 2016; Valera *et al.* 2014; Valera 2016; Santos *et al.* 2009 for similar sites).

The study of fragmentation we have been developing with these sites interconnects different moments of the archaeological process. We are trying to establish a dialogue between the analytical methods adopted during excavation and post-excavation, namely the study of artefactual components and revision of the stratigraphy. Our theoretical-methodological framework integrates the excavation and recording methods proposed by Harris (1991) and Barker (1977), Schiffer's thoughts on the processes forming the archaeological record (Schiffer 1972; 1975; 1976; 1987), and Lucas' reflections on the nature of the archaeological object of study (Lucas 2001; 2005; 2012). The work carried out by Thomas (1999: 62-88), Chapman (2000), Garrow (2012; Garrow *et al.* 2005), Chapman & Gaydarska (2007), and McFadyen (2006; 2016) are especially relevant in analysing and interpreting fragmentation processes. Within this conceptual framework, studying fragmentation becomes a heuristic and hermeneutic task seeking to expand the temporal and spatial relationships between the different elements of the archaeological record. We will show how the focus on fragments can be used to: define filling deposits of structures; revise filling sequences; and establish links between different structures. We will present two examples (two structures) from different sites to illustrate our reasoning. The examples will demonstrate how the study of fragmentation may bring us closer to temporal and spatial dynamics which would otherwise go unnoticed. In fact, the attention paid to fragments and their respective reassembly allowed us to understand the spatial and temporal limits of the units that form these structures and, thus, helped us characterise this architectural tradition of Baixo Alentejo's late prehistory.

2. Fragments and breakage processes as a strategy to rethink the structures' filling deposits

2.1. Structure 2 - Vale de Éguas 3

Vale de Éguas 3 presents a cluster of six pits: structures 1, 3, 4, 5 and 6 had one or two fill deposits (Figure 3); structure 2 had five fill deposits and a deposition level containing a piece of ceramic plate (Baptista & Gomes 2012). The infill of structure 2 (Figure 4) is worthy of detailed consideration, in addition to the deposition context, the ceramic fragments within the lower fills invokes a specific fragmentation and distribution process which adds temporal and spatial depth to the stratigraphic sequence initially observed. The top of the fill was a clayey deposit, with the inclusion of small stones in the upper part [200]. Below this deposit, there was a similar one, but of a lighter shade [201]. A mid-level was defined during the excavation, due to the presence of part of a reinforced-rimmed plate which can be traced to the regional Chalcolithic. This vessel appeared to be positioned in a horizontal plane. Besides this larger fragment, five small fragments of pottery were also collected in this deposit, three of which corresponded together. The three-remaining fill deposits [202, 203, 204], were of clayey nature and distinctive colour, and contained assemblages of apparently randomly dispersed sherds. During the excavation of these three deposits, some of the fragments appeared to be similar and, later on, we confirmed that this assemblage corresponded to a single globular vessel. We also observed that the fragments of the

base and body tended to be located within the first two deposits and the rim fragments within the last of the fills.

Looking closer at the fragmented character of this structure's ceramic components, we have identified three different things:

- A part (almost half) of a reinforced-rimmed plate (deposited in the top of [201]);
- An assemblage of fragments - of different sizes, freshly fractured and without abraded surfaces - from a globular vessel (distributed in the deposits [202, 203 and 204], and;
- A set of small sized unabraded fragments that did not match either of the above vessels (dispersed in [201]).

Figure 3 – Vale de Éguas 3, general view of the cluster.
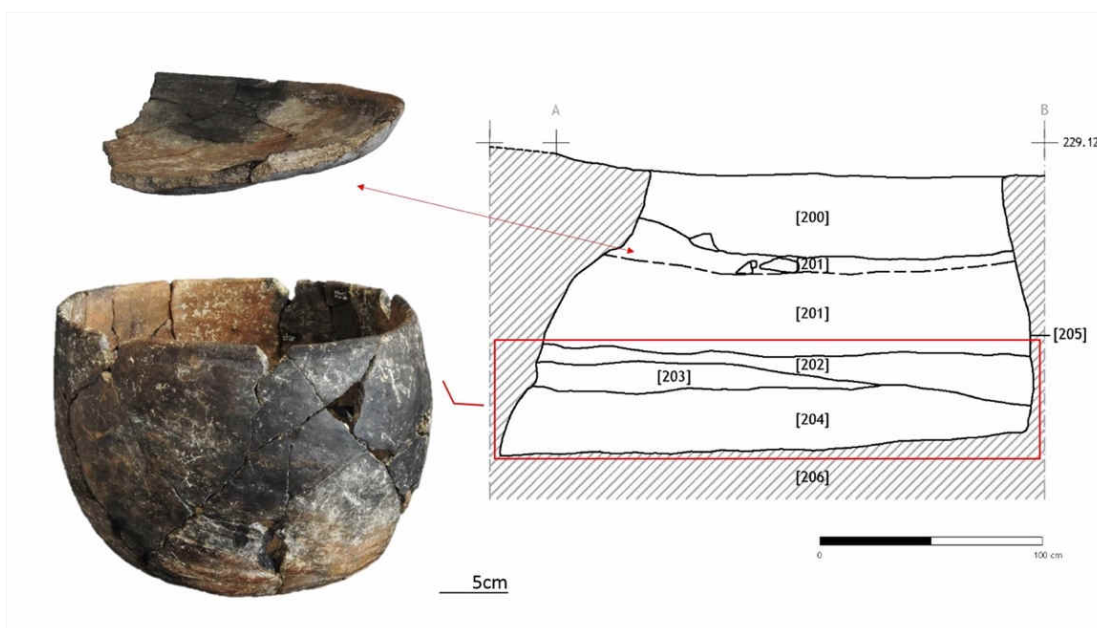
Figure 4 – Vale de Éguas 3, structure 2: stratigraphy and pottery.

These two vessels, and the way they were distributed across the different fills, forced us to rethink the characterisation of the different deposits, as well as the dynamics of this structure's infilling:

- The top part of the fill was polarised around the deposition of a reinforced-rimmed plate fragment. The plate seems to have participated in a fragmentation practice which turns a previous entity into, at least, two different agents, one of which ended up deposited in this structure. The other parts of the plate are absent from this structure. Once the plate was broken the different parts were not gathered together as had happened with the globular vessel from the lower deposits.
- This part of the fill also presented a set of small fragments that did not match either the plate or the globular vessel. These small fragments may represent residues of the fragmentation processes of these two objects or be part of a different vessel. In both scenarios, we may see these small fragments as residues of fragmentation and distribution practices which could have occurred prior to deposition and away from the pit.
- The bottom part of the fill presented three deposits, which were individualised due to colour divergences, but contained fragments of the same vessel. Despite the suggestion of different actions of infilling, we were able to identify a unity between these deposits through the presence of the vessel which, at some point, was fragmented. It is hard to imagine the practices in which such a sequence was produced; the fragmentation of the vessel occurred at a different time and place, prior to deposition and outside the boundaries of the structure, however in the moment of its deposition, the structure acted as a place to gather all the pottery fragments.

By paying attention to the fragmentation of the ceramics in this structure we may create an opposition between the top and the bottom deposits. The lower fills were about gathering all the fragments of a previous entity; each deposit is about a part of the vessel but the three deposits reconstruct its unity. The lower infills of the structure are a story of how a unity may be fragmented, distributed and then reunited in the same structure. Each deposit may be related to a different moment, and to a different practice, however they all relate to this previous unity that was fragmented. The upper fills are about the deposition of a part of a plate. The structure acted as a stage to receive such a part and store it as such. The upper and lower fills entailed different ways of fragmenting and distributing objects. Emphasizing fragmentation in this context made us rethink the individualisation of the structure's infilling, and expand the possibilities of characterising and interconnecting them. To the initial linearity that we recorded by individualizing the fills, we may add two cycles of infill: a first one connected to the globular vessel and a second one relating to the plate. The study of fragmentation allowed us to redefine delimitations and relationships between the different fill deposits and go beyond the temporal linearity and homogeneity with which we excavate and characterise the deposits. Furthermore, it enabled us to explore the temporal dynamics of the deposits, which appeared to be connected with the distribution of fragments and fragmentation practices of two ceramic vessels.

2.2. Structure 22 - Monte Marquês 15

The archaeological intervention in Monte Marquês 15 has identified a set of almost thirty structures, with an artefactual component dating back, in most cases, to the regional Chalcolithic (Baptista 2010; Vale *et al*. 2013). The filling of structure 22 was highly complex, consisting of levels of clayey deposits, levels of "caliço" fragments, concentrations of pottery fragments and remains of animal bone, and stone features (such as a ring of stones or a small sub-circular structure). Overall, the diversity and complexity of the elements comprising the infilling of this structure indicates a profuse horizontal and vertical compartmentalisation (Figure 5 and 6).

In order to summarise, we will not describe the entire sequence, and we will focus our analysis on the deposits at the structure's base (Figures 7 and 8), which contained a concentration of 499 fragments of pottery [2221], plus 80 more fragments in the deposit [2219] immediately above. The reassembly of these fragments resulted in a set of six vessels, five of which are

incomplete, and one complete vessel. Besides this set of vessels, we found 88 fragments with no correspondence; they could be part of the six vessels even if we couldn't refit it or they could belong to other vessels. It should be noted that, although there was no combustion evidence in the deposit surrounding them, some of these pieces were burnt. Furthermore, there were correspondences between burnt and unburnt fragments. The fragments showed signs of burning either on the surface or the edges, indicating that, despite belonging to the same unit, they were handled in different contexts after fragmentation.
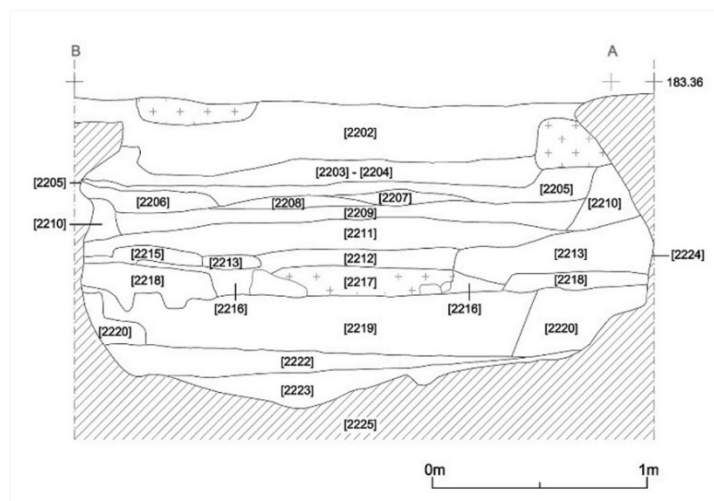
Figure 5 – Monte Marquês 15, structure 22: stratigraphy.

Figure 6 – Monte Marquês 15, structure 22: sequence of the main fills in the structure.

Figure 7 – Monte Marquês 15, structure 22: fills of the structure's base.

Figure 8 – Monte Marquês 15, structure 22: pottery from the fills of the structure's base.

Studying this assemblage of fragments has revealed that the filling unit pertaining to this excavation contained, at least, six vessels (Figure 8) indiscriminately deposited on the same level and already fragmented before their deposition. As mentioned above, since the burnt fragments matched with unburnt ones, these vessels may have had different treatments after their fragmentation and prior to deposition. In this connection, fragmentation makes us aware that the deposition of these ceramic fragments may be associated with their different uses. This possibility enables us to consider an intertwining of scenarios that exceeds the limits of this archaeological structure and whose configuration escapes our grasp. However, it should be noted that the structure acted as a way to gather different fragments from different entities in the same fragmented deposit. It could be argued, the structure acted as the catalyst for the emergence of a new entity; an entity made through the fragments of other entities.

It should be noted that in the structure of Vale de Éguas 3, the analysis of fragmentation revealed a single unit between three distinct deposits at the base of the structure, where fragments of the same vessel were distributed. In the case of Monte Marquês 15, the fragmentation revealed that the same unit – identified in the course of the excavation – contained different ceramic vessels, whose fragments may have participated in other scenarios. In other words, fragmentation has allowed us to restructure and rethink the way we work and how we question the set of practices within this architectural tradition. The infill practices, by intertwining with fragmentation and deposition practices, allowed the expansion of the entities created by the fragmentation. Structure 2 of Vale de Éguas 3 holds an entity in fragments in the lower deposits and a part of an entity in the top; structure 22 of Monte do Marquês 15 holds an entity made through the gathering of fragments of six different pots. These entities were created as a result of the fragmentation, deposition and architectural practices. Therefore, the delimitation and relationship of the fills should take into account how fragments create the possibility of exceeding the limits we construct to define a unity and relate it to other fills.

3. Fragmentation as a strategy to understand a structure's infilling sequence

3.1. Structure 1 - Horta de Jacinto

In Horta de Jacinto two structures were identified, containing an artefactual component that can be traced to the regional Bronze Age (Baptista *et al.* 2012). The filling of structure 1 presented two burial levels (Figure 9):

- at the base of the structure, demarcated by a ring of stones, there was a skeleton of a swine[1];
- in the upper levels there was a human sub-adult, deposited in a sitting position.

These burial levels form part of a stratigraphic sequence with several stratigraphic units, which can be systematised in five phases (Figure 10):

- Phase I ([113], [114], [115], [116] and [117]): corresponds to a group of stratigraphic units associated with a stone level located at the base of the structure. Its selection is based on the stony nature of the elements in this context. The presence of this material becomes especially relevant when we reach phase V;
- Phase II ([109], [110], [111] and [112]) corresponds to the group of units associated with the burial of the swine;
- Phase III ([108]): corresponds to a "caliço" deposit sealing the swine burial context and, simultaneously, serving as the construction material of the concavity where the subadult was buried;
- Phase IV ([104], [105], [106] and [107]): corresponds to the group of units associated with the deposition of the sub-adult;
- Phase V ([101], [102] and [103]): corresponds to the closing of the structure's fill. It consists of a stone level and a set of clay deposits incorporating fragments of pottery and lithics.

During the study of the artefact assemblage, we registered the exclusive presence of unabraded, medium sized ceramic fragments. Some of these fragments refitted, however, these correspondences appeared to be the result of post-depositional events, since the matching fragments were close to each other, suggesting fragmentation occurred after the breakage of the

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[1] The morphological similarity between the Iberian wild boar and domestic pig makes the distinction between the two species very difficult.

vessels and once they were already within the structure. In the lithic assemblage, there was a connection between two fragments of a quern-stone (Figure 10); its fracture was fresh, indicating a short period between breakage and deposition inside the structure. This quern-stone was broken in two parts which were then put inside the structure at the top of the structure (Phase V - [103]) and at the base of the structure (Phase I - [115]). The fragmentation of this artefact is not a post-depositional phenomenon, as seen with the ceramics. On the contrary, the stratigraphic position of the pieces entailed different human actions: an intentional or accidental breakage of the quern-stone and an intentional or accidental distribution of the fragments within the structure. If we consider the social importance of fragmenting and distributing material and how this can reconfigure the meaning of such things, we may look at the use of this quern-stone as something that was used to give meaning to the beginning and the end of the infill of the structure; the pieces give meaning by becoming part of the stone structures that receive, hold and keep the corpses of an animal and a child.
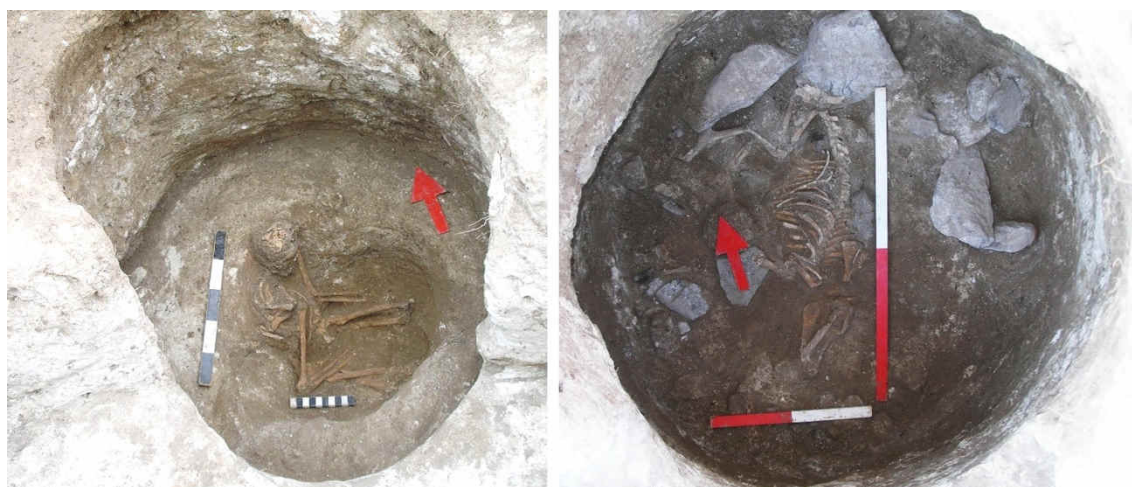

Figure 9 – Horta do Jacinto, structure 1: left) human burial context; right) animal burial context.
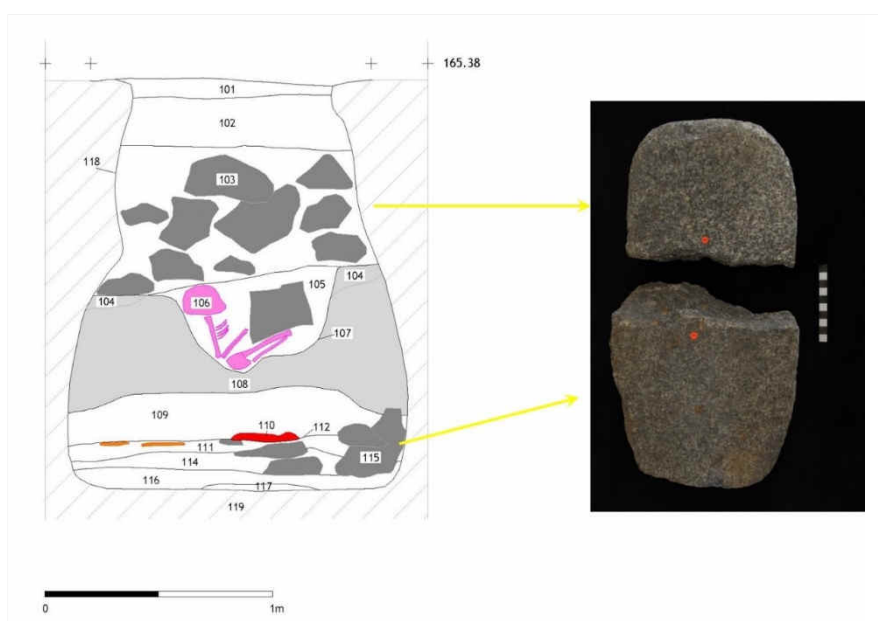

Figure 10 – Horta do Jacinto, structure 1: stratigraphy and refitting of a quern-stone, the parts comes from the upper and lower fills.

The refitting of this quern-stone makes us realize how fragmentation intertwines with the construction (or filling) of the structure. This action makes us believe that, despite the diversity of practices taking place within the structure's infilling, there may have been a common thread between them which, in a material sense, is formalised by the presence of half of a quern-stone at the base and the other half in the upper level of the filling. This leads us to think again about the linearity of the sequence of the deposits that we created while digging and recording the fills. This image of sucessive actions may have occurred within a cyclic temporality, something that started with the breakage of an artfact and that would end with the gathering of both fragments within the same structure. In thinking through the fragmented quern-stone we started to twist the initial linearity and expand our understading of the temporality of the infill.

3.2. Structure 118 - Montinhos 6

The excavation at Montinhos 6 covered two hills. In this area approximately two hundred structures with different morphologies and chronologies were identified (Baptista 2013; Baptista & Gomes 2011). Structure 118 corresponds to a hypogeum dating from the regional Bronze Age, with a sub-quadrangular antechamber, two burial chambers and a pre-existing pit (Figure 11). In the course of excavation, we believed that the structure was used at different phases, that each chamber's burial took place at a separate time. Let us present the sequence observed in the field:

- During the excavation of the sediment filling in the antechamber, we were able to define the stone structure [11801] closing chamber 1 [11806]. After removing this stone structure, we were able to identify a burial context of a sub-adult, which had been deposited in a foetal position [11805] (Figure 12);
- The base of the stone structure closing chamber 1 was on top of a deposit with clay nodes. After removing this deposit, we began to see the stone structure [11808/09] closing chamber 2 [11811/14], within which there was the burial of a female adult [11812]. There was a meat offering in association with this individual [11813] (Figure 13).

Initially, this sequence suggested that the burial of the adult individual (in chamber 2) occurred before the burial of the sub-adult individual (in chamber 1).

During the excavation of the adult skeleton, we identified a fragment of an ulna from a different skeleton. In the sub-adult inventory, which took place a few days earlier, the left ulna was only represented by a small fragment (an absence which, at the time, we thought could be related to taphonomic processes). During the post-excavation study of these contexts, we tried to ascertain if these two pieces of ulna were parts of the same bone and, in fact, they were both part of the sub-adult individual buried in chamber 1 (Figure 14). This evidence forced us to review our original sequence. The removal of a segment of ulna from the sub-adult corpse means that this individual was already buried and already a skeleton. Therefore, given that the small portion of the ulna was *in situ*, this chamber must have been revisited when the adult was buried. This correspondence between the bones forced us to question the sequence of events suggested by the stratigraphy. During the excavation, and taking the stratigraphic sequence into account, we thought that the first burial took place in chamber 2. However, the fact that the adult's deposition contained a fragment of the left ulna of the sub-adult from chamber 1, means that the sub-adult (chamber 1) was buried before the adult (chamber 2). In this sense, the study of fragmentation has led us to consider that chamber 1 was reopened. The reutilization of chambers in these types of structures appears to be recurrent – as suggested by the presence of ossuaries and multiple burials (Baptista 2013; Porfírio & Serra 2016; Valera *et al.* 2014). However, the reopening processes do not always leave material evidence of such practices. In this case, the correspondence between the fragments of ulna suggests the reutilization of the same structure and establishes a link between different moments of burial.

In the two structures discussed in this section, fragmentation enabled us to revisit the sequence of fills recorded during the excavation. In Horta de Jacinto, the correspondence between the two parts of the same quern-stone suggested that, despite the diversity of contexts and spatial arrangements within the structure, there would appear to be a linear set of actions within the cyclic

temporality regarding the breakage and distribution of the fragments of an artefact. In Montinhos 6, the refitting between the osteological elements leads us to assume that the structure was reutilised in a way which, initially, we had no means of determining. This last case is significant because we are accustomed to interpreting these burial contexts as frozen depositions, sealed by stone structures. The fragmentation of the child's bone and its deposition within another burial context causes us to realize how dynamic such burial traditions might have been and how a new burial could activate older burials, demanding the opening of chambers and the touching of ancient corpses. In both cases, the emphasis on fragmentation made us rethink the infill of the structures and consider how memory can act upon the material world and how the material world creates the conditions of memory practices; and how the infill of these structures goes beyond the linearity of time we produce as we excavate.
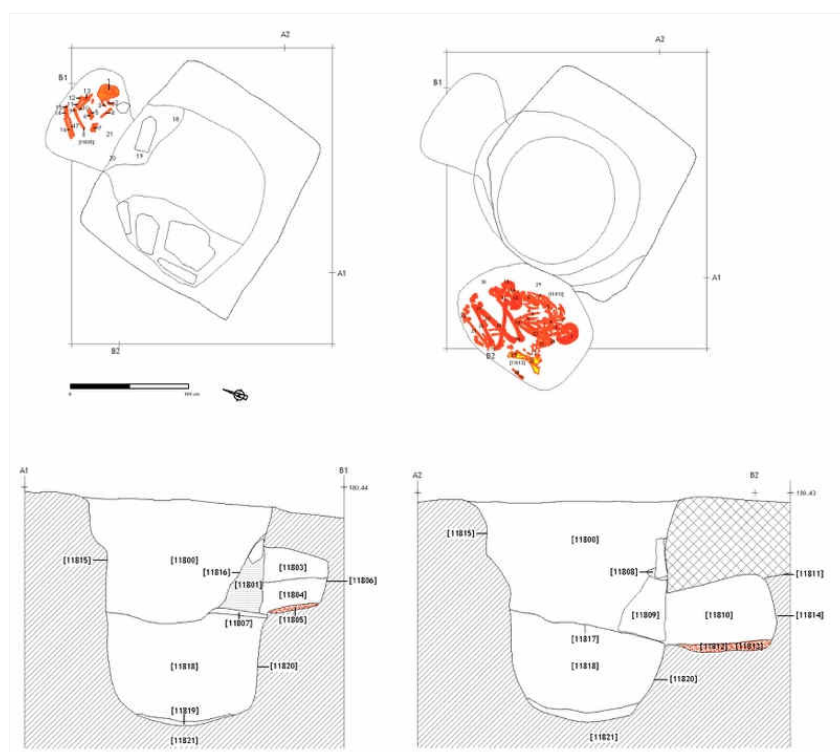

Figure 11 – Montinhos 6, structure 118: plans and stratigraphy.

Figure 12 – Montinhos 6, structure 118: chamber 1.

Figure 13 – Montinhos 6, structure 118: chamber 2.

Figure 14 – Montinhos 6, structure 118: refitting between the parts of the sub-adult's ulna.

4. Fragmentation as a strategy to establish links between structures

Thus far, we have seen examples where the reassembly of fragments from the same structure allows us to better understand its infilling process. We will now explore how the correspondence between fragments of pottery from different structures enables us to establish links between them. To that end, we will analyse a set of structures from Montinhos 6 which, overall, date back to the Bronze Age (Baptista 2013; Baptista & Gomes 2011). We will focus our analysis on two groups of structures: pits 34, 40 and 42; and pits 100 and 120.

4.1. Montinhos 6: pits 34, 40 and 42

In pit 34 (Figures 15, 16 and 17), the ceramic component consists of an assemblage of small abraded fragments, distributed across the first and second fill deposits ([3400] and [3401]), and a decorated fragment from a large sized vessel coming from the base deposit [3402]. In pit 42, the ceramic assemblages occurred at two different levels: in the first deposit 39 fragments were deposited in a stone level [4200], and near the base of the structure was a concentration of 65 fragments [4202]. During the reassembly of the 104 fragments of pottery from pit 42, we could recognize the presence of 26 distinct vessels. While trying to match these fragments, we realised that a fragment from pit 34 corresponded with a fragment from pit 42, forming part of a vessel. It should be noted that the fragment from pit 34 occurred in isolation, in a horizontal plane [3402], and the fragment from pit 42 was found in a deposit/level [4202] containing a group of fragments within which we could recognized several vessels.
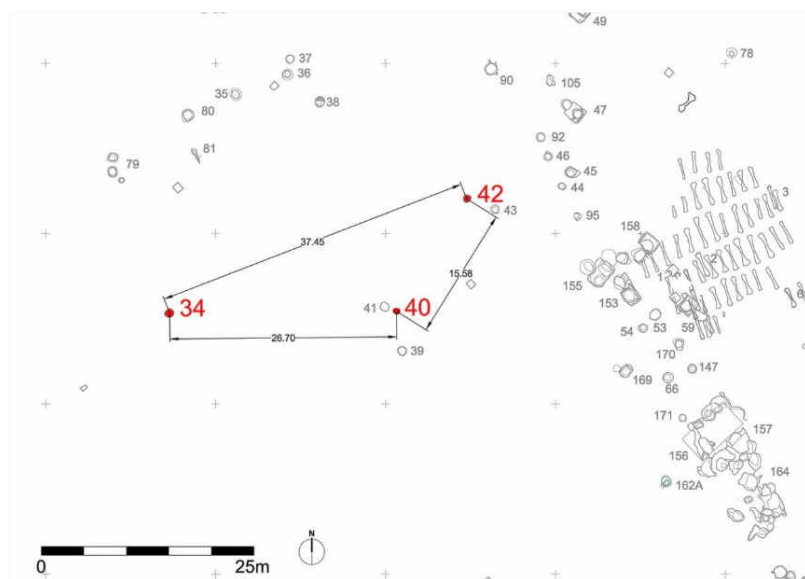
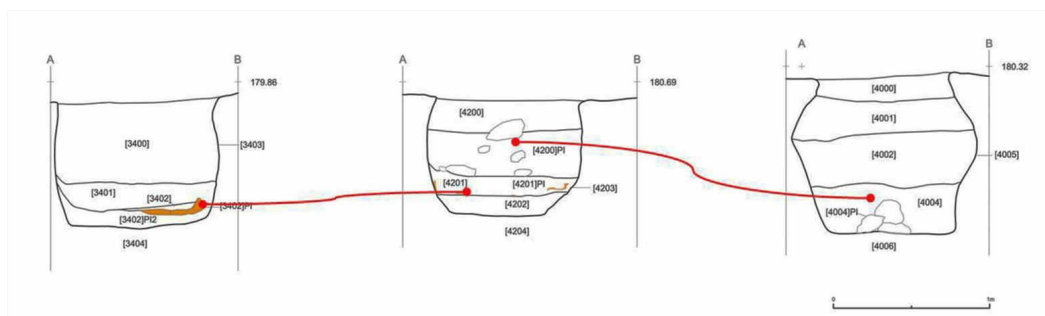Figure 15 – Montinhos 6: pits 34, 42 and 40.

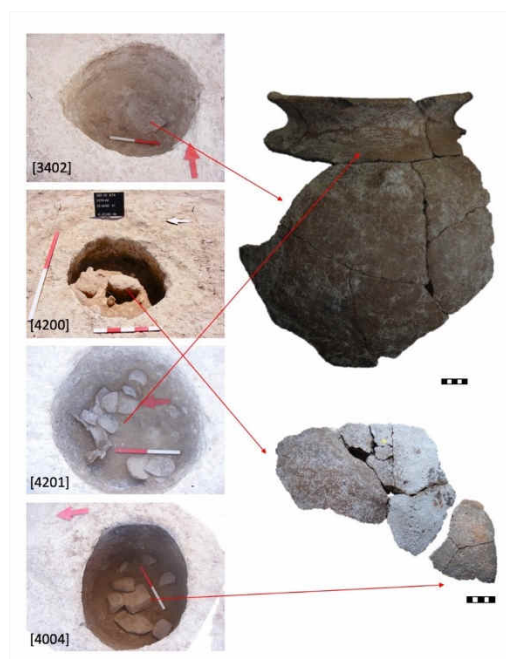Figure 16 – Montinhos 6, pits 34, 42 and 40: stratigraphy.

Figure 17 – Montinhos 6, pits 34, 42 and 40: refitting between sherds of deposits [3402], [4200], [4201] and [4204].

Refitting allowed the connection between pits 34 and 42 which were spatially separated; it enabled us to trace a line between them and add movement to an image which was initially static. This refitting permitted us to recognize a connection between two separated and different depositions: the deposition of a single fragment and the deposition of a group of fragments. By following the fragmentation processes we are gaining an image of movement between structures. A movement that entails an intertwining between the infill, fragmentation and distribution of objects. A movement that brought together these two structures and pit 40, as we will see below.

In pit 40, the ceramic component occurs almost entirely in a concentration of artefacts located at the base of the structure, where nine ceramic fragments, a quern-stone and a hammerstone were collected. During the refitting of materials regarding the assemblages of pits 40 and 42, there were correspondences between 3 fragments from the deposit [4004] and ten fragments from the deposit [4200]; these matches allowed us to recognize a larger fragment corresponding to a part of a vessel's body. It should be stressed that the fragments display cut marks, suggesting deliberate breakage. The correspondence between the pottery fragments from these three structures allows us to establish a link between these three architectural practices. Such a connection is evidenced by the fragmentation of ceramic vessels and their distribution across the different structures. It is hard to imagine the practices and processes that occurred prior to deposition outside these pit features and which contributed to the distribution of the fragments. We may see deliberate breakage, just as we may see intentional distribution of fragments. This might not answer the question of what people were doing in between these structures, but it allows us to understand the impoverishment of an image which privileges a classification of the pits according a static function.

4.2. Montinhos 6: pits 100 and 120

In pits 100 and 120, a similar situation was observed (Figures 18, 19 and 20). These two structures presented highly complex sequences of infilling with different levels of deposition of materials. The artefactual component of these depositions consisted of pottery fragments and nearly complete vessels. This indicates different fragmentation practices and distribution which, however relevant, must be discussed in a separate study. In addition to these more structured levels, ceramic fragments were also found in less structured fill sequences. The presence of fragments from the body of a vessel, decorated with vertical grooves, caught our attention when we were reconstructing these ceramic assemblages, as we found a fragment in pit 120 [12001] and a fragment from a less structured deposit in pit 100 [10005]. In this case, the correspondence of these fragments not only establishes a connection between both structures but also suggests a connection between two different forms (or processes) of incorporating ceramic fragments within the structure. The fragment in pit 120 seems to be intentionally incorporated in a deposition of ceramic fragment, suggesting a specific action and selection of the position of the fragment after the breakage of the vessel. In turn, the fragment in pit 100 seems to have gone inside the structure as a part of the deposit [10005] occurring alongside other dispersed small and unabraded fragments; the top of this deposit was then used as a surface for the deposition of a pot and a stag deer [10003/04].
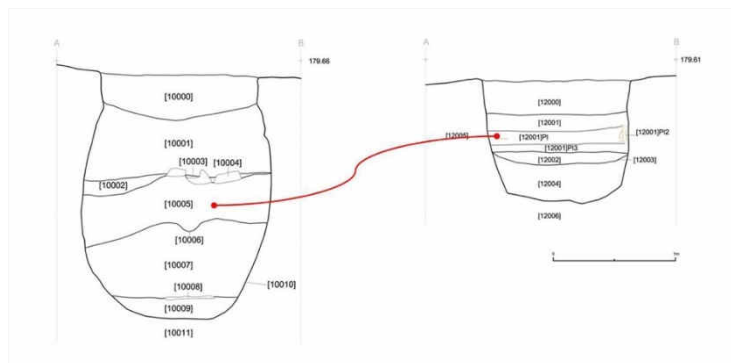

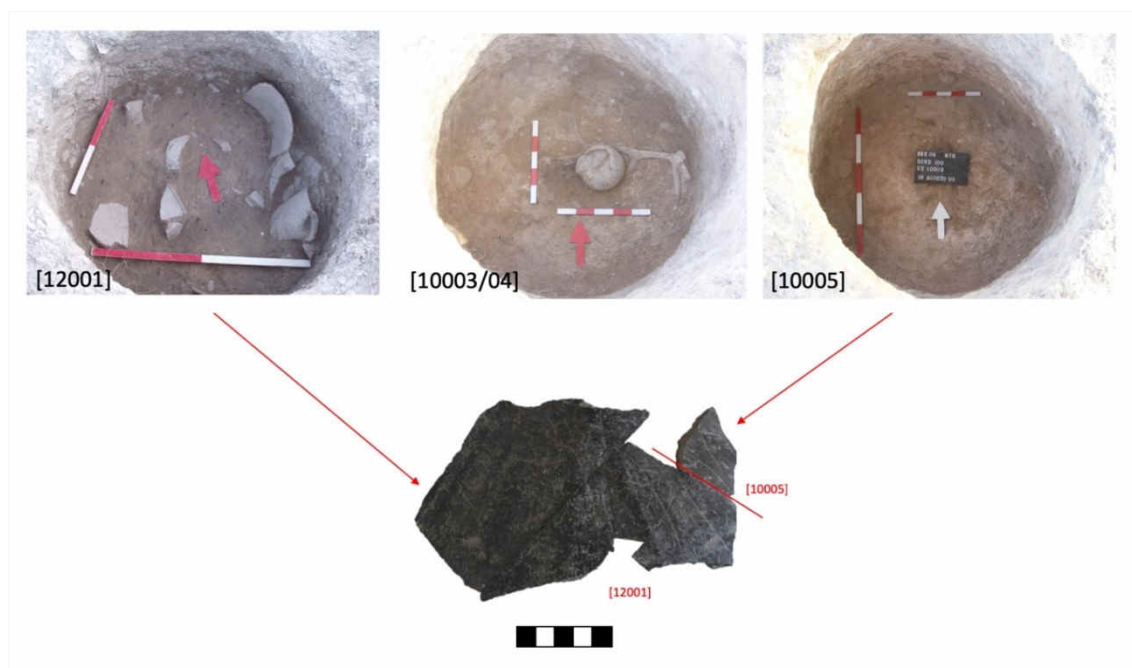Figure 19 – Montinhos 6, pits 100 and 120: stratigraphy.

Figure 20 – Montinhos 6, pits 100 and 120: refitting between sherds of deposits [10005] and [12001].

Again, these correspondences demonstrate the intertwining of the fills of these structures; an intertwining which makes it difficult to envisage the social practices that produced such breakage and distribution of objects. Again, these correspondences demonstrate the intertwining of the fills of separate structures. In addition, the intentional and accidental distribution of fragments adds a spatial dynamic to this intertwining which makes it particularly difficult to classify events and envisage the social practices that produced such breakage and distribution of objects. A spatial dynamic putting together intentional and accidental distributions of fragments and whose order is hard to classify.

5. Final remarks

The results obtained in the reassembly of the abovementioned fragments expanded our initial vision of the structures. The study of fragmentation led us to revise the deposits and filling sequences individualised during the excavation process. During this revision, the reassembly of the fragments made us rethink the units we were formulating and demonstrated that, sometimes, different units could be viewed as an integral part of the same dynamic or moment of the structures' infilling. On other occasions, the same concentration of fragments can include several different vessels which, in turn, indicate other practices and dynamics that go beyond such congregations and their deposition inside the structures. Fragmentation has, thus, led us to reconfigure and rearrange the links between the different elements within these constructions; reconfiguring and rearranging the links between structures and practices. In this sense, the fragments performed as active elements, expanding the limits and possibilities of creating temporal and spatial unities. Fragments were active elements bringing their life cycle to the fills and reconfiguring the life cycle of the structures; they brought the memory of such cycles to the structures, expanding the spatiality of a structure's physical boundaries; fragments add memory to the structure and change its temporality. By recognizing the importance of how fragments participate in shaping time and space, one should question the part they may have played in framing the horizon of meaning in prehistoric communities (*e.g.* Chapman 2000; Chapman & Gaydarska 2007). However, the discussion of this horizon of meaning goes beyond the purpose

of this paper, whose objective is to highlight the importance of studying fragmentation to better understand the material evidence produced during excavations.

Before ending, we must say that we feel that this a fragmented paper, made with the fragments of an ongoing study. Our intention was not to develop a discussion on the meaning of fragmentation and distribution of objects. Instead, by considering the social dimension of fragmentation and how it links to the production of memory and architecture (e.g. Connerton 1989; Meskel 2003), our main propose was to share the fragments, to give emphasis to a particular characteristic of the structures: they hold fragments whose study help us to think beyond the linearity of stratigraphic sequences and beyond our initial questions (e.g. Lucas 2005; Schiffer 1987). Following the links of the fragments may not help us to construct well-defined social scenarios, but those links do enable us to appreciate the strangeness of past communities' temporal and spatial dynamics (Jorge 2014; Vale 2010). This strangeness challenges us to explore multiple ways to translate such differences; and made us made us more aware of that strangeness, made us write an paper that is less coherent than we would like; a fragmented paper. Even so, we think that by giving emphasis to the fragments, and to the fragmentation processes, we have expanded our possibility of understanding such diverse and complex realities. The focus on fragments contributes to a better apprehension of the temporal and spatial dynamics of this architectural tradition. The fragments allow a better understanding of the conditions under which the infill of the structures took place; about the conditions under which this strange world in negative came into being.

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CHAPTER 6

AN END THAT PERPETUATES: A CAIRN FROM THE END OF THE 3RD MILENNIUM BC AT PERDIGÕES.

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Abstract

One of the most recent structures identified so far in the ditched enclosure of Perdigões will be presented, allowing one to discuss intentionality, functionality and chaining issues. This context, dating from the last quarter of the 3rd millennium BC, known as *Cairn* 1, due to its similarity to Chalcolithic and Bronze Age structures, contains a series of pits, of which is noteworthy pit 79. In its interior three moments of faunal remains, deposition were identified.

These remains, whose characteristics seem to point to the tangible result of commensality practices, allow one to ponder the chaining and intentionality behind this deposition, questioning if it can reflect an act of eviction without any symbolic value, or a formalised deposition with its own value. Alongside, the agglomeration and closure of these realities by the stone *cairn* suggest the existence of a script of practices, mostly of intangible value and meaning.

Keywords: Perdigões; end of the 3rd millennium BC; South of Portugal; *Cairn* structure; Social practices.

1. Introduction

One of the most intriguing moments of European Recent Prehistory is undoubtedly the transition between the 3rd millennium BC and the initial moments of the 2nd millennium BC, mainly because of the signs of an apparently abrupt end of the practices and social organizations of the end of the Chalcolithic and a subsequent social, funerary and architectonic invisibility in Early Bronze Age.

This moment has been studied, in the South of Portugal, mainly in habitats and in association with the Bell Beaker phenomenon, like occurs in Porto das Carretas (Soares 2013) or São Pedro (Mataloto, *et al.* 2015). Even so, with the intensive research surrounding the ditched enclosure of Perdigões new contexts have emerged (funerary and others), allowing one to

question the more homogenising interpretations that have been associated with this determinant historical moment.

One of those examples is the structure that is going to be discussed here – *Cairn 1*. This assembly presents unique contextual, artefactual and architectural characteristics that distances it from all the intervened contexts, so far, throughout the south of Portugal. Due to its uniqueness, late chronology, the identification of three moments of deposition of faunal remains and its implantation in the central area of the Perdigões enclosure, the *cairn* allows to understand / think about the dynamics and practices prevailing in the archaeological site, where one can include commensality and funerary rituals, which, in general, appear to be in continuity with previous chalcolithic practices and cosmologies.

2. Archaeological framing

The ditched enclosure complex of Perdigões, due to its 20 years of ongoing research, it is one of the most investigated and published sites of Iberian Recent Prehistory (Lago *et al.* 1998; Valera 2008; 2010; 2015a; 2015b; Valera, Evangelista 2014; Valera *et al*. 2000; Valera *et al*. 2014a; Valera *et al*. 2014b; Valera, Basílio 2017).

It is located in Reguengos de Monsaraz, 35 km from Évora (South of Portugal), at the western extreme of the Álamo river valley (Lat. 38.441789º/ Long. -7.545106) in a natural amphitheatre surrounded by lightweight strands. This implantation restricts the site's visibility to the valley that develops to the east (Lago *et al*. 1998) (Fig. 1).

Perdigões presents a great diversity of practices during its 1500 years of occupation, such as the existence of astronomical relations, the maintenance of the tendency for circularity and concentricity or even the presence of funerary structures and depositions of human remains (Valera 2012; Valera *et al*.2014b; Valera, Godinho 2009; 2010). This reality and the overlap and concentration of structures, materialities and practices in the central point of the enclosure complex (Valera *et al.* 2014b), emphasises the correspondence and continuity between the ideological and cosmological system of the groups that converged at Perdigões, apparently until the transition between the 3rd and 2nd millennia BC (Valera, Basílio 2017).
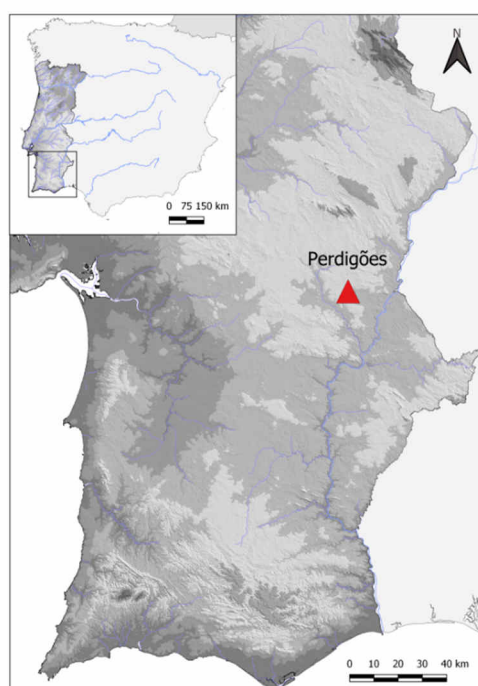

Figure 1 – Implantation of Perdigões.

3. The *Cairn* structure

The structured under study is located in the central core area of the ditched enclosure of Perdigões (Fig. 2), and it was called *Cairn* 1 (Fig. 3) due to the similarity that presents with other structures, some of them funerary, that resort to similar architectonical solutions (Cruz *et al*. 1998; Kalb, Hock 1982; Cruz 1997). It corresponds to a structure that is formed, filled, and apparently used in simultaneous, or at least in a short time span, having the construction of a dry-stone cover as the last comprehensible moment of its biography. The resort to this type of mounds reassembles some European contemporaneous structures (second half of the 3rd millennium BC), like the ones found in *Le Petit-chasseur* I (Harrison, Heyd 2007) in Switzerland, or the *Kirkhaugh Cairn* at Northumberland, Scotland (Fitzpatrick 2014), being noteworthy the so far absence of similar architectures in the regional sites of SW Iberia. Even so, other stone tumuli structures from the Bronze Age are known, like Vale de Chão 1, in Braga (Boas 2014), or Laceiras do Côvo 2 and 3, in Vale de Cambra (Sá *et al*. 2014; Sá 2014) these ones in Northwest of Portugal, dating from the beginning and middle of the regional Bronze Age (from about 2000 BC to the end of the 3rd quarter of the 2nd millennium BC).

To the stone structure under study, it was added, as a possible architectonical element, a small diorite *menhir*-like stone (Fig. 6) with a semi-oval shape, found in the top of the deposit [429], right beneath the concentration of diorites, gabbro and schists that form the *cairn*. In this layer, only scarce and unarranged materials were found, being the *menhir*-like stone practically isolated.

This presence may correspond to a simple inclusion of a stone without any associated connotation (just a stone that was nearby) or to a specific deposition of an element with a particular type of meaning, that could have added significance not only to the architecture but also to the associated practices as well. In one hand one can consider that this stone might have had a previous "life" (and history), which would imply that this element was reused, reactivated and integrated into a later deposition. If so, this *menhir*-like stone would be soaked in ideas, meanings and memories from previous times and ancestors, representing an appropriation of the material and immaterial past, and probably also an instrumentalization of earlier myths, generating and fomenting new consensuses, correspondences and social stabilities (Bueno-Ramirez *et al*. 2016) (Fig. 6).

This utilization is not an innovation or one of a kind example from the 3rd millennium BC. Similar practices were detected in precedent chronologies, namely in the reuse of engraved schist plaques in the regional Neolithic or the decorated *stelae* during the Bronze Age (Henriques *et al*. 2012; Gardete 2015; Alves 2014), being also possible to notice slight similar reutilization evidences in some materials deposited in the fillings of the *cairn* (see ahead). Contemporary reoccupations of earlier structures, like the funerary architectures, also occur, serving as an example the case of the Tomb 2 and 4 of Perdigões (Valera *et al*. 2000), emphasising the social fluidity and the *continuum* of transgenerational practices between these human groups (Valera *et al*. 2017).

Even so, in another hand, one must also mention that this artefact (the *menhir*-like stone) might have been specifically built to be an integrant part of the *cairn* structure, with the maintenance, and repetition of both the shape and the raw-material (which highlights their importance), straitening the gap between the past and the present (as already suggested above to the possible reutilization). However, one was not able to retrieve any evidence that could strongly favour one of the interpretative hypotheses presented but is noteworthy that the stone was broken in what could be the basis of the *menir*.

After the identification of the *menhir*-like stone, one found a subcircular depression with approximately 3m of diameter and about 0,30 m depth. In this depression two pits with very different fillings and dimensions were excavated, one of them occupying a central position (pit 79), and the other one, pit 77, located to the southeast (Fig. 5).

This last structure (pit 77) that presents a circular shape is a small pit with 0,58 m of diameter and 0,40 m deep. It was filled in three different moments, where the most recent and the oldest correspond to the deposition of small and medium-sized stone blocks, separated by a thin reddish clay deposit. Regarding the materials, this structure only provided some ceramic and
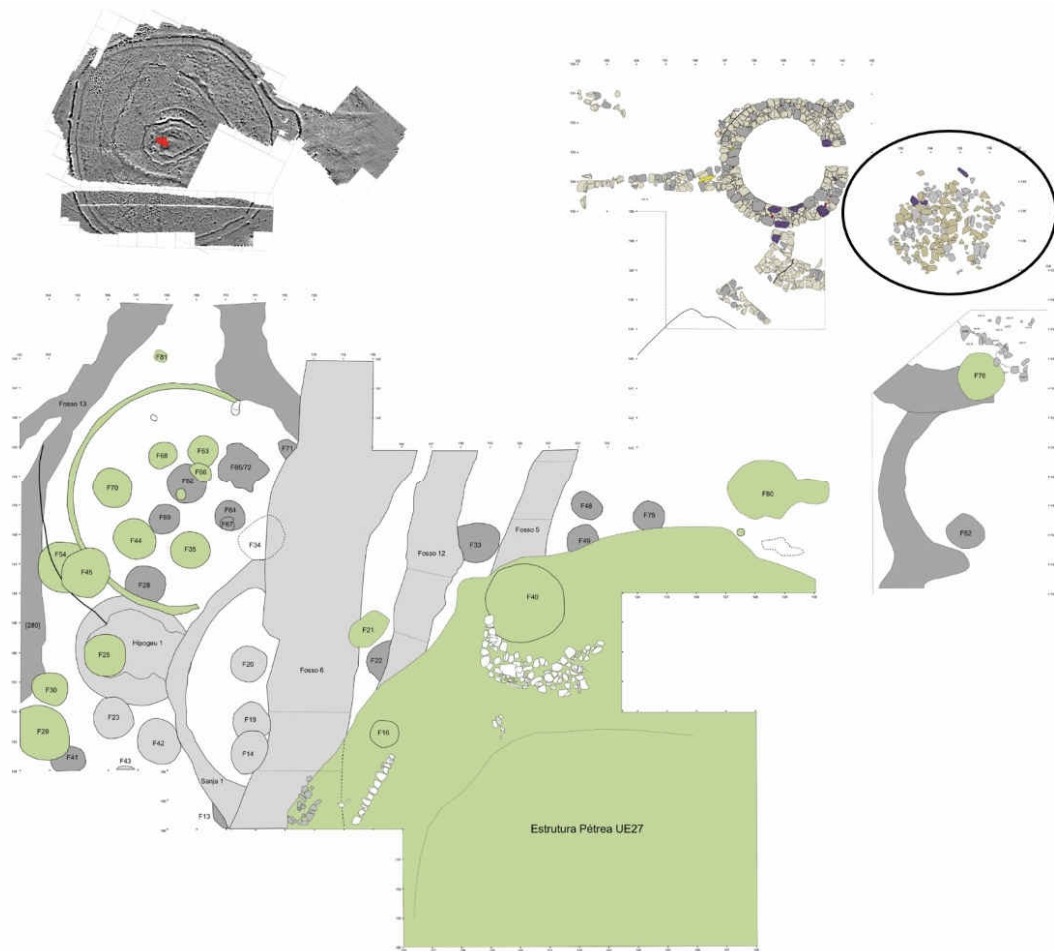
Figure 2 – Implantation of the *Cairn* in Perdigões magnetogram and in the general plan of sector Q (Drawings by António Valera).

Figure 3 – *Cairn*' Stone mound (photo by António Valera).

Figure 4 - Stratigraphy of the *Cairn* structure (Harris matrix).

Figure 5 – The biography of the *Cairn*: a) the stone mound; b) the depression excavated in the previous chalcolithic deposits and the section of pit 77; c) the first faunal remains identified; d) sections of pit 79 (Drawings by António Valera).

Figure 6 – The *menhir* identified under the stone mound (photo by António Valera).

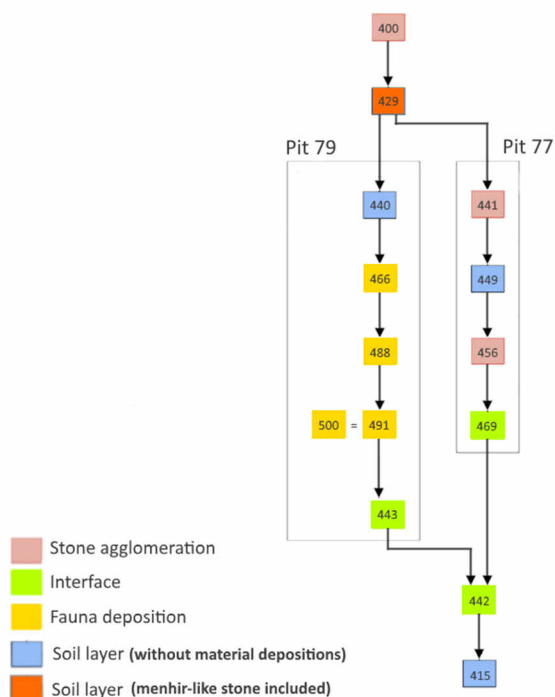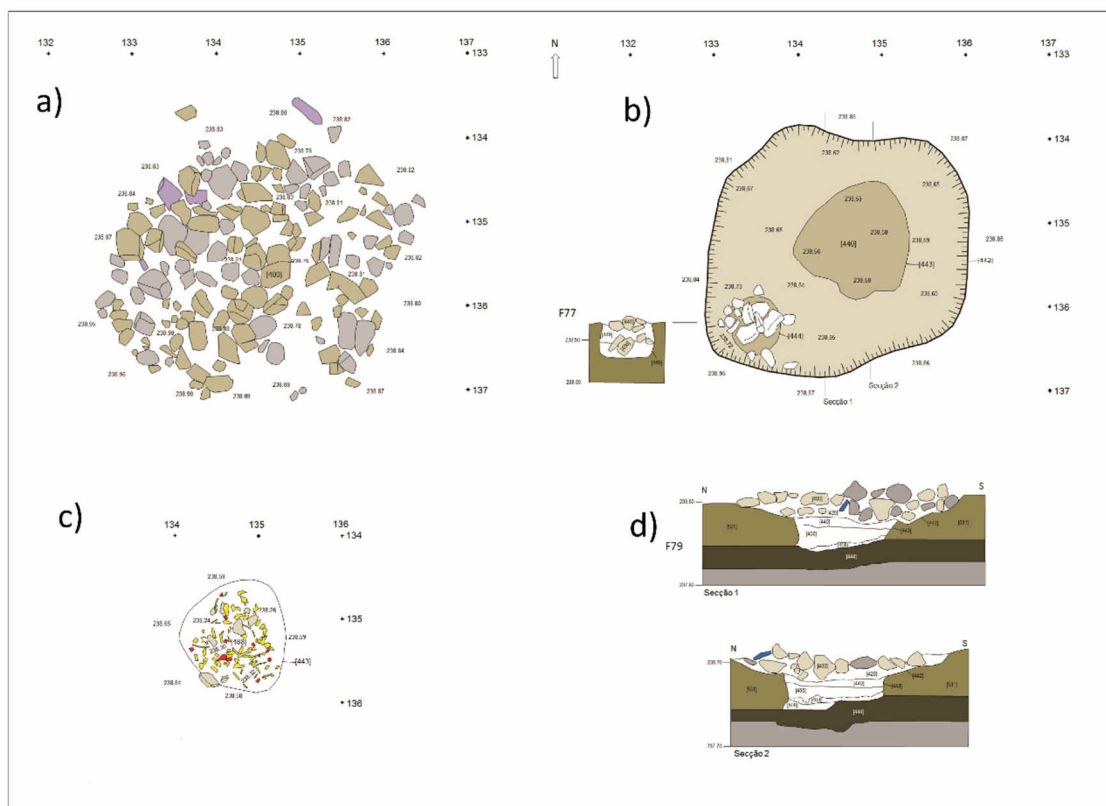scarce faunal remains in the form of small fragments, being all of them unclassifiable and without any reassembly. Pit 79 has a somewhat irregular shape, with a diameter of 1,40 m and 0,66 m depth. Concerning the filling, it presents a more intricate process. It is characterised by the identification of three deposition phases of a broad set of faunal remain (Cabaço 2017), associated with the deposition of several archaeological artefacts. These depositions draw a specific concentration pattern that allows one to recognise that the filling was carried out from the southern side of the pit to the northern, possibly by someone standing on the edge of the pit (or close to it), consenting a process of reconstruction of the needed human gestures, which would have added chapters and meanings to the biography of this structure (Appadurai 1986).

The constructive practices and successions, to which we can add the inclusion of a possible *menhir* and the deposition of the faunal and artefactual elements, accentuates the successive and interrelated character of the structures included under the stone deposition (*cairn*). As such, it is to recognise particular chaining and the possibility of the existence of a constructive guide that would be structured, limited, and defined by the intangible practices related to this architecture.

Due to the stratigraphical position concerning the surrounding chalcolithic deposits and the recovered materials, a later chronology was associated with this structure, being this confirmed by two radiocarbon dates of the fauna from pit 79 (Table 1). This structure dates from the last quarter of the 3rd millennium BC (table 1), corresponding to one of the most recent structures found so far in the Perdigões enclosure (Valera, Basílio 2017). In this time span, several shifts are beginning to be felt, with the earlier and still contemporaneous symbolic and constructive practices seeming to be slowing down or even starting to disappear, culminating in the abandonment of the construction of new ditches and the clogging of the ones that were still active (Valera, Basílio 2017).

In the transition to the beginning of the 2nd millennium BC, not only the practices were changing but perhaps also the understanding and meanings that the prehistoric groups associated with/to Perdigões and its architectures. This had to involve an ideological and cosmological alteration. Even so, the depositional practices and the construction of new but smaller structures in the central area of the ditched enclosure continues to occur, namely in the form of the *cairn* structure here mentioned, but also of a possible pavement, a hearth and another stone structure, which functionalities and meaning(s) still need to be accessed (Valera, Basílio 2017). Even if the enclosure and associated meaning could be changing, it seems to still be a slight correspondence between the shifting human groups and this site that can be interpreted as a maintenance of Perdigões social agency, but also as a way of resistance and reconnection (Valera 2015a).

Table 1 – Chronological information for the *cairn* structure

Provenance		Sample	Ref.	BP Date	CalBC	Bibliography
Pit 79	[500]	*Cervus elaphus*	ICA-16B/0913	3690±30	2196 -2171 (4,6%) **2146 - 2010 (85,6%)** 2001 -1977 (5,1%)	Valera, Basílio, 2017
Pit 79	[488]	Undetermined Fauna	ICA-17B/0104	3650±30	2199 - 2164 (8,7%) **2151 - 2017 (84,5%)** 1995 - 1981 (2,2%)	Valera, Basílio, 2017

Figure 7 – Pits 79 and 77 (photo by António Valera).

4. Faunal remains and other materialities

The meaning, or meanings, of the *cairn* structure depend not only on the architectures, that seem to indicate a succession of chained constructive practices but also on the recovered information on the faunal remains and the archaeological artefacts.

In the case of the faunal elements (Table 2), the collection is formed by 1724 remains with 95.36% of the assemblage coming from the three deposition moments identified in pit 79 (Cabaço 2017: 23). In only 11,31% of the collection, it was possible to taxonomically identify the species, reflecting the state of preservation of the set (high degree of fragmentation). The minimum number of 20 individuals represent a limited taxonomic diversity, where the wild species are curiously dominant, mainly deer (*Cervus elaphus*) and *equidae* (*Equus* sp.), the first one represented by eight individuals and the second by two. Even so, other types are present, such as bovines (*Bos taurus* and *Bos* sp.), ovine/caprine (*Ovis/Capra* sp.), swine's (*Sus* sp.) and lagomorphs (rabbit or hare). Most of the animals were adults when they were slaughtered/killed, and all the anatomical parts are characterised, being the axial skeleton and the elements of the appendicular skeleton the most represented (Cabaço 2017: 25).

In the surface of the faunal remains, it was possible to identify several anthropic and natural alterations. The most relevant is the exposure of 71% of the assemblage to fire, varying from a partial contact to an extreme exposure leaving the bones calcinated (Cabaço, 2017: 29). Other anthropic alterations are present in the form of possible cut marks which, when combined with the burned remains and the suggestion that the process between usage and deposition was quick (due to the absence of eroded surfaces), shortens the interpretation range available (Cabaço, 2017: 30).

In brief, the obtained data seem to point out to a bone accumulation resulting from the consumption of portions of animals, particularly of large and wild specimens, such as deer or even horse (Cabaço 2017: 31). This pit did not accommodate remains of processes of slaughter and preparation of animal carcasses. If so, the representativeness of the several skeleton parts would be more similar. Instead, the presence of the skeleton parts that have a more significant potential for the use of meat, the absence of anatomical connections and the dominance of charred remains seem to indicate that the depositions filling pit 79 may correspond to the remains of an event of food ingesting – of a possible feasting (Fig. 7).

Figure 8 – Possible anthropic marks in the faunal remains (according to Cabaço 2017).

This panorama, the predominance of wild animals over the domestic specimens (a reality that remains even if we hypothetically consider all the swine's and bovines as domestic) mainly the prevalence of *cervidae*, introduces a contrast with what is already known for other contexts of the 3rd millennium BC in Perdigões (Cabaço 2017: 31; Costa 2013). In ditches 1, 3 and 4 the proportion of wild and domestic animals is opposite to the one drawn by the *cairn*. In all of these structures, one can clearly see the dominance of the domestic species, such as *Sus* (the most common species in these structures) or *Bos*, over the wild specimens, where can be included the Deer or even the horse (Costa 2013). This is true for both ditch 3 and 4, where 53,85% and 64,70% of the total assemblage correspond to domesticated species.

As such, the behaviour highlighted in the *cairn* seems to be conditioned by intentionalities, practices, meanings and relationship between the Chalcolithic human groups and the landscape (where non-human beings, and even human beings, are included), but it also

represents a glimpse in what may correspond to a shifting in the consumption patterns, and possibly in other social practices, in the transition to the 2nd millennium BC. However, it is important to notice that the *cairn* context is, so far, unique in Perdigões and also in Alentejo, adding to that is one of the later found so far in Perdigões ditched enclosure, lacking contemporaneous parallels that could clarify if this consumption behaviour is a trend in the transition to the 2nd millennium BC or if is an exclusivity of this particular structure (Cabaço 2017: 31).

In addition to the faunal set, 212 unburned archaeological materials were recovered. These present characteristics that are compatible with the contemporaneous Chalcolithic regional assemblages (Valera 2013; Soares 2013).

Table 2 – General characterisation of the faunal remains from *Cairn*

General characterisation Species	Number of identified specimens (NISP)	%NISP	Minimum number of individuals (MNI)	%MNI	Minimum number of elements (MNE)	%MNE
Identified mammals	**195**	**11,31**	**20**	**100**	**136**	**100**
Equus sp. (horse)	23	1,33	2	10	15	11,03
Cervus elaphus (deer)	112	6,50	8	40	85	62,50
Bos taurus (domestic ox)	3	0,17	1	5	3	2,21
Bos sp. (undetermined ox)	10	0,58	1	5	2	1,47
Ovis/capra (ovine/caprine)	16	0,93	2	10	8	5,88
Sus sp. (pig/wild boar)	21	1,22	4	20	14	10,29
Oryctolagus cuniculus (rabbit)	6	0,35	1	5	6	4,41
Lagomorph	4	0,23	1	5	3	2,21
Unidentified mammals	**664**	**38,52**				
Medium-sized mammals	217	12,59				
Large mammals	421	24,42				
Small mammals	25	1,45				
Microfauna	1	0,06				
Undetermined remains	**865**	**50,17**				
Total	**1724**	**100**				

The ceramic collection distinguishes itself from the other artefact sets due to its 104 vessels (or to be more precise, 103 sherds with just only one reassemblage), six decorated vessels and 26 loom weights. These 104 containers/sherds correspond, in most of the identifiable cases, to open forms, like dishes and bowls, that, in a site like Perdigões, might have had a role in communal/shared consumption practices. The scarce ornamented containers are representative of the predominant decorations of the second half of the 3rd millennium BC, namely vessels with solar motifs, "pinched" decoration and a decorated bell beaker with typical International (Maritime) bands (but intensively eroded). Regarding technology, the same maintenance signs are present, even if some production shifts can be seen in the *cairn* sherds, in the preparation of the clay. In short, the set of vessels and loom weights identified in the *cairn* context present a morphological and technological monotony and standardisation, which illustrates the existence of productive processes still rooted in the human groups of the end of the 3rd millennium BC, at a time when the changes in the social trajectory would already be felt (Basílio 2018) (Fig. 8).
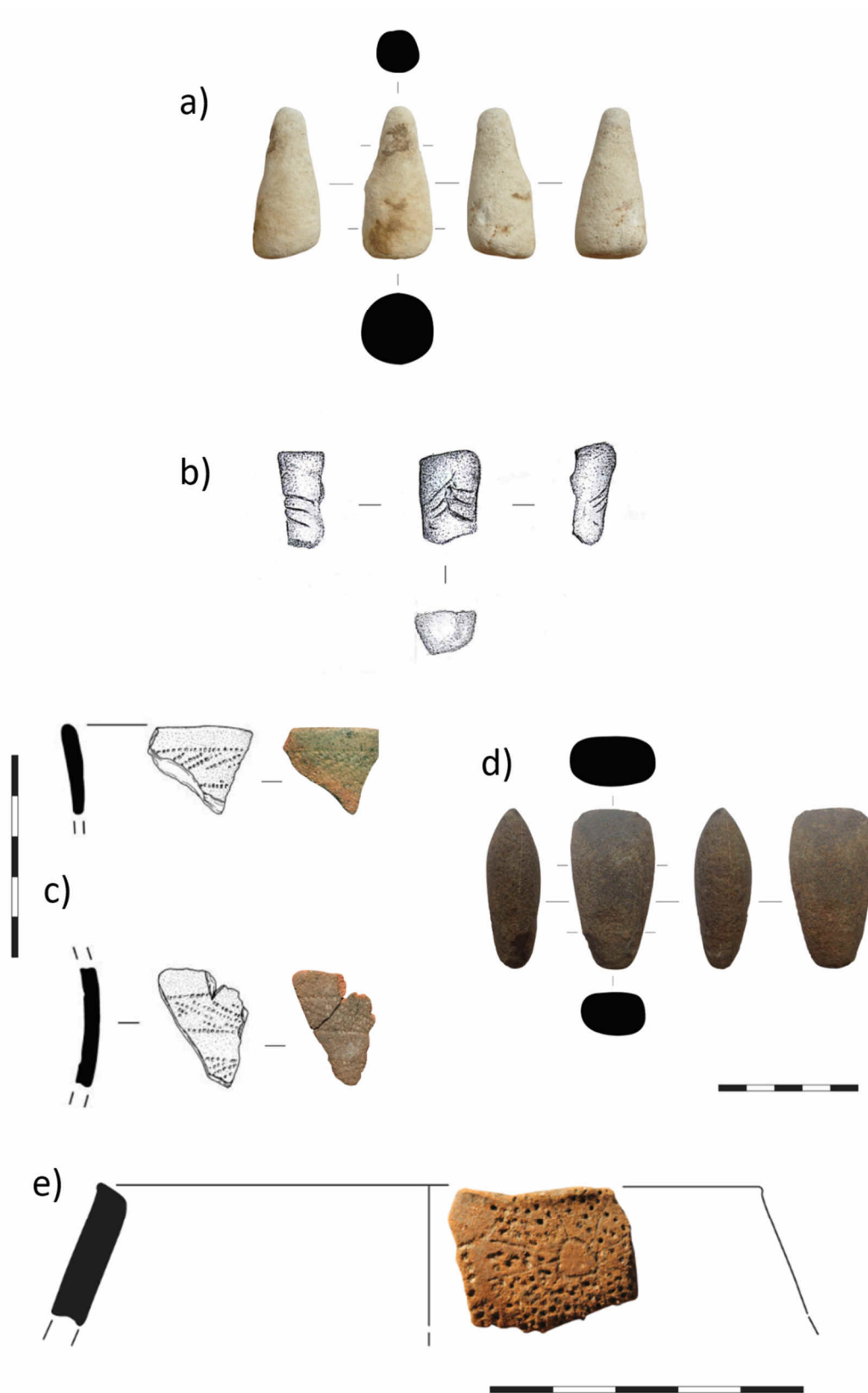
Figure 9 –Most representative materials from the *Cairn*. a) Limestone idol; b) ceramic idol with facial tattoos; c) Bell Beaker sherds; d) polished axe; e) sherd with solar motif.

The lithics are the second most represented group in the *cairn* context, with a total of 53 occurrences, mostly fabricated by resorting to local raw materials (milky quartz). It corresponds to a small set, where the utensils/tools are scarce, even so, the arrowheads and the blades stand out in the utensils category. Nonetheless, these groups seem to prefer uncarved products, such as flake, having an expedite productive technology. This, the dimension of the set and the predominance of flakes is one of the main characteristics of the lithic assemblages of Perdigões contexts and its region (Lago *et al.* 1998). To the lithic set, one can also add a single polished stone axe, which presents usage signs at its edge.

Several pieces of evidence of metallurgical transformation were also recovered, being identified the entire production chain, with the presence of the raw material (copper ore), phases of the transformative process (slag and cast remain) as well as the final artefacts which, in this case, correspond to two copper awls. The presence of metallurgical activity, together with the identification of bell beaker ceramics in the *cairn* contexts, allows one to think about the relationship between the bell beaker components of the material culture and its role in processes and norms that involved the transformation, transition and metamorphosis of materials and states (Valera, Basílio 2017), as suggested to salt transformation (Delibes de Castro *et al.* 2016).

To these artefacts, one can also add the identification of two elements of the most intangible components of these communities. One of the artefacts corresponds to an undecorated limestone idol, with an anthropomorphic shape, whose presence implies processes of mobility, due to the exogenous material in which it was developed (Valera 2017) – this raw material can be found in Lisbon Peninsula, but also in Moura, approx. 35 km from Perdigões. This type of objects often appears in funerary contexts, mainly in the Portuguese Estremadura region (Cardoso *et al.* 2001/2002), even so, in the South of Portugal, the general tendency seems to point in an alternative direction, underlying that these objects, even appearing in tombs, can also have a relevant social agency outside graves, in the region under study (Valera 2015b). The other idol was moulded in clay, and it presents a set of isolated incisions, which have been interpreted as facial tattoos, coupling anthropomorphic characteristic to this artefact (Basílio 2018).

It is also noteworthy to consider the type of rocks that were deposited as part of the stone agglomeration that forms the *cairn*. In this coverage gabbros, diorites and schists were used. While the first two can be naturally acquired in Perdigões, or nearby, the third, the schist, is only available in a 5km radius from the archaeological site. This integration, as occurs in the addition of the *menhir*-like stone, cannot be fully clarified, even so, the importance of schist is not only visible in its usage in the Neolithic schist slabs, but also in three funerary monuments of Perdigões, allowing one to also consider, and highlight, the possible value of these stones.

Summing up, the material assemblage recovered from the *cairn* context (and here one can include not only the artefacts but also the faunal remain and the stones in the coverage), tends to point to quick and intentional, but not fully structured, depositions, where the majority of the sherds, the lithics, the metallurgy and the symbolic elements can be included. Even so, the erosion detected in the Bell Beakers, only noticed in these decorated sherds, can also point to unintentional elements, that might have been associated with the soil where the faunal remains where burnet or even with the earlier soil excavated to the development of the *cairn*. However, in Perdigões, and in other archaeological sites in Alentejo (Valera, Basílio 2017; Mataloto *et al.* 2015), Bell Beakers seems to be almost exclusively represented by sherds, which could imply that the cairn fragments can represent reutilized symbolic elements. This picture points to a general maintenance of the traditions and ideological connections between the human groups and their physical expressions, which is further reinforced by the apparent reuse of artefacts. The identification of materials that appear to have had previous biographies, that are then included in the *cairn* on-going dynamics, reinforces an apparent panorama of continuity, mainly drawn by the artefacts (lithics, ceramics, metallurgy, ideotechnique materials and even by the raw materials), but at the same time creates a contrast noticeable due to the behaviour of the faunal remains and the predominance of wild animals. As such, this assemblage is not only unique in architectonical terms in Perdigões and the Alentejo region, but also because it allows one to confront and put in relation both the tradition and the continuities, and a process of "change in progress", characteristic of the transition between the 3rd millennium BC and the 2nd millennium BC in Alentejo.

It is also noteworthy that the majority of the archaeological materialities were collected in the fillings of pit 79, emphasising its importance and the relevance of the practices associated with it (Cabaço 2017; Basílio 2018) and with the *cairn* in general.

5. Interpretive hypotheses

Perdigões' *Cairn* represents a one of a kind structure in the region at the end of the 3rd millennium BC. As such, and due to its typology, characteristics, chronology and implantation, several usages, meanings and functionalities can be thought of and associated with it. Adding to the physical and architectonical features, the presence of specific artefacts, such as the metal, the idols and the decorated bell beakers, but also the practices that can be inferred from the faunal remain and the presence of chained constructions moments, can contribute for the construction of interpretative models that can reflect, in a sustained way, on the real impact of the *cairn* structure in the groups of the end of the 3rd millennium BC.

In the searching for answers, one must look at the biography of the *cairn.* First, a small depression and two pits were opened, cutting the previous chalcolithic deposits. When both structures were completely filled, a small *menhir*-like stone was added being subsequently covered with a stone accumulation. The intentionality behind this addition is not entirely clear once it can be understood as a mere act of deposition of a stone element devoid of meaning. Nevertheless, acknowledging the different practices that have been identified so far at Perdigões (Valera 2010; 2015a; Silva *et al*. 2014; Valera, Evangelista 2014) and apparently in the *cairn* structure, one can understand the presence of this *menhir*-like stone as the appropriation and manipulation of histories and memories previous to these groups, accepting that this natural/anthropic element has a biography and a value of its own. It serves as a relational link between the ancient materialised realities and the groups of the end of the 3rd millennium BC, being this an attested practice in several funerary contexts with the reutilization of slabs (Bueno-Ramírez *et al*. 2016). Therefore, not only the *menhir* but also the stone structure that covers it, resembling what will soon be the architectures of the local Bronze Age, must be perceived as a set of differentiated biographies and a chain of successive ritualised practices. These, when combined, shape and create meanings, histories and symbolism, that could be decisive for the cohesion and the coexistence of distinct groups in a same shared landscape (Tallentire 2001; Thomas 2012).

This suggestion is reinforced by the characteristics of the deposition that fills pit 79. In this case, one can ask if the fauna deposition is the result of an accumulation of remains/scraps that represent a set of acts and practices of which it no longer participates or, on the contrary, if it corresponds to a formalized and significant process, that integrates, like a stage with specific value, the previous practices, which would justify the phased and formalized deposition?

The signs of exposure to fire, the presence of the most commonly consumed anatomical parts and the identification of anthropic manipulation marks can be linked to ritualised practices of commensality. These feastings can be defined as an emphasised practice or a ritual which focus on the consumption and the sharing of food and drinks beyond daily necessities (Dietler 2011; Dietler, Hayden 2001; Gamble 2017: 17; Thomas 2012: 6; Sanches 2016). It is a relatively common reality in prehistoric and ethnoarchaeological contexts (Benz, Wächtler 2006; Goldstein 2003; Müller 2006; Ralph 2005; Wright 2004; Vilaça, Serra 2016), serving as a tool in situations related with the social, political, economical, relational and ideological spheres of these groups, also having a relevant role in strengthening and establishing a shared social memory (Tallentire 2001). In these occasions, food and drinks played a particular role due to their condition of perishable elements, which would have a limited circulation and consumption range. They can be perceived as a part of the material culture of these groups, which is produced to be incorporated through its consumption (Dietler 2011), being also able to acquire a similar status and value to the ones associated with prestige goods, if one considers that they (food and drinks) cannot be reused, reinvested or displayed (Dietler 2011). They can also act as means of expression (symbols, messages and different identities) associated to repetitive and instinctive activities (the act of eating to survive), generating routines (Bourdieu 1990) like cooking, or even imposing cycles

related to agricultural production (Barker 1985; Bradley 2003). This fluidity and coexistence of values make the border between the domestic or ritual spheres challenging to assess due to the close association between the act of eating, feasting or producing food and the social meanings, expressions, identities and organisations of these groups (Goody 1982; Sahlins 1972).

Adding to the presented panorama, the phased but rapid filling process of the structure and the predominance of wild specimens in the fauna assemblage strengthens the non-daily character of the *cairn* and the existence of a practice script with an active normative component that defines successions. In these "intangible prescriptions", competition processes, such as hunting activities/trips, or even performing arts, like dancing and music, could be included (Gamble 2017: 17; Thomas 2012: 8). One can also assume the existence of restrictions concerning the consumption of specific types or combination of food, that could be reserved for precise contexts, occasions and rituals. This thinkable impositions and scenarios can be extended to the recovered materials, once they can be symbolically relevant by themselves. For example, the formalized deposition of the idols and the allusion to anthropomorphic shapes, the worn polished stone axe, the bell beakers and the symbolic decorated sherds can participate in the construction of the meaning of the *cairn* by accentuating and materialising the relation with the pre-existing practices and realities, extending them in time and in the social memory (Basílio 2018).

These "formalised" artefactual depositions (objects and faunal remains) in pit 79 do not strictly fit into the concept of structured deposition, which application has been shifting throughout the years, because one cannot recognise a specific spatial arrangement or pattern in this deposition. Even so, in the Perdigões panorama, the deposition of faunal remains, in association with ceramic sherds and stones seems to be recurrent allowing one to use the concept of structured deposition at Perdigões if we assume this repetition as a pattern. The original concept was thought by Collin Richard and Julian Thomas (1984) and aimed to make the ritual archaeologically visible by comprehending the relationship between ritual activities (defining everything that does not present a direct utilitarian explanation) and the more "standard" deposition of material culture components. It underwent through several processes of interpretation and "re-operationalisation", in association with the term "ritual", being applied to multiple chronological, contextual and symbolic realities, currently falling under what one can call the "structured deposition phenomenon".

In this sense, the faunal remain from pit 79, can be perceived as reflecting a deposition that presents a specific degree of formalisation, shared with other Perdigões contexts, where the existence of chaining architectonical structuring occurs. This suggests that these communities would have some type of social conventions or "scripts" that could be associated with and replicated in ritual activities similar to the ones that generated them. Even so, one can suggest that food and the action of eating work, in the case of the *cairn* structure, as a catalyst agent for and in social relations between individuals and groups.

On the other hand, the architecture, mainly the stone agglomeration that gives this structure visibility and durability, allows one to question its social role and the intentionality of its creation.

The implantation in the centre of Perdigões is suggestive of the real importance of the stone *cairn* itself, even if one assumes that these groups could face the landscape as a *continuum* (Kuna, Dreslerová 2007: 155). In this location, during Perdigões' 1500 year of occupation, several social and productive practices converge and overlap each other (Valera *et al.* 2014a; 2014b; Valera, Basílio 2017). It is the case of successive architectonical moments, evidence of metallurgical transformation and the deposition of cremated human remains in Pit 40, that belong, so far, to a minimum number of 200 individuals (Valera, Godinho 2009). Those activities are emphasised by the maintenance of the circularity and the astronomical orientation that is respected throughout the constructive processes of enlargement, reduction, and reformulation of Perdigões (Valera 2010). The construction of the *cairn* is not only influenced by the importance of the central area, but it also conditioned by the pre-existing realities that act, as external factors, on the memory of the groups that experienced Perdigões.

Also, the type of architectonical solution to which these groups have resorted to is uncommon, and one can risk saying that is unique, in the area and chronology under study. The recourse and use of stones to "close" pits is not a novelty, being often registered and well-known

in several regional prehistoric contexts, both funerary and non-funerary (García Sanjuán 2006; Soares, *et al.* 2009; Valera 2014). Nevertheless, this is not the case of the Perdigões *cairn* structure. First, as already pointed, it is the result of a sum of different constructive elements (depression, pits, stone carapace), and secondly because it reveals an exceptional investment that brings it closer to the Chalcolithic *cairns* identified in several enclosures in the North of Portugal, namely Crasto de Palheiros (Sanches 2016; Sanches *et al.* 2017) and Castelo Velho de Freixo Numão (Jorge *et al.* 1998-1999), than to the closing practices recognised at some Chalcolithic, and even Neolithic pits. In Castelo Velho, one can highlight the inclusion of human remains as an integrant part of the deposition that is covered by the stone accumulations (Jorge *et al*. 1998-1999), while in Crastos de Palheiros (1st half of the 3rd millennium BC and beginning of the 2nd half of the millennium), the binomial fauna remains and ceramics, including Bell Beaker sherds, as in Perdigões *cairn*, is present, being subsequently hidden by a stone pavement (Sanches *et al*. 2017). Adding to this contexts, one can also consider the small Bronze Age *tumulis*, that are mainly funerary, even so the Chalcolithic practices of ceremonial consumption, the sealing and subsequent action in the social collective memory (Sanches 2016: 101), to which one can add the clear level of monumentality, seem to match to what one can understand from the Perdigões *cairn*.

This term – "monumental" – is usually employed when one wants to refer to dimension and size. Even so, this usage is quite recent, being this variation of meaning attributed to Shakespeare, in its work *Troilus and Cressida*, from 1609 (according to The Oxford English Dictionary). As such, is important to clarify that in its original definition the word monument, derives from the Latin *monumentum* that generally meant something that reminds, a memorial, a record or even history itself. In its Proto-Indo-European root, the verb *monere* (the Latin verb "to remind") can be related to a term that simply means "to think/to remain". Therefore, in the case of the *cairn* and of the present work, the two possible meanings of the act of monumentalise function and add sense to this monument, relating the size of it and the intention of marking the landscape (and the internal landscape of Perdigões), alluding and making it last in space (and memory), regardless of the intention behind the creation of this "encasement".

This circumstance gives it a functional and symbolic plurality. One can question if whether the *cairn* ends a succession of activities in which is an integrant part, with the aim to eliminate the remains of specific practices by closing and excluding them (a rejection closure), or, in an opposite sense, with the goal to perpetuate and preserve the practices, thoughts and meanings in which it participated, making them visible and alive in the social landscape and group memory, through architecture. Even so, it is difficult to recognise and comprehend if the preservation and the valorisation would be directed to the material expressions of the involved practices, like the artefacts, the faunistic remains or even perishable resources, or if it would only be pointed to the circumstances, acts, memories and practices inscribed in the materials and architectures.

In these communities, nothing is entirely new, and most of the practices are essentially prescribed (Bradley 1998: 90), projecting the pre-existing order and ways of doing into execution and repetition processes (Eliade 1999; Sahlins 1985: 12). Nonetheless, those practices always count with a very volatile performative part that reflects and is defined by the context in which people act and interact (Sahlins 1985: 28), being this particularly crucial in the chronology in which the *cairn* structure was built (Valera 2015a).

The transition between the 3rd and the 2nd millennium BC and the first moments of the development of the local Early Bronze Age corresponds to a period where shifts in the social paths are occurring, leading to higher degrees of social differentiation, perceptible in the progressive emergence of individualised funerary practices. Other structural changes can be perceived, mainly the ones concerning architecture, with the abandonment and substitution of the persistent Chalcolithic monumentality, for architectonical invisibility inherent to the use of perishable elements in the Bronze Age (Valera 2015a). Acknowledging these modifications, and regardless the intentionality hid in the *cairn* itself, it would certainly act, due to its architectonical imposition, in the stories and myths of the groups that interacted with it and that visited and experienced Perdigões set of enclosures, shaping and constructing their practices and shared social memories (Tallentire 2001: 199).

The human memory is what makes us who we are, and is constantly on construction, linking the past, present and the future. Is there for shaped and influenced by internal factors, like the individual age, gender, context, emotions and even the sense and perception of oneself in relation to the others and to the surrounding "world" (West, Yassunda 2004), but it is likewise determined by external features, in which one can include the material remains of the previous visitors and the corresponding architectures of these ancestors. It is also socially constituted (Connerton 1989), being sprinkled and mapped by recollections. It corresponds to a long-term record of the practices, contacts, events, successes, and failures (Ingold 1993: 152-153; Knapp, Ashmore 1999: 13; Gamble 2017: 1), encouraging not only imaginative processes, but also stimulating an internal reflexion/perception/understanding of the self and of the group (Barash 2016: 12; Connerton 1989). It is influenced and carved by cumulative factors that combine the economic, social and political spheres (Climo, Cattell 2002; Tallentire, 2001), and it can be revisited, reinterpreted, negotiated, celebrated and modified in public events, congregations and daily practices (Bourdieu 1977). This hypothetical gathering events of several groups that shared the same land, strengthen the existent social relations between them (Meskell 2007: 224; Barash 2016: 13), but also with the ancestors (Meskell 2003; Liesau *et al*. 2014), the landscape and the different identities that existed and co-existed in the same social space (Gamble, Wilken 2008). There is a need to mediation between the individual experiences of each element and the historical memory of the community (Tallentire 2001: 199), creating a coherent identity, ideologies, and cosmologies through celebrations (like feastings).

Hereupon, architectures (in which one can include the *cairn*) in association with the perennial and durable artefacts, can function as an external memory of those moments, practices, groups or even ancestor, by having inscribed senses/memories/practices/meanings that, due to their durability, help to perpetuate and, at the same time, transform. It is in this sense that the *cairn* must be perceived – as a succession of moments, materials, practices, intentionalities and people, whose general meaning cannot be understood in a separated way, but instead derives from the combination of the several apparently "individual" parts that, when put together in relation with each other, create and give sense to the archaeological context and to the site itself.

6. Final remarks

The *cairn* of the Perdigões ditched enclosures complex was presented, at an early stage, as a particularly curious context not only because of its constructive typology, unknown in the second half of the 3rd millennium BC in the region under study, but also due to the type of contextual associations and aggregation of practices, of which it is an integrant part.

In the first instance, its architectural features and its successive constructive moments reveal the apparent existence of a connection, materialised in the combination of the depression, the opening and filling of the pits and the formation of the stone *cairn*. From these built realities, various practices and meanings can be observed and inferred, referring to the more intangible components and circumstances of these groups. The identification of what appears to be the remnants of an act of commensality in which, according to the available data, there seems to be a preference for the consumption of wild specimens, followed by a phased deposition within pit 79, is indicative of the function that this construction would have had at a specific moment in its biography (Cabaço 2017). To these, one can add a set of circumstances that could be wanted, such as the physical and visual action of the *cairn*, closing/completing a succession of practices, which integrates, perpetuating a moment and/or a ritual, by stimulating the memory and later speeches. The *cairn* functions as a way of combining intangibility and ephemerality, where one can include the social, cosmological, and ideological systems of these human groups, with the corporeal and enduring, perceptible in the *cairn* monumentality (size and intention to make others remind).

This evidence is reinforced by other material indicators, among which one can include the mentioned faunistic remains. In addition to these, the presence of the idols stands out, being those associated with the most intangible spheres, and with the identification of sherds with solar motifs and bell beaker decoration. The latter is present in the form of two small fragments (corresponding to one vessel), and not of containers, allowing one to question the intentionality

of their inclusion and the possible maintenance of their value even as fragments, as already questioned for other artefacts (Valera 2010b). Nevertheless, this artefactual combination shows that the *cairn* context would have had a sizeable symbolic significance associated with it, being the symbolism and the inherent meaning emphasised by the central position of the *cairn* in the set of enclosures of Perdigões, and by its contemporaneity with various practices (metallurgical transformation and intensive architectonical transformations) and depositions (cremated human remains and structured depositions).

Also, the chronology of the context itself competes for its distinction from the other realities of Perdigões, corresponding to the most recent context found so far in the enclosure. This monument is built at a particularly critical stage in the social trajectory of these groups, corresponding to the moment when the collapse of the Chalcolithic social realities seem to occur, creating a process of transition where an undefinition and certain archaeological invisibility hangs, contrasting with a generalised sharing of concepts, symbols and narratives in the Chalcolithic, which are justified mostly by the existence of a tradition and vision of the participatory world, visible in the numerous depositional practices identified in Perdigões (Valera 2015a). Thus, the *Cairn* illustrates that in the later phases, remnants of these earlier practices could still be observed. Those could function/represent the maintenance of the previous ideological correspondence, but at the same time, processes of resistance to the changes in progress.

In sum, this late structure emphasises the dependence and complementarity of meanings, symbolism, and functions between the global architecture of the site, the more specific architectures that punctuate it, and a tradition of formalised depositional practices. In more specific terms, concerning the *cairn* structure, it allows one to question the existence of a script and a normative and formalised chain of commensality practices in which the deposition of the remains participates, allowing to propose readings that enter in the always complex field of meanings of the human groups of the end of the 3rd millennium BC.

Acknowledges

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CHAPTER 7

BREAKING METALS AND HANDLING IDEAS ABOUT BRONZE AGE HOARDS FROM WESTERN IBERIA. MATERIAL PATTERNS, INVISIBLE BEHAVIORS AND POSSIBLE INTERPRETATIONS.

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Abstract

The hoarding of metal objects, mainly of copper alloys, reaches a remarkable quantitative and qualitative expression in Portuguese territory during the Late Bronze Age (circa 1200-800 BC), similarly to what happened in Europe. The interest about Portuguese metal hoards increased in the last two decades, partly because of that richness and partly due to the scientific community's acceptance of anthropological approaches that allowed overcoming the traditional theoretical opposition between utilitarian and votive deposits. Studying these hoards allows pursuing many research paths, some with great potential for better understanding the cultural dynamics behind the deposition of metal objects, deliberately concealed by communities and never retrieved.

This text analyses a very relevant but hitherto undervalued aspect of Late Bronze Age Portuguese hoards: the deposition of deliberately broken metal objects. In fact, known findings show that a significant amount of hoards include objects that no longer possess their original technological and morphological characteristics. Therefore, from an economic and pragmatic view of ancient metallurgy, they are considered ordinary scrap. The study, however, reveals a more complex and subtle reality, identifying different depositional models involving broken pieces that show different handling pattern. This paper explores those handling evidences and reflects about the social function of fragmentation practices in the Late Bronze Age of the Iberian West, particularly in Portuguese territory.

Keywords: fragmentation; selection; deposition; metal; Late Bronze Age; Portuguese territory

1. Introduction: concept potential and changes

Metal hoarding and deposition during Bronze Age, especially by the end of that period and transition to Iron Age, is one of the most expressive cultural phenomena in European territory, particularly in the Atlantic Europe. The interest about this practice, having Chalcolithic roots, is translated in abundant bibliography, published since the second half of the 19th century (e.g. Evans 1881; Childe 1930; Hamon, Quilliec 2008). Simultaneously, several scientific meetings were held, pursuing different approaches and revealing how the subject is actual and relevant to the archaeological scientific community[1].

The study of bronze deposition practices (expressed in very different ways in the past, sometimes interlinked or case specific) has been continuously present in the researcher's agenda. Therefore it has been subject to distinct theoretical-methodological approaches, differing analytical scales, supported by contextual and spatial perspectives. Contextual perspectives went through a deep renovation with the combination of typology, archaeometry and micro-topography analysis in artefact studies, thus allowing access to past artisans' gestures and technical know-how. Spatial analysis opened up the interpretive range of interactions between communities and space, or with other communities, through bronze handling.

Depending on the hoards' contents and the site where they showed up, these finds were traditionally interpreted as resulting from economic practices linked to metal production and circulation (founder's or merchant's hoards), or votive offerings (ritual deposits). More recently, however, it was understood that such a dichotomy was no longer able to explain the complex, heterogeneous and ambiguous realities of hoards. Therefore, they began to be seen as entities with an higher dynamic, particularly after the novel ideas of Richard Bradley (1985; 1990) reinforced by the work of many other researchers (e.g. Gosden, Marshall 1999; Whitley 2002; York 2002; Osborne 2004; Joy 2009).

According to this new approach hoards are seen as manifestations of deliberate and intentional actions. Therefore, they would have been formed in accordance to well defined and socially shared social rules, and structured by principles defining what was deposited (and what was disposable), how it was deposited and where it was deposited (e.g. Vilaça 2006: 25-29; Târlea 2008; Bottaini 2012: 257-268). Choosing what was to be deposited implied selection and determining how it was deposited involved metal concealment, which sometimes was deliberately broken, fragmented. The act of depositing could consecrate a place. On the other hand, the existence of a special place would justify that certain depositions happened there and not elsewhere.

In this sense, it is important to emphasize that all hoards are individual contexts, have a specific structure and several other aspects that may give them meaning. These may include the act of depositing, the selection of object combinations (or lack of combinations) and the objects physical state (that is to say, the marks of their' "experiences"), as well as the particularities of depositional spaces (that can be related and connected to other significant places, anthropic or not). Recognizing intentionality allows seeing hoards as a specific type of "structured deposition", similar to other types of object depositions like pottery sherds, animal or human parts, grinders, moulds, etc., a subject that was recently reappraised in depth (Garrow 2012).

This text analyses the phenomenon of bronze hoards in the Iberian West, particularly in Portuguese territory, from the point of view of object fragmentation. It also briefly reflects upon some potential meanings behind it.

2. Hoards in Portuguese territory: brief notes

The study of bronze hoards in Portuguese territory has been less intense than in other European countries. Nonetheless, it accompanied their tendency, registering publications since the second half of the 19th century. The researchers that firstly interpreted these hoards emphasized their earthly nature (e.g. Veiga 1891; Fortes 1902; Pereira 1903; Fortes 1905-1908a;

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[1]Reference should be made to the recent conference: Connecting Worlds Bronze-and Iron Age Depositions in Europe, hosted by the Deutsches Archäologisches Institut at Berlin (19-21 of April 2018).

Viana 1938), and, less frequently, their votive character (e.g. Bettencourt 1988; Silva, Gomes1992; Cardoso 2004)[2].

The first comprehensive overview of this subject, however, was only published in 2006. It was based in the systematization of a great amount of empirical evidences and was greatly invested in conceptual and methodological questions. Some aspects until then understudied were also approached, like the internal context of hoards and their relation to surrounding space, in a global perspective (Vilaça 2006). This work renewed the interest of the Portuguese scientific community in the study of metal hoards. Therefore, more publications on the subject began to arise, providing new readings of old data and retrieving unpublished information. Another large-range monograph work (Bottaini 2012) contributed, amongst other aspects, to reveal the richness of practices expressed in metal depositions throughout the Bronze Age and particularly in its final stage.

Nevertheless, the study of Portuguese hoards has been deeply limited by the small amount of compositional analysis available and by a lack of knowledge about the circumstances of their finding. In fact, most of them are ancient finds, dating before the mid-twentieth century (Vilaça 2006: 30-33), and were individually found by chance, without the presence of archaeologists. These circumstances did not allow recording many elements that would be significant to understand their micro-contexts. In fact, in several cases the information reported is quite vague concerning aspects like: the precise location of the finding, the constitution of the deposit (number, typology, breakage state of the pieces), the observation of structures (negative or positive), the relative disposition of pieces, the presence of other material remains or the presence of charcoal and wooden remains (which sometimes some recordings suggest). In this sense, the archaeology of bronze hoards in Portuguese territory has to work not only with the limitations known to archaeology, but also with the obstacles arising from the peculiar reality here summarized.

Regardless of the many interpretations that this phenomenon may raise, a broad overview shows that the hoards under study are structured very differently. They comprise a dissimilar number and type of objects, the pieces have distinct physical characteristics (newly produced, having use-wear traces, fractured, fragmented, twisted, etc.), the total and partial weight of metal deposited varies, the internal organization and conditioning of pieces (when known) differs, the typological associations are different, as are the places chosen to be the setting to depositional practices and their relation to their surroundings.

An aspect shown by the available data is that almost all types of artefacts were deposited: weapons, tools, ornaments, feasting objects, ingots, as well as axes and palstaves. Having minor exceptions, the objects deposited are mainly locally produced, reflecting the Atlantic world and expressing the deep involvement of indigenous communities in bronze deposition practices. Rarely, however, their morphology refers to other geographical and cultural spheres, like the Mediterranean world (Vilaça 2006: 83). Some examples are two fibulae fragments ascribed to the hoards of Moreira (Viana do Castelo) and Porto do Concelho (Mação)[3], the group of bronze weights from Baleizão (Beja), and the tongs from Cabeço de Maria Candal's hoard, a unique finding of extraordinary importance (Melo 2000: 65; Vilaça 2011: 152; Vilaça *et al.* 2012: 332-334).

The presence of fibulae, weights and other Mediterranean related elements, like depilatory tweezers, iron objects, glass, etc., is also found in habitat contexts (Vilaça 2013), alongside testimonies of indigenous products and their production materials. Thus, it is possible to say that, in Portuguese territory, the process of bronze deposition by indigenous communities was selective and culturally discriminatory. Apparently not all settings were as open to novelties as some habitat contexts. In this sense, Late Bronze Age hoards are deeply closed, conservative and adverse to multiculturalism, being contexts of resistance to Mediterranean influences (Vilaça 2006: 85).

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[2]The range of similar situations is vast. It was partly compiled in Vilaça 2006: 44, to which should be added the cases of two palstaves from Quinta da Comenda (Arcos de Valdevez) (Pereira 1898: 88), ten double looped palstaves from Paul (Covilhã) (Vasconcelos 1917: 328, note 2) and the metallic mould for double looped palstaves found at Vila Boa (Teixeira 1939: 127). Also see Vilaça 2006: 34, 52, 88 and Fig. 50.

[3]For more considerations about the metal sets from Porto do Concelho, Moreira and on the presence of fibulae fragments see, correspondingly, Melo 2000: 64-65; Vilaça 2006: 40-41 and Bottaini *et al.* 2017.

In this respect, Portuguese territory differs from the Mediterranean area. In the Mediterranean the typology of some objects from hoards clearly refers to the Atlantic realm, namely of Portuguese origin (e.g. palstaves, socketed axes and "Rocanes" type sickles from the hoard of Monte Sa Idda, in Sardinia), as shown by the work of Claudio Giardino (1995) and Fulvia Lo Schiavo (2008), amongst others.

3. Fragmentation in hoards from Portuguese territory: evidences and diversity

The presence of deliberately broken, or fragmented, objects is an important aspect of the phenomenon of bronze deposition in Portuguese territory. The concept of "fragmentation" is here used in its broad sense, including different strategies of metal handling. Table 1 is not exhaustive but shows a representative idea of the distribution of fragmented and deposited bronze objects. Those cases where there were reports that finders broke or disfigured artefacts at the time of their discovery were excluded from the table (or are clearly mentioned, like in the case of Cola, see below). Thus, it is important to notice that the quality of data here presented is diverse. In fact the artefacts are geographically scattered, some were lost, and we must emphasize that we did not observe them all directly.

Table 1: Hoards with fragmented objects from Portuguese territory. North: north of the Douro River. Centre: between Douro and Tagus Rivers; South: south of the Tagus River (T: tools; W: weapons; OR: ornaments; OT: others).

Numbers in the Fig. 1	Hoards	Localization	Function (fragmented objects)				Bibliography
			T	W	OR	OT	
1	Carpinteira	North	X				Fortes 1905-1908b
2	Viçosa	North	X	X			Neves 1962
3	Catelinha	North	X				Cortez 1951
4	Cabeluda	North	X				Nunes 1957a
5	Paredes de Coura	North	X				Pereira 1903
6	Areosa	North	X				Monteagudo 1977
7	Lama Chã	North		X			Júnior 1968
8	Solveira	North				X	Bottaini *et al.* 2015
9	Vilela Seca (Barrenhas)	North	X			X	Villas Bôas 1948
10	Valbom	North			X		Lemos 1993
11	Fonte Velha	North				X	Fortes 1905-1908a
12	Lugar do Telhado	North		X			Cardozo 1971
13	Abelheira	North	X				Sarmento 1888
14	Vila Cova de Perrinho	Center	X	X	X		Brandão 1963
15	Ferreira de Aves	Center	X				Veiga 1891
16	Quarta-Feira	Center	X				Melo *et al.* 2002
17	Moura da Serra	Center	X				Nunes 1957b
18	Coles de Samuel	Center	X		X		Bottaini *et al.* 2016
19	Quinta do Ervedal	Center	X	X		X	Villas Bôas 1947
20	Pinhal do Urso	Center	X				Kalb 1998
21	Marzugueira	Center				X	Coffyn 1985
22	Cabeço de Maria Candal	Center	X	X			Vilaça *et al.* 2012

23	Reguengos do Fetal	Center				X	Ruivo 1993
24	Porto do Concelho	Center	X	X	X		Bottaini *et al.* 2017
25	Fonte de Alviela	Center	X				Vilaça 2006
26	Casal dos Fiéis de Deus	Center	X	X	X		Melo 2000
27	Cacilhas	Center/South		X			Silva, Gomes 1992
28	Évora	South		X			Brandherm 2007
29	Alqueva	South		X			Cardoso *et al.* 1992
30	Safara	South		X			Vasconcelos 1915
31	Castro da Cola	South		X			Vilhena 2006

The empirical data allows observing the following:

i) Concerning geographical distribution, hoards with fragmented objects follow the pattern already outlined for hoards in general (Delibes de Castro, 2007: 16), being mainly concentrated in central and northern Portugal (Fig. 1);

ii) Only in the south of Portugal there is some sort of preference for fragmenting certain metal object types, the weapons, whereas in other regions the objects fragmented are typologically more diverse;

iii) In the same hoard several typologies of fragmented objects may occur (e.g. Viçosa, Quinta do Ervedal, Casal dos Fiéis de Deus, Porto do Concelho, etc.);

iv) The cases where the same hoard presents more than one fragment of the same piece are a minority (e.g. Vila Cova de Perrinho, Herdade do Sobral da Várzea);

v) Fragmentation occurs in hoards with multiple objects of the same type (e.g. Paredes de Coura), in those showing different typologies (e.g. Solveira, Freixianda) and in individual depositions (e.g. Cacilhas);

vi) Technologically, the objects deposited may be ternary alloys (e.g. Abelheira) or binary alloys (e.g. Solveira, Freixianda, Coles de Samuel) (Bottaini 2012);

vii) Fragmentation is not limited to used objects (although sometimes they were intensely used), or ready to use objects (e.g. the tongs from Freixianda, the axes from Coles de Samuel) and it also occurs in seemingly newly produced and unfinished objects (e.g. the casting jet from Abelheira);

viii) While in the North of Portugal most cases correspond to the deposition of a single type of fragmented metal objects per hoard (usually palstaves), in the Centre, there is greater typological/functional diversity;

ix) There are no known hoards that exclusively present fragmented objects, unlike in other regions of the Atlantic world.

4. Discussion: to break, to mutilate, to select, to gather, to deposit

The presence of broken objects in Bronze Age metal hoards or in other type of contexts has been discussed by several authors (e.g. Nebelsick 2000, Bradley 2005: 161-163, Gabillot 2004, Perea 2008, Tarbay 2017; Brandherm 2018), remaining a topic insufficiently studied in Portuguese territory.

The first information to keep in mind is that nearly all metal formal types known in the region on which this work focuses have been fragmented, being this phenomenon particularly evident in the period ranging between the end of the 2nd and the beginning of the 1st millennium BC, similarly to other European regions (Bradley 2017: 133). The fragments of palstaves and

socketed axes which were deposited were either the hafting ends or the blades (e.g. Vilela Seca, Paredes de Coura, Coles de Samuel, Quinta do Ervedal, Cabeço de Maria Candal). Similarly, the parts deposited from sickles of both Rocanes and socketed types were the blade edges (Porto do Concelho, Coles de Samuel) or the hafting ends (Moura da Serra). The same situation is shown by the flesh-hook from the hoard of Solveira, with one of the prong that was broken (Bottaini 2012: 54-55) (Fig. 2).

Figure 1 - Distribution of hoards with fragmented objects.

As for as swords, they can be restricted to the hilt or to the distal end. However, concerning the latter, the deposition of blade point fragments is predominant, meaning that the hilts had some other destination[4]. Consequently, it is difficult to identify predefined and recurrent models of fragmentation within the same functional types. The fragmentation pattern vary across different artefact categories, as is also shown by spearheads, for example (see below).

A second problem to highlight is that the concept of fragmentation, in its strictest sense, is too narrow to describe all the realities observed. In fact, in certain cases the objects were not only broken, but were cut (with a chisel or by friction), bent, twisted, deformed, subject to fire, mutilated or desecrated. In other words, they were intentionally damaged in different ways, leaving deep marks, superficial ones, or only light cracks, as consequence of the destructive actions. Actually, as Bradley has recently stated "breaking or damaging objects was a very different process" (Bradley 2017: 130).

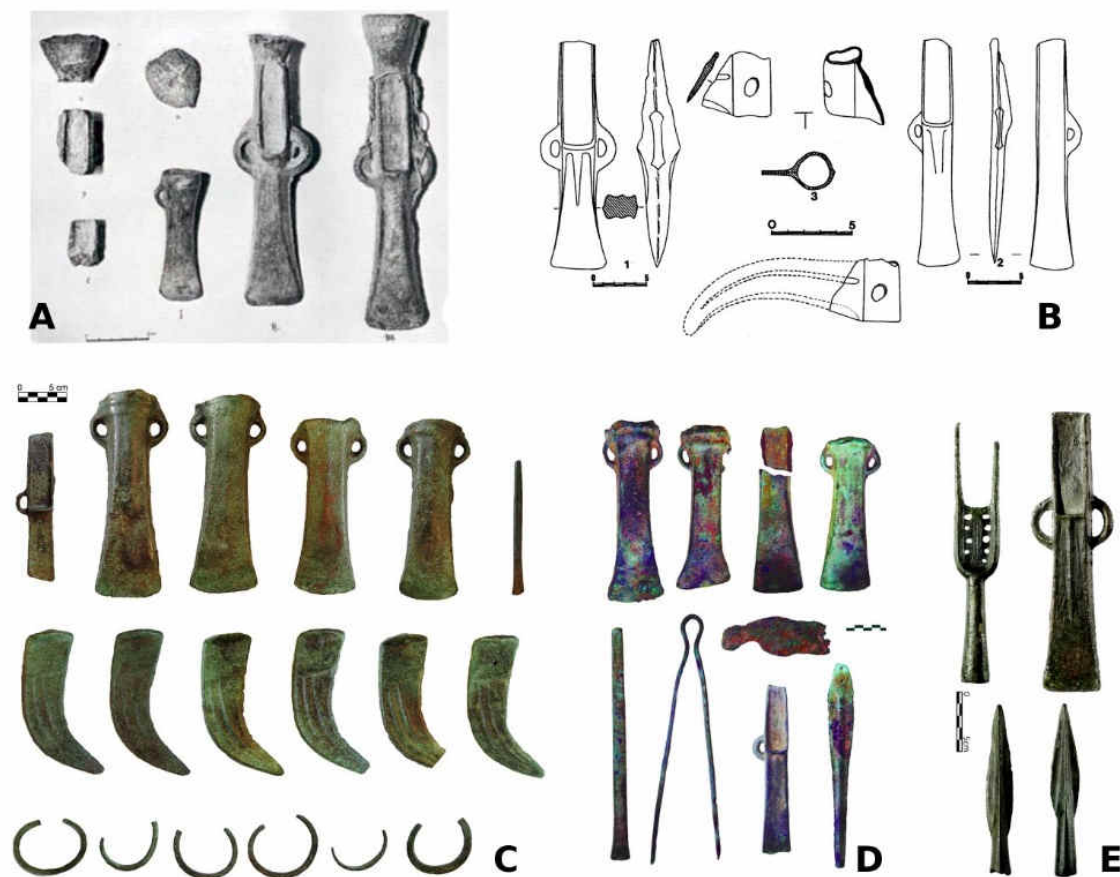[4]See Brandherm 2007 for more detailed references on swords.

Figure 2 - A) Barrenhas or Vilela Seca hoard (according to Villas-Bôas 1948, Lám. 2); B) Moura da Serra hoard (according to Coffyn 1985, planche XLIII: 1-3); C) Coles de Samuel hoard (according to Bottaini *et al.* 2016: 346); D) Cabeço de Maria Candal hoard (according to Vilaça *et al.* 2012: 305); E) Solveira hoard (Photo credit: MDDS, Braga).

Figure 3 - The flat axe from Sabugal showing deep cuts on the blade edge and marks on the sides (Photo credit: Museu do Sabugal and Bruno Santos).
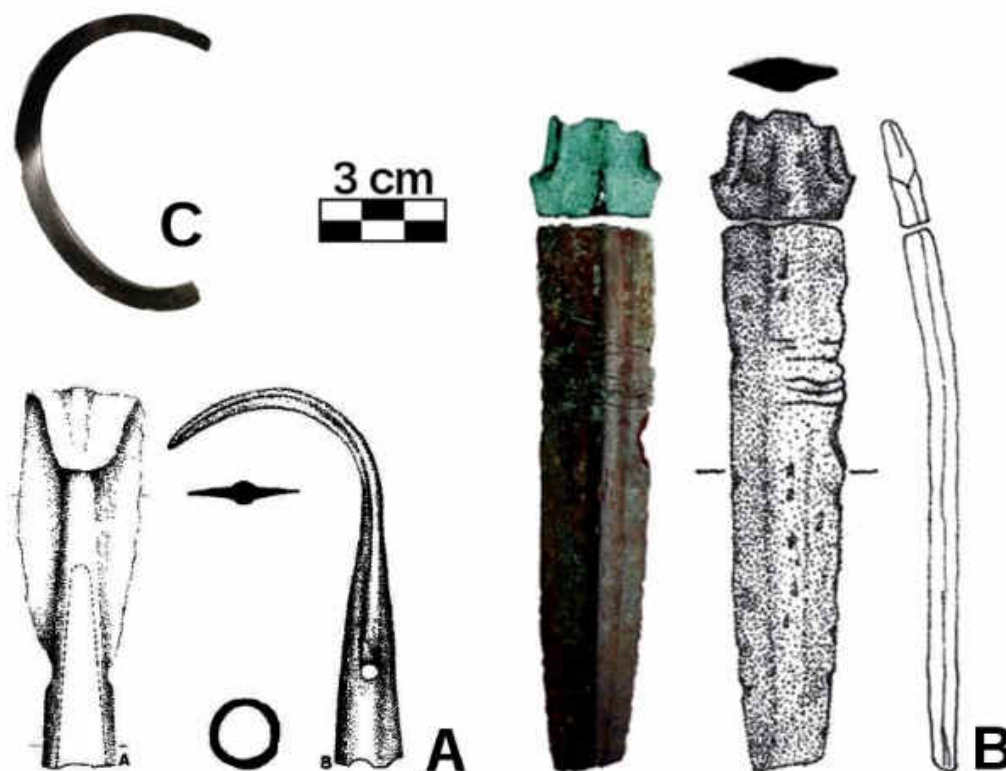
Figure 4 - A) Spearhead from Baiões (according to Silva *et al.* 1984: 102); B) Dagger from Vila Cova de Perrinho (according to Bottaini *et al.* 2011: 31); C) Bracelet from Porto do Concelho (Photo credit: Carlo Bottaini).

According to Nebelsick (2000), such deliberately violent actions of metal objects' destruction were part of the ritual practices of LBA, although they may have had an earlier origin. The flat axe from Sabugal is interpreted in accordance to this perspective. It was collected in unknown circumstances (in that village or its surroundings) and was found violently destroyed. The object is complete but shows deep cuts on the blade edge and several other cut marks on the sides (Fig. 3), revealing the brutal aggressiveness it was subjected to without an apparent practical purpose.

Besides fragmentation and mutilation, violence upon artefacts was exerted in other more subtle ways: certain objects were physically deformed. An example is one of the spears from Baiões. It was very carefully folded in a controlled way so that it would not break (Fig. 4A) (Silva *et al.* 1984: 102). On the contrary, one of the daggers from Vila Cova de Perrinho (Fig. 4B), equally folded, had a fracture and marks of that action in the middle of the blade, showing violent cracks. Furthermore, physical deformation is shown in one of the bracelets from Porto do Concelho. The bracelet was twisted, also without apparent practical reason (Fig. 4C).

Concerning the spearheads, in the cases of Bouças (or Monte Viçosa) (Melgaço) (Coffyn 1985: planche XXXVI) only the blades were deposited. The spearheads from Penedo de Lexim (Mafra) (Arnaud *et al.* 1971; Sousa *et al.* 2004) and Porto do Concelho (Bottaini *et al.* 2017) show cracks in the blade and in the socket, a condition also found in other hoards exclusively composed of spearheads. It is the case of the hoards from Lama Chã (Junior 1968) and Lugar do Telhado (Cardozo 1971) (Fig. 5), whose spearheads showed visible cracks in the sockets, along the blade edges and at the point.

The cases described above are undoubtedly intentional, since their creation required technical expertise and skill in fragmentation and distortion. Nevertheless, it isn't always easy, or possible, to identify the origin of some marks. It is undeniable that they are related to different fragmentation models, implying that the reasons behind fragmentation must have been equally different.

Fragmentation is performed to condemn an object, as a social strategy. But is fragmentation also done to recycle? Or is it because artefacts were already broken (by other reasons) that their fragments are sent to recycling? These situations are very different because they imply different purposes at their roots. In the case of recycling, the extensive analysis of empirical data and contexts clearly shows that the size of broken parts is not adequate to the capacity of crucibles. They are always quite small and could only have been used to melt small pieces (Vilaça 1998: 354-355 e fig. 2).

Either natural breakage or intentional fragmentation produces object fragments and fragmented objects. These different results imply different degrees of fragmentation, which may also be important in understanding the actions and motivations for fragmentation.

Let us now focus on one of the most remarkable and symbolic creations of the Bronze Age: the swords. An approach that combines different scales, macroscopic and micro-topographic, shows a huge diversity of situations and, therefore, of motivations. Some researchers (e.g. Kristiansen 2002; Quilliec 2008: 81-83) observed that the intensive use of swords blunts the points, produces cracks in the blades and small cuts on their edges; the breakage of a sword's blade in half (leaving the rest intact) reveals an accidental action, possibly resulting from combat; if there are many separate fragments it reveals that actions were intentional, regardless of the motives.

Some LBA swords from Portuguese territory illustrate these features. For example, the swords from Vilar Maior, Elvas, Safara, Évora and Cacilhas (Fig. 6A-E) have no point. They maintain physical identity but not their integrity, since the points were damaged or show intensive use. Intensive use is also visible in blade irregularity as is shown by a short sword preserved at the Museum of Lousã and found somewhere in the Centre of Portugal (Vilaça, Lima 2006). A similar case comes from Tapada das Argolas (Fundão) (Vilaça *et al.* 2002-2003). The blade fragment shows wavy dents (Fig. 6F) that reveal its effective use in defence or attack in a violent context of real confrontation or parade.

A second sword from Évora was split in half. The hilt was left intact and the blade fracture line shows signs of bending, revealing that breakage was forced (Fig. 6A). The sword from Castro da Cola was also bent when it was found (Fig. 6G). However, it was straightened against a large stone by its finders (Vilhena 2006: 78). In those cases the objects are usually complete. Nevertheless, in hoards that present several types of artefacts, such as Quinta do Ervedal or Porto do Concelho (Fig. 6H), sword fragments seem to be "lost" from their other parts, which are missing. According to these fragmentation and selection patterns, it is admissible that not all parts of an artefact might have had the same value. Thus, only some were mutilated and preserved. The mutilation of the points and blade edges in weapons (and axes) takes on a special meaning, since it would cancel their practical efficiency. Therefore, it would physically condemn them, eliminating their function and even sacrificing them.

On the contrary, fragmentation and preservation of swords' hilts may show the high practical and symbolic value of that weapon. Bradley (2005: 155) suggests that hilt preservation could be explained by it being the closest part to the owner, thus remaining as a relic while the remainder would become recycling material. The remainder, that is, the blade, is the part that kills or confronts and, therefore, should be destroyed.

As seen, artefact selection for deposition comprises complete or undamaged objects and fragmented ones. Such a selection involved separation, either by removing objects from their previous contexts, or by setting aside some fragments from the remaining object parts, which are now missing. The latter have followed unknown destinations, impossible to control. Many were possibly recycled, others deposited, or even re-deposited. Therefore, fragmentation creates different fragment biographies.

In this regard, Bradley reports the finding of two fragments from the same sword in different locations, separated by a river (Bradley, Ford 2004). Both fragments mark different spots in the landscape, because they were placed on top of distinct mounts, which, nevertheless, could see each other. Thus, although fragmented and separated, the connection between the two parts of the same sword was emphasized by the sites chosen for each deposition. The authors then use the concept of "*enchainement*" (Chapman 2000) to propose that these two fragments could symbolically establish a relationship between two people, between two communities, between

their life histories. By enacting this relationship both parts would be reunited. This concept is inspired in ethnographic studies from Melanesia and values the connection between objects (with their mnemonic, metaphorical and metonymic references) and people (having their own life histories). Since its application its implications have been subject to interesting debates (e.g. Brück 2006).

The diversity of fragmentation in Portuguese territory is also characterized by the union of distinct object parts in the same depositional contexts. Although some hoards do not have intact objects, the whole object is sometimes present in its broken parts: the objects are complete, although fragmented.

The most recent example came from the reappraisal of the hoard from Herdade do Sobral da Várzea (Santiago do Cacém). It includes two bronze flat axes that were complete, but divided in four fragments (Soares *et al.* 2016). It should be highlighted that, in each case, the fragmentation model created a fracture that divided the blades in half.
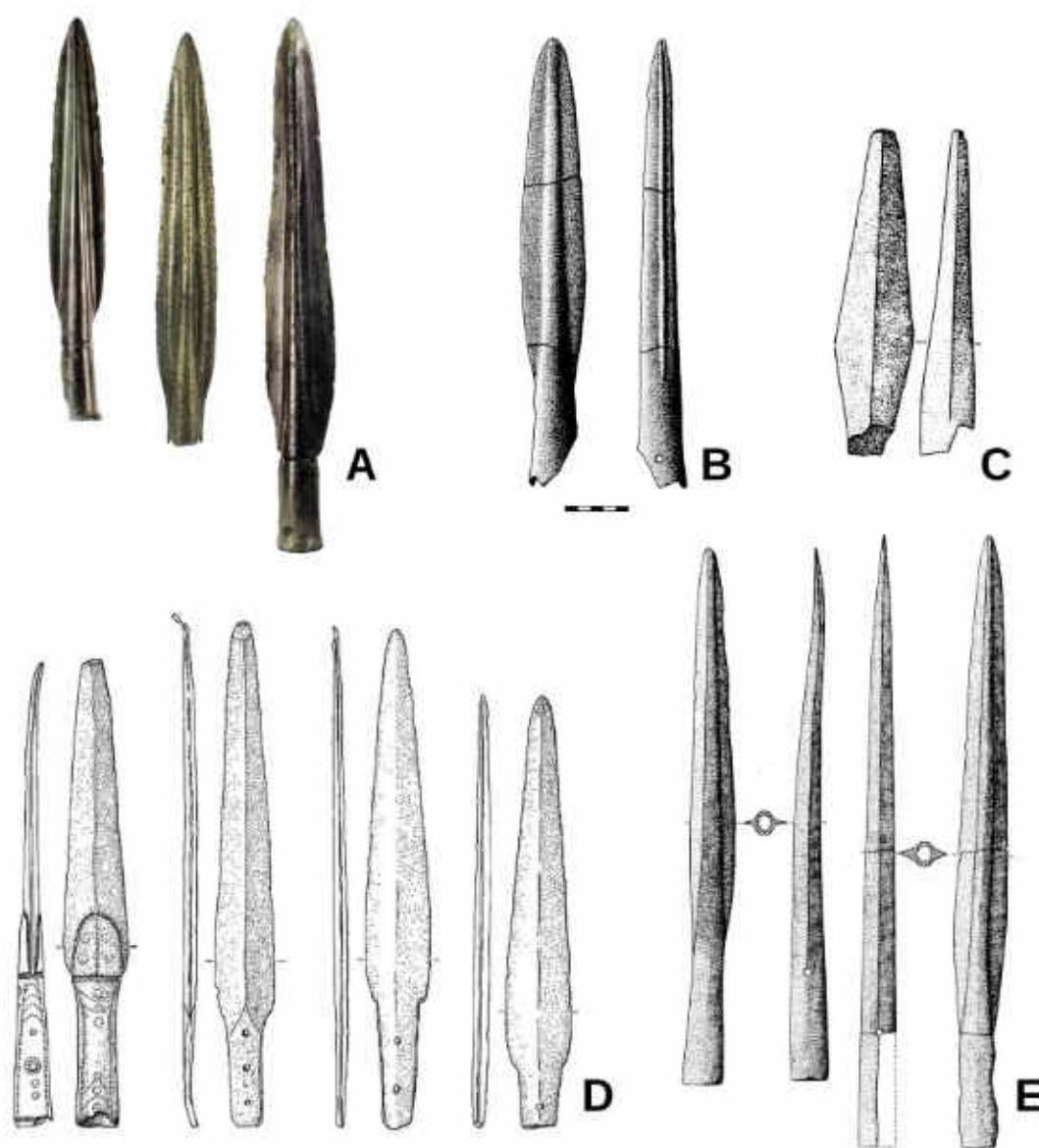

Figure 5 - Spearheads from Porto do Concelho (A) (Photo credit: Carlo Bottaini), Penedo de Lexim (B) (according to Sousa *et al.* 2004: 113), Viçosa (C) (according to Coffyn 1985, planche XXXVI: 6-8, "Bouças"), Lama Chã (D) (according to Kalb 1980: 41) and Lugar do Telhado (E) (according to Coffyn 1985, planche LII).
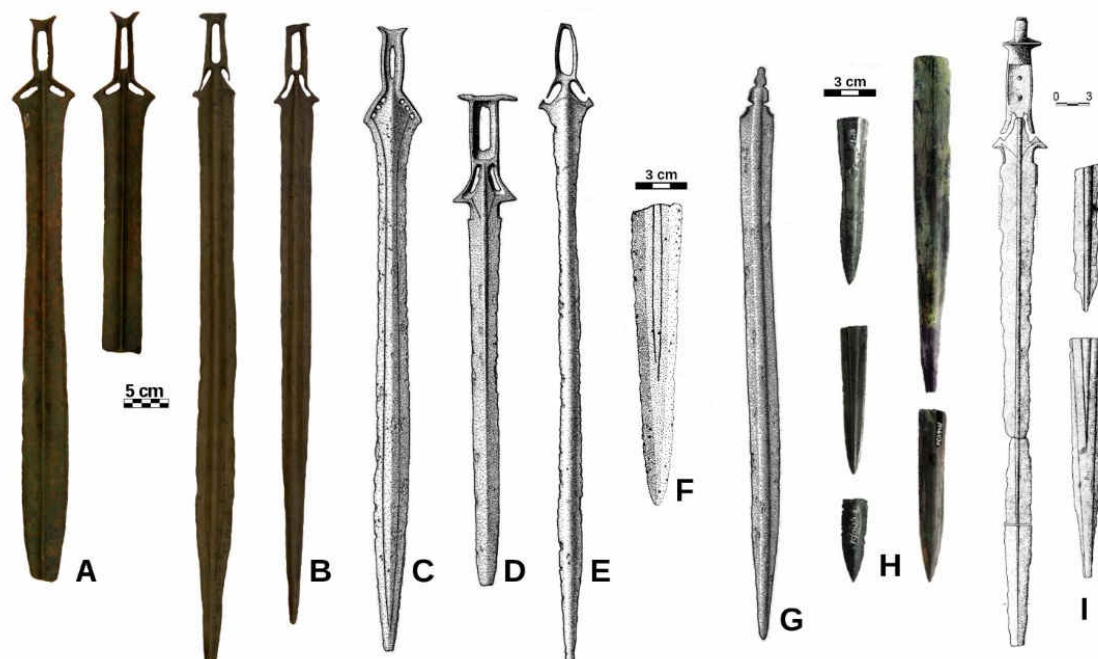
Figure 6 - Swords from Évora (A) (Photo credit: Carlo Bottaini), Safara (B) (Photo credit: Carlo Bottaini), Vilar Maior (C) (according to Brandherm 2007, lámina 3: 18), Elvas (D) (according to Brandherm 2007, lámina 27: 166), Cacilhas (E) (according to Brandherm 2007, lámina 7: 35), Tapada das Argolas (F) (according to Vilaça *et al.* 2002-2003: 185, modified), Castro da Cola (G) (according to Brandherm 2007, lámina 28: 176, "Nossa Senhora da Cola"), Porto do Concelho (H) (Photo credit: Carlo Bottaini), Casal de Fiéis de Deus (I) (according to Coffyn 1985, planche XLVII, modified).

Another equally revealing case is the sword from the hoard of Casal dos Fiéis de Deus. This hoard has many unique characteristics, as Ana Melo (2000) rightly emphasized in an important study. The hoard contains weapons (swords and a dagger), ornaments (bracelets) and tools, specifically a fragmented axe. One of the swords (now restored but missing the point end) was divided into three blade fragments at the time of its finding (Vasconcelos 1919-1920). The three fragments were not scattered and, on the contrary, were (re)united in the same deposition context, despite being physically separated from each other (Fig. 6I).

The reunion of broken parts in a single context was therefore also practiced by communities at around 3000 years ago. This practice is the opposite of the one described before. Therefore, fragmentation strategies may involve fragment mobility, but also the opposite, that is to say, fragmentation without dispersal.

Also noteworthy is another manifestation of the complexity of this phenomenon: the intentional union of distinct objects, literally involving a "chaining" mechanism. The objects are whole but required physical union to express new meanings. This situation is testified by three pieces from the hoard of Quinta do Ervedal (Fundão). The hoard stands out within Portuguese deposits due to the large amount of objects, 43 (complete or fragmented), with 16,759 kg of metal (bronze and copper) (Villas-Boas 1947; Coffyn 1985). Amongst other complete and fragmented objects, plano-convex ingots, there is a single looped palstave and two open rings with overlapping ends, one of which shows incised decoration. The rings are chained together and one of them is hooked to the palstave loop. Such a union mutually invalidates the practical function of each object (Vilaça 2006: 81) and it also connects functional and conceptually distinct objects as a single entity. Cases like this are quite unusual and, in the Iberian Peninsula, there is only another known example, comprised by two axes from the hoard of Arroyo Molinos (Monteagudo 1977: 182, 261, Tafel 123). However, this exceptional characteristic also happens across Europe, since it was reported, for example, in the Hungarian hoard of Dunaújváros-Kosziderpadlás (Hansen 2016: 186).

Certain objects experienced a clear metamorphosis, shown by fragmentation, deformation, use wear and violent use marks. Their transformation, however, can be expressed still in another way. As many other authors, we agree that recycling was a recurrent practice in the Late Bronze Age. Recycling, however, was not limited to recasting and could also comprise repurposing old objects into "new" objects or "*outils de seconde intention*" (Boutoille, Milcent 2006). In fact, reclaiming metal that is seen as raw-material not to be wasted also encompasses the adaptation of old objects, or their fragments, into new objects. The latter are then naturally limited by the shape of the previous ones. For example, there are evidences of such a metamorphosis in the dagger from the hoard of Cabeço de Maria Candal (Ourém) (Fig. 2D). In this case, prior to being a dagger, the object was a sword blade point, possibly of a "carp tongue" type (Vilaça *et al.* 2012). The same seems to have happened with the small dagger from Tapada das Argolas, which was also adapted from a sword fragment (Vilaça *et al.* 2002-2003).

The physical transformations that created these "new" artefacts may have been merely opportunistic or circumstantial, as it seems to be the case of a small dagger fragment of the Porto de Mós type, found at Castro do Cabeço da Argemela (Fundão) (Vilaça *et al.* 2011). Although dated to the Late Bronze Age, it showed up in a use context of the 2nd Iron Age. It may have been salvaged and used, without recasting, due to the value of metal at a time when bronze was difficult to get.

As to the dagger from Cabeço de Maria Candal, it raises a broader range of interpretations, ranging from those strictly utilitarian to others reflecting the symbolic character or historiographical charge that swords acquire when they are seen as "noble weapons". The metamorphosed sword was reborn, having a different appearance at a new stage of its life-cycle. In other words, its "cultural biography" (Kopytoff 1986, Gosden, Marshall 1999) was still in the making.

5. Final Remarks

This paper aimed at organizing some data about the presence of deliberately cracked, broken or incomplete objects found in Late Bronze Age hoards found in today's Portuguese territory.

The evaluation of empirical data showed, in the first place, that despite past social habits concerning what was deposited and the places of deposition, today it isn't possible to recognize a general pattern explaining the fragmentation of deposited bronze artefacts. The lack of a recognised general pattern also results from the many methods used to cancel the function of objects (e.g. folding, breaking, twisting, marking, repurposing, etc.) and to the fact that destructive actions occurred over the edges, the points, the blades, the hafting parts, etc.

A second aspect to notice is that there doesn't seem to be any formal type whose function is more frequently cancelled, neither there are object types whose fractures show up exclusively in specific parts. Swords are exemplary in this respect. They were deposited in many conditions: whole, without the point, limited to the point and usually having blades with a wavy profile.

It is also important to keep in mind that the diversity in fragmentation strategies and their structural contexts go well beyond the idea that breaking was performed in order to recycle. This is not the case in many examples, as was shown. Conversely, metal (and other objects) fragmentation should be seen as a social practice, allowing people to express their "being" in the world through handling broken objects and object fragments in many ways.

A final remark is necessary to highlight that intentional fragmentation was planned and, therefore, would not be within everybody's reach. On the contrary and as noticed by other researchers, fragmentation (seen in the broad sense that this paper assumed) required technical expertise. In fact, metalworkers were, probably and simultaneously, object creators and changers.

Acknowledgements

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