# Aligning People:
# The Social Impact of Early Neolithic Medialities

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***Abstract:*** With increasing sedentism, many early Holocene communities of Southwest Asia experienced an unprecedented increase in medial priming, in various ways and on many levels. Here, we combine new research from the social neurosciences and investigations on mediality to trace the social impact of early Neolithic symbolism in Southwest Asia. We have analysed three case studies: the sedentary hunter-gatherer-fisher communities from Northern Mesopotamia of the 10th to 9th millennium BCE as well as the village farming communities of the Levant and Central Anatolia of the 9th to 7th millennium BCE. Our studies show that the increase in medial priming was not linear, but was rather driven by changing social conditions and human decisions concerning how to address the social challenges of increasing population densities. The novel mediality supported new relationships between people and places, between past and present, and strengthened new interpersonal relations. Outwardly similar symbols had different effects in varied social contexts. In the long run, we have observed a shift from integrative relations between humans and nature, to the dominance and representation of human groups, as well as a greater use of symbols within domestic households. Ever since this shift occurred, symbols have played a crucial role in creating commitment and aligning people.

***Keywords:*** Early Neolithic, Southwest Asia, social neurosciences, medial priming, iconic power

## Introduction

At the beginning of the early Neolithic in Southwest Asia, *representations* of symbols[1] increased exponentially as monumental architecture, elaborate burial rituals and expressive figurative symbols emerged. The clear increase in such representations was not only due to a greater use of stone, resulting in better preservation of building ornamentation and artefacts, but also to the more intensive working of various raw materials to create artificial forms such as sophisticated tools or prestige objects, or even to imitate natural objects such as animal teeth (*e.g.*, Alarashi 2014; Belfer-Cohen and Goring-Morris 2017; Benz *et al.* 2019; Vasić 2020; Gebel *et al.* 2022). An increased demonstration of symbols and symbolic behaviour can be observed during this period, above all in architecture and ritual remains. These fundamental changes in mediality (Benz and Bauer 2013; Morenz 2014; Benz 2017) offer enormous potential for new insights into early Neolithic societies. The novel mediality created new relationships between people and places, between past and present, and possibly also strengthened new interpersonal relationships. The style of monumental architecture and the nature of the symbols allow us to discriminate between different modes of symbolic creation of communal memory in Southwest Asia during the early Neolithic. The new quality and quantity of symbols indicate the social and psychological challenges with which these early sedentary communities had to cope. The quality of the rituals and imagery testify to the deep roots of these communities in the Epipaleolithic, but they also mirror social and ethical innovations that go far beyond the more flexible social networks of small-scale communities.

For a long time, archaeological interpretation of prehistoric symbols has adhered to the methods of semiotics and iconology (*e.g.,* Schmidt 2006; Morenz 2014; Dietrich and Notroff 2016), often struggling with Panofsky's first level of interpretation: the "primary or natural subject matter" an image was meant to represent. These difficulties prevented many interpretations of prehistoric imagery proceeding to the second and third level, wherein the meaning of an image and intentions of the artist are considered. Approaches guided by structuralism have always searched for binary structures, implicitly assuming that identical relational and structuring principles are maintained in different contexts (*e.g.,* Hodder 1990; Cauvin 1997). New approaches to the agency of images, such as the capacity of imagery to influence people's minds and moods, have been largely neglected in archaeology (Merleau-Ponty 1964; Boehm 1994, 2010; Gell 1998; Sauerländer 2012). One of the reasons for this may be the strong paradigm of cultural relativism. This paradigm emphasises the uniqueness of individual perception and behaviour, as well as of cultures, and categorically rejects the search for anthropological commonalities. Within cultural relativism, social environments become prime factors in the formation of social and personal identities (*e.g.,* Durkheim 1912; Berger and Luckman 2016). In contrast, ethological, medical, neurobiological, and psychological approaches emphasise the existence of basic patterns of emotional and biologica l reactions common to many humans, even when their personal characteristics, experiences, and socialization lead to considerable differences (for a rare application of such an approach see *e.g.,* Müller-Neuhof 2019). Phenomenological approaches (*e.g.,* Tilley 2004) have been dismissed as unscientific. The obvious subjectivity of such approaches makes it impossible to replicate empirical evidence.

Support for the idea that human communities were first and foremost influenced by environmental and material contexts has been provided by the new theory of materialism, which is essentially based on the ideas of Pierre Bourdieu (2009) and Bruno Latour (Knappett 2005; *cf.* Boivin 2008; Hahn and Weiss 2013). This contextual approach explores the relationships between visible and invisible things and analyses the means by which human communities create their identities, binding human agency in a more or less tightly knit "meshwork" (Ingold 2010), or within "entanglements" (Hodder 2012). The constraints and affordances these relationships create can lead into "path dependencies", a concept developed in the field of economics during the 1970ies (for a review see Witt 1997). Adaptations of this approach in archaeology have led to models of co-evolution (Rindos 1990). The more socially oriented path-dependency models granted greater agency to humans (Benz 2000). However, in most of the models on Neolithisation, human agency and intentionality have been neglected, thereby veiling patterns of behaviour that are common to almost all of us, and also obscuring the creativity inherent in human behaviour.

In this paper, we will reintroduce these two specifically human dimensions – our common human nature and the creative agency of humans – to aid in the interpretation of early Neolithic symbolic systems. These anthropological perspectives may help us to understand the social meanings of symbols in different contexts, and the enormous challenges that growing sedentary communities presented to Neolithic people. The contextual approach allows us to differentiate between the various strategies they used in order to cope with these challenges. Our transdisciplinary approach combines the results of social neuroscientific research from the last 30 years, with a phenomenological focus. It is based on observation of material remains without written sources, respecting the deficiencies and limitations of archaeological sources, as well as on the multivocality and intersubjectivity of symbols (Gillespie 2010; Blumler 2013). As Robert Layton (2007: 49) has pointed out: "Even within a single community … meaning is constantly negotiated." Therefore, we do not aim to reconstruct the specific content of any one narrative or the meaning of isolated symbols. Instead, we are seeking to identify recurrent patterns of symbolic behaviour. Our focus lies with the impact and relevance of symbolic behaviour. A detailed study of mediality will provide decisive clues to aid our interpretation of the early Neolithic symbolic systems. Studies on mediality include investigations into the materiality of media, and how people used various media. The main areas of this research are the frequency of symbols, their ubiquity (meaning the presence of symbols in various media), the degree of standardization, and their reflexivity (meaning their potential to interfere with media). 'Biographies' of artefacts and their cultural-historical contexts (Hermansen and Gebel 2004; Gebel 2010) provide important evidence regarding the social relevance of symbols.

As stated elsewhere in detail (Benz 2017), symbolic communication is comprised of enacted and encoded symbols. The nature of symbols, as well as various personal qualities and interpersonal relationships, influenced how symbolic systems were incorporated into Neolithic life. The archaeological sources for investigating symbolic representation are manifold, ranging from skeletal evidence to burial processes, magical practices, rituals, and imagery. Comparing these different overlapping aspects of symbolic behaviour may provide evidence for the social relevance of symbolic action and thereby offer new insights for the social relevance of symbolic action and its role in prehistoric communities.

It is beyond the scope of this overview of Neolithic symbolism to examine all the contents and levels that might otherwise be expected in a micro-regional study. Thus, for the illustration of our new approach, we have chosen three contrasting case-studies: The early Pre-Pottery Neolithic communities of Northern Mesopotamia, the Middle to Late Pre-Pottery B village farming communities of the South-Central Levant, and the Late Pre-Pottery Neolithic B and early Pottery Neolithic communities of Central Anatolia. The contextual analyses of these three examples will show how outwardly similar symbols might have had different social impacts. Our investigations will be restricted to burial rituals, art, and architecture.[2] Before describing the archaeological records, the relevant discoveries of neurobiological research are outlined briefly below.

**Neurobiological Basics**

Five aspects of human biology form the basis of our method.

1) Premature birth: compared to newborns of other higher mammalian species, humans are born premature (this does not refer to irregular preterm births, but rather the fact that humans are born incapable of independent movement, feeding and so on) and are completely dependent on assistance (Piantadosi and Kidd 2016; Bauer 2019). At first sight, this may seem like a drawback. However, it actually represents one of humanity's main advantages. In order to cope with premature birth, humans have used several strategies:

a) To attract attention and create commitment, caregivers and newborns had to establish a special relationship based on mirroring and resonance (Waytz and Mitchell 2011; Meltzoff 2013; Bauer 2019). On this basis, beyond early childhood humans develop a high degree of empathy. Pro-social behaviour has evolutionary advantages and is rewarded by positive bodily reactions (Fredrickson *et al* 2013; Bauer 2021). Humans primarily aim at social community and cooperation, whereas social deprivation is experienced akin to pain and results in aggressive reactions (Eisenberger *et al.* 2003; for a review, see Bauer 2008, 2011).[3] These empathic (intuitive and cognitive) capacities allow humans to communicate, interact, and socialize on much higher

levels than any other primate (Tomasello 2009). Nonetheless, modern humans – as has been shown by Dunbar and his team on a worldwide scale – have a rather fixed upper limit of the number of people (~ 150) with whom they can keep close contact. Communities crossing this number need special rules, media, or forms of control to avoid fission (Dunbar 1992, 2013; Gowlett *et al.* 2012). b) Due to their physical and mental immaturity at birth, humans are born to learn: their capacities to imitate, interpret, memorize, and recombine information appear to outstrip those of other species. Dependent on how much and what they learn, the brains of children, but also of adults, are in constant transformation ("neuronal plasticity": Eisenberg 1995; for a review, see Bauer 2015a). This adaptive capacity makes human intelligence outstanding, and allows for the intergenerational accumulation and transmission of knowledge. Against the background of the intrinsic desire for social acceptance and reward (Point 1a), it can also become one of their most vulnerable points: the possibility to influence the human mind by external stimulation, deeply and over an extended period, facilitates mental indoctrination.

2) Shared evolutionary legacy of humanity: evolution is a continuous, but very slow, process. We therefore assume that the basic functions of our contemporary brains do not differ from the brains of *Homo sapiens* during the Neolithic period, although the cognitive capacities developed during a human's lifespan were different, due to differing tasks, affordances, and exigencies (Eisenberg 1995; Bauer 2015b). Evolutionarily older, limbic parts of the brain, where emotional reactions are processed and stored, should react in similar ways in all humans, even though they are (generally) subject to the top-down control of the neocortex. The neocortex primarily serves as the area where acquired knowledge and competences are stored. In particular, the self – and its relationship to the social world – is constructed in the prefrontal cortex (PFC) (Kelley *et al*. 2002; D'Argembeau *et al.* 2007; Kitayama and Park 2010; D'Argembeau 2015; Bauer 2019). Recent neuroimaging studies have shown that, in humans, the neuronal networks that are activated when we think about ourselves overlap with networks that are activated when we think about significant others (Mitchell *et al.* 2006; Jenkins *et al.* 2008; Krienen *et al.* 2010; Ma *et al*. 2012). From a neuroscientific perspective, an individualistic identity is thus a mirage. It is impossible to think about the self without mentalizing others. In other words, the personal self is always a social self. We experience ourselves to a great extent as we are (and have been) seen by significant others. The social groups to which we belong possess an implicit power to impose their views on us, in such a way that we think these views are our own (Bauer 2019).

3) Priming of emotions, socially shared affects, and emotional contagion: there exist at least four basic emotions (happiness; anger/ disgust; fear/ surprise; sadness) inherited from earlier stages of evolution common to almost all humans. Many studies have shown that these emotions are reflected in facial expressions and can be recognized with high accuracy by others (Ekman 1992; Eskine *et al.* 2012; Jack *et al.* 2014; *cf.* Gendron *et al.* 2014). The ability to mirror and become 'infected' by emotions and bodily states (see Point 1a) enables most humans to assess and experience the mood of others (Waytz and Mitchell 2011). In communities with a strong social self-consciousness, there exists an expectation that both intuitive and cognitive empathic skills will be high. Joy and sadness are distinguishable worldwide and can be discerned by the vast majority of humans, with the exception of certain neurodiverse individuals. Not only laughing and crying, but also anxiety, yawning, and even pain are contagious (Hutchison *et al.* 1999). Moreover, watching, listening to, or even just imagining non-neutral pictures, sounds, or experiences might cause bodily reactions in the recipient. In combination with the transmission of meaning onto objects (Point 4 below), the presence of such things (a song, a picture, or any other symbolically laden thing or activity) may act as stimuli and trigger emotions, including reactivated emotions that were experienced in earlier times and other places. These intuitive aspects of empathy thus make humans sensitive to emotional contagion and "priming" – the external manipulation of emotions (*e.g.,* Kay *et al.* 2004; *cf.* Doyen *et al.* 2012). Fear is one of these basic emotional reactions. It is well known that anxious people are more willing to abide by rules and to follow leaders than those who exhibit greater courage (Krohne 2010). Behaviour and emotions influence the flow of the body's endogenous messenger substances (neurotransmitters), which may then further influence (albeit unconsciously) our perception, decisions, and behaviour (*e.g.,* Domes *et al.* 2009; Eisenegger *et al.* 2011; Graustella and MacLeod 2012; Jiménez *et al.* 2012; Lischke *et al.* 2012; Wittig *et al.* 2014). Experiences, biological bodily reactions, and behaviour are thus dialectically interrelated (for a summary see Franks and Smith 1999 with further literature). Emotions (and the attempt to influence them) play a key role in socialization (Bauer and Benz 2013).

4) Reflexivity: The prefrontal cortex (PFC) distinguishes human brains significantly from other primates. The dorsal parts of the PFC enact self-observation and enable humans to think reflexively. Together with the self-other overlap in the ventromedial PFC, this enhances our capacity to reflect upon what others might think ("theory of mind") (Waytz and Mitchell 2011; for a review see Bauer 2015b). Human behaviour is therefore not only steered by automatised reactions and social environments, but also by individual reflexive thinking and intentionality. The human perspective tends to ascribe this intentionality and agency not only to other living beings, but also to things and natural processes. Things can thus be symbolically laden with narratives, or with social or personal identities, blurring the artificially drawn segregation between things and beings. Things can store information independently from personal transmission by relying on conventions (what has been called "extended/ distributed mind") (Donald

2001; Renfrew 2005; Dunbar *et al.* 2010; Bauer 2018). 5) Memory: memorization is more than a controllable or conscious act, in that it can be deeply rooted in the body and reactivated in certain circumstances. Highly arousing, rhythmic, or unexpected events and personal experiences are remembered more actively than monotonous, passive observations, or routines (Watkins 2012; Páez *et al.* 2015; Rennung and Göritz 2015, 2016; Wightman 2015; Tambini *et al.* 2017). Memories (even unconscious memories) might influence human behaviour for a lifetime (Bauer 2015a). Moreover, memorization is a social act, determined by the individual's capacity for memorization but guided by social experiences, expectations, relationships, and perspectives (Connerton 1989: 37). Personal memory can even be changed retrospectively if it does not match with a generally accepted view of past events (Edelson *et al.* 2011). The capacity to influence and enhance collective memory is thus key in creating loyalty and social commitment.

**Cognitive and Emotional Impact of Imagery**

The consequences of these five points for the impact of symbolic behaviour are evident. Due to the plasticity of the human brain, environments – whether social, artefactual or natural – influence humans considerably. The extraordinary human capacity for imitation, and their desire for social acceptance empower idols, habits, traditions, and social structures to play a major role in the formation of personal and social identities. Infants begin to formulate an idea of their self in the first years of life, in the first two years mostly operating within dyadic relationships (Tomasello 2009; Meltzoff 2013; Bauer 2016, 2019; see also Courtney and Meyer 2020). Within Neolithic *habitus* communities, according to the meaning proposed by Gebel (2017), it is to be expected that social self-constructions are dominant and that socialization into the group holds a high value and plays an important role.

Pictures as well as recurrent magic and ritual practices can prime people, meaning they can influence people's perception, emotional and bodily reactions, and their behaviour. This does not necessarily imply (but may facilitate) a top-down education, wherein some kind of 'elite' manipulates or instructs members of a group. The wish to be socially accepted is a primary human instinct (Insel 2003). The motivation to become a respected member of a group may promote the willingness to adopt cultural rules and norms. Rituals, considered here as symbols-in-action occurring within a special framing, and as structured communal events they were probably more intensively memorized than daily practices (Brosius *et al.* 2013; Rennung and Görtiz 2015, 2016). With the increasing use of material things as symbols, these things became more important for displaying (or faking) social (and to a minor extent also personal) identities and belonging, irrespective of factual commitments, skills, or preferences (Steffens *et*

*al.* 2013). We consider the formation of identities as a multifaceted process: identities are never monolithic or static, but rather multiple, contextual, intersubjective, and in constant transformation (Benz 2017).

The high capacity of humans for emotional contagion, which is one (but not the sole) component of empathy, makes them sensitive to the manipulation of their emotions by various media: most effectively by other humans (or their representations), but also by music, colours and light, architecture, or symbolic devices that can activate emotions and memories. Processes of contagion occur when emotions or emotionally-associated symbols are communicated to others. More than this, they might transform individual feelings into collective experiences. Having outlined these anthropological characteristics, it can be suggested that the impact of symbols does not only depend on their actual content, but also to a great extent on the social context in which they are used, and the emotional impact they provoke. Certain types of mediality may promote the attribution of agency to things, but irrespective of outward appearances, loading things with meaning remains a socio-cultural or even personal choice. Once a symbolic system has been established, small reminders suffice to activate the whole paradigm via associative thinking.

To conclude these theoretical considerations, it should be emphasised that we will never be able to describe potential individual reactions of people who lived more than nine thousand years before the present. However, even if we simply succeed in grasping some broad trends, this might nonetheless provide valuable additions to existing interpretations of Early Neolithic symbolism.

**Neolithic Symbolic Systems in Context: the Evidence from Three Case-Studies**

Valuable and impressive examples of Neolithic symbolic systems are given in recent reviews (*e.g.,* Helmer *et al.* 2004; Morenz 2014; Belfer-Cohen A. and Goring-Morris 2017; Becker *et al.* 2019, Cartolano n.d.). We have chosen the three best known regions and periods for our case-studies, to illustrate our method and provide evidence on possible regional and temporal differences in the use of symbols during the Pre-Pottery Neolithic in Southwest Asia. The earliest case-study examined here is Northern Mesopotamia, with its megalithic architecture and figurative symbolism (Çelik *et al.* 2011; Erim-Özdoğan 2011; Hauptmann 2011; Schmidt 2011; Mazurowski and Kanjou 2012; Yartah 2013; Stordeur 2015; Karul 2020). The second case study analyses the mega-sites and other contemporary settlements in the Levant (Nissen *et al.* 2004; Byrd 2005; Gebel *et al.* 2006; Kinzel 2013; see also the articles in Bienert *et al.* 2004 and Kuijt 2000), and the latest case-study presented here consists of the village farming communities of Central Anatolia (for an overview see the articles in Özdoğan *et al.* 2012). The

| | Northern Mesopotamia ~ 9600-8800 cal BCE | Central and Southern Levant ~ 8300-6800 cal BCE | Central Anatolia ~ 8500-6500 cal BCE |
|---|---|---|---|
| **Cultural context** | (Semi-) sedentary hunter-fisher-gatherer communities; incipient cultivation and animal management (?) | Village farming communities with high pastoral shares | Village farming communities |
| **Material** | Increased use of stone in ornaments, symbolism and architecture; bone, shell, ochre (red and yellow), gypsum, antler/ horn cores | Clay, lime plaster, shells, few, but increasing use of (exotic, semi-precious) minerals, colour pigments, few wall paintings | Clay, bone/ horn/ antler, colour pigments, wall paintings, semi-precious minerals and shells for ornaments |
| **Ubiquity** | High | Low | Low, except for Çatalhöyük |
| **Visibility** | High | Low | Low in public spaces, high in domestic spaces at Çatalhöyük |
| **Frequency** | High | Low in imagery, high in burial rituals | Low, except for Çatalhöyük |
| **Scale** | Megalithic to miniature | Life-size to miniature | Almost all sub-life size, except for plastered animal skulls. |
| **Reflexivity**[4] | Low in megalithic imagery and stone vessels, but highly impressive rituals of communal house burying and deliberate destruction of objects. | Unless there were no taboos, middle to high but remains difficult to assess[5] | High in art, low in domestic architecture |
| **Style** | Figurative and geometric; emphasis on powerful/ dangerous animals and parts of animals (*e.g.,* claws, teeth, horns, and beak), threatening postures. | Dominance of geometric designs, few figurative sculptures, sub-life-sized human figures | Figurative and geometric; emphasis on powerful/ dangerous parts of animals (claws, horns and beak) |
| **Standardi-sation** | Locally high standardisation of architecture, motif patterns and designs with regional adaptions; high differentiation in burial rituals | Low, many ad-hoc items | Individualistic in style, but high in social structuring principles (*e.g.,* segmentation of houses); differentiated household corporate identities |
| **Degree of represented sociality** | Individual, with few exceptions, emergence of corporate identities and duality | Individual and collective, duality | Individual in the frame of corporate household identities; duality and collective activities in art |
| **Use of symbols** | Public and in-house burial rituals; deliberate fragmentation and burial of things, communal or personalised (?) memory tokens | Public and domestic, in-house burial rituals; caching and hiding of complete objects; Personalised | Domestic, in-house burial rituals; overplastering of animal skeletons in domestic units Personalised |
| **Animal representations and motif combinations** | Dominance of wild animals, snakes/ water/ lightning, birds, foxes, boars, feline predators; few scorpions, spiders, insects (?), aurochs, wild goats and sheep, abstract symbols and geometric patterns, very few humans and unidentified animals. | Dominance of geometric designs; few figurative representations in form of human and animal figurines. | Humans and animals; collective activities with humans surrounding isolated animals; dominance of cattle, geometric motifs; some bear, leopards, birds, sheep, boars; few deer, fox, and weasels modelled in clay. |
| **Human representations** | Few; in imagery, humans are integrated in the animal world; on special sites such as Göbekli Tepe incipient human emancipation/ mastery of the animal world; possibly: humans in metamorphose, but without weapons, few exceptions. | Focus on human representations in figurines and skull plastering; | Dominance over animals evidenced by incorporation and display of animal parts in the house and in imagery; humans with weapons |

Table 1    Summary of medial aspects in the three investigated regions and periods. Information given is based on the following sources. For Northern Mesopotamia: Ibáñez 2008; Coqueugniot 2014; site reports in Özdoğan *et al.* 2011a, 2011b; Mazurowski and Kanjou 2012; Miyake *et al.* 2012; Miyake 2013, 2016; Özkaya *et al.* 2013; Yartah 2013; Abbès 2014; Stordeur 2015; for the Levant: Kenyon 1981; Grindell 1998; Rollefson 2000; site reports in Bienert *et al.* 2004; Nissen *et al.* 2004; Byrd 2005; Goring-Morris 2005; Gebel *et al.* 2006; Kuijt 2008; Schmandt-Besserat 2013 and for Central Anatolia: Hodder 2006; site reports in Özdoğan *et al.* 2012.

main characteristics of symbols found in these three regions are given in Table 1. It should be emphasised that our selection of case-studies does not claim to stand for a general trajectory of people becoming aligned by means of communally accepted symbolic systems. Our hypotheses will need to be tested against future evidence, and more refined evidence, from prehistoric communities.

### *The Symbolic and Territorial Alignment of People – the Example of Communities from Northern Mesopotamia in the 10th and Early 9th Millennium*

The earliest Holocene communities in Northern Mesopotamia witnessed a considerable increase in figurative symbols, as well as the emergence of monumental stone architecture. Here, many of the animals depicted by sculptors were male, and were shown in threatening postures, displaying their natural predatory and offensive features: panthers, hyenas, and boars present their sharp teeth and/ or claws, while bulls display their horns (Fig. 1; Helmer *et al.* 2004, Peters and Schmidt 2004). Birds are represented with sharp beaks, occasionally holding human heads in their talons; snakes crawl across vessels, heads, and pillars, and scorpions appear on stone pillars, vessels, and bone platelets (Schmidt 2010, 2011; Stordeur 2010; Hauptmann 2011; Hodder and Meskell 2011; Bauer and Benz 2013; Siddiq *et al.* 2021). At first sight, waterfowl and foxes do not seem to fit into this imagery. Although some of the foxes show their male genitals, they are not depicted as predatory or aggressive. A worldwide comparison of animals related to shamanic beliefs and practices has shown that waterfowl, snakes, birds, and foxes can act as supporting spirits in shamanic rituals since they are able to cross the spheres, water (underworld), earth, and air (heaven) (Benz and Bauer 2015). The depiction of a fox above the elbow of the anthropomorphically formed eastern central pillar in enclosure D at Göbekli Tepe is most interesting in this respect (Fig. 2). It creates the impression that the fox had been tamed. Moreover, the loincloth of the same anthropomorphic pillar appears to be made of a fox pelt (Schmidt 2010: 244-245).

Appropriating and reclaiming the power and skills of these dangerous and sometimes lethal animals might provide the appropriator with respect and esteem, but the situation could also become fatal if control over these powers were lost. The act of representing these animals in a ritual context may suggest some kind of mastery and may have served to establish – or at least contribute to – the power of the represented humans. However, the relationship remains ambivalent, since encountering such predatory or aggressive animals in the wilderness was naturally dangerous. Similarly, in shamanic rituals the shaman[6] faces dangers and risks



Fig. 1    Priming of emotions: the selection and attitudes of the animal depictions at Göbekli Tepe would possibly have evoked awe in ritual participants, as well as pride at being part of a powerful community that was able to master these animals. (Photo: N. Becker; DAI Orientabteilung)



Fig. 2    Neither waterfowl nor foxes seem to fit into the repertoire of threatening animals. In later and more recent shamanic contexts, they often act as supporting spirits. Central pillar of Enclosure D, Göbekli Tepe, holding a fox in his arms and standing on a row of birds. (Lidar Scan: Hochschule Karlsruhe, DAI Berlin)
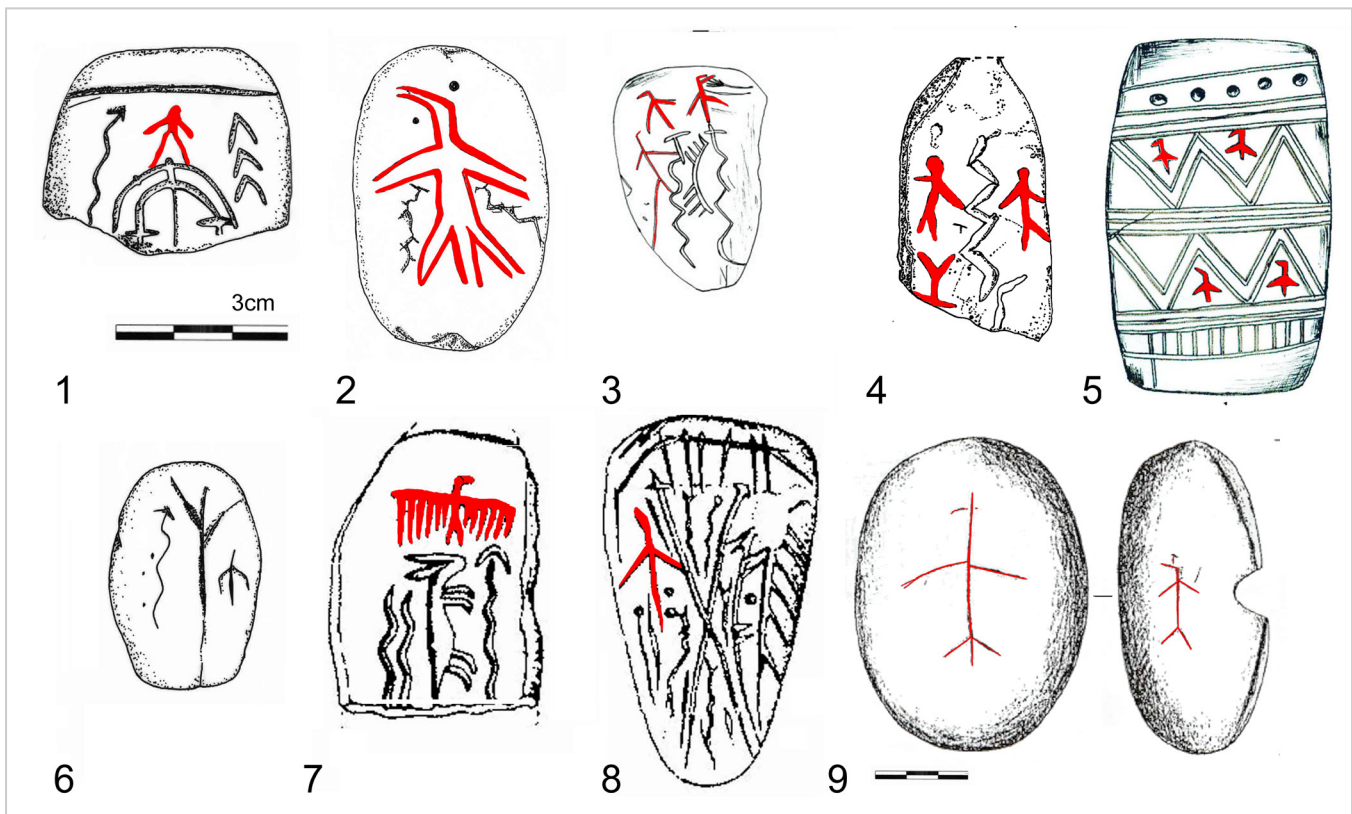
Fig. 3    Humans or birds? The combination of birds and/ or humans with snakes is a recurrent theme (*cf.* Fig. 4.2). None of the chlorite plaquettes are identical: 1-5 - Tell 'Abr 3 (Yartah 2013: 182.3, 185.3, 187.1-3); 6 - Göbekli Tepe (Köksal-Schmidt and Schmidt 2007: 107); 7-8 - Jerf el Ahmar (Stordeur 2015:4.3-4) and Tell Qaramel (Mazurowski and Kanjou 2012: Pl. 72.2). All are reproduced at the same scale, except N° 9. (Modifications: M. Benz)

his own life. During his ritual trances, he meets with malevolent powers in order to liberate an individual or community from illness, perhaps a curse or bane, or bad fortune.

It is important to remember that none of the represented animals were domesticated during this period except the dog, and that these species were also not preferred game: most of the animal bones found at Göbekli Tepe were from gazelle, and most of the meat came from aurochs (Peters and Schmidt 2004). Red deer, onager, goats, and sheep were rarely depicted, although they too contributed to the diet. The imagery may have had an instructional character, but may also point to a possible mythological or shamanic context (Schmidt 2006, 2010). The relationship of these animals to humans as displayed in the imagery provides further clues for the interpretation of the relationships between humans and their natural environments (*cf.* below).

The monumentality of the "special buildings" in these communities and their megalithic style contrast strongly with the small contemporary domestic buildings (Özkaya and Coşkun 2011; Schmidt 2011; Stordeur 2015; Yartah 2016). The placement of monumental architecture on hilltops possibly allowed them to function as territorial markers (Sütterlin and Eibl-Eibesfeldt 2013; *cf.* Braun 2021). The segregation of special ritual buildings, which created and prescribed a certain order, governed movement within the building, and controlled

access to ritual places (John 2010) indicates that ritual activities were possibly restricted to a selective social group. The high level of local standardisation in ritual architecture and symbolic design, as well as the low reflexivity facilitated by these media, impeded any form of individual flexibility and indicated emerging corporate or predetermined social identities (Benz *et al.* 2017).

Individuality is displayed in burial rituals and in the use of small stone plaquettes. The latter were probably made using sherds from chlorite vessels, which were deliberately destroyed during highly arousing, possibly noisy burial rituals (Benz *et al.* 2018). Most of the small stone plaquettes have a unique design, though these designs do recombine motifs from a common repertoire (Fig. 3; for more examples see Benz and Bauer 2013). A series of plaquettes with almost identical figurative designs is exceptional in its representation of an enigmatic unidentified animal. The series was discovered in one grave at Körtiktepe (Özkaya and Coşkun 2011: Fig. 31). Recently, two plaquettes with the same motif were discovered around 60km away at Gusir Höyük (Karul 2020: Fig. 17), indicating remarkably close regional relationships. The intentional destruction of stone vessels during burial rituals transformed the sherds "into important meaningful and symbolic elements" (Verhoeven 2013: 24). It seems clear that these artefacts would have helped to maintain and enliven personal memories. Moreover, about 400km to the west of Körtiktepe, at Tell Qaramel and Tell 'Abr 3
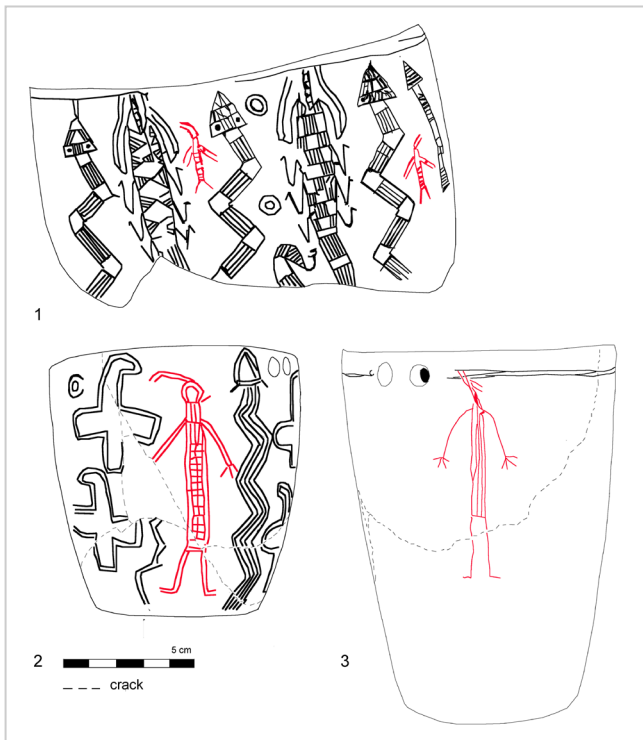
Fig. 4 Representations of humans on different stone vessels from Körtiktepe. Despite differences in engraving style and in the size of the human figures, the main characteristics are represented clearly: a long coat and some kind of headgear. Note that Fig. 4.3 is represented with a beak-like mouth (*cf.* Fig. 3.2). (Drawings after Özkaya and San 2002: Fig. 3; Özkaya *et al.* 2013: 58; Benz *et al.* 2016: Fig. 7b; modifications: M. Benz)

in northern Syria, isolated sherds from the specific and elaborate Körtiktepe vessel type with concentric circles were discovered (Mazurowski and Kanjou 2012: plate 83.7-8; Yartah 2013: Fig. 34). However, no identical complete vessels have been found at any of these sites to date, but only smaller examples in a less elaborate form and style (Benz *et al.* 2018). Possibly these sherds were saved – similar to the stone plaquettes – from burial rituals as tokens of memory, recalling spatially and temporally distant communal events, as well as social belonging that could overcome spatial distance.

However, without further investigations into the biography of these artefacts (provenience, production, usage and disposal contexts), such a scenario remains speculative.

Animal representations are dominant in figurative design, not only in terms of frequency but also in terms of size. Human representations are rare (see below for the exception of Göbekli Tepe). They are very schematic but interestingly, a particular form of headgear, a long coat, or a special kind of movement were significant attributes, which were represented even in tiny sketches (Benz and Bauer 2015) (Fig. 4). At Körtiktepe and at Göbekli Tepe, none of the human representations holds a weapon or other object. There are only two exceptions from Tell 'Abr 3, one on a stone slab and another on a small chlorite vessel (Fig. 5). Both representations show a possible hunting scene (Yartah 2013: Fig. 173; Fig. 194.3). Most of the humans are depicted enacting some kind of movement, holding the arms stretched outward from the body (shamanic/ dancing gestures?; Özkaya and San 2004: Fig. 3b; Miyake 2013: 45; Özkaya and Coşkun 2013: 32; Özkaya *et al.* 2013: 58, 61; Yartah 2013: Figs. 173, 182.3, 194.3; Stordeur 2015: Fig. 3.2); most of them are represented in isolation moving through a universe of animals that are larger than themselves. A recurrent combination is snakes, humans, and birds, whereby it is not always possible to distinguish human representations from those of birds. Perhaps this ambiguity was deliberate, and was meant to indicate some kind of identification with birds as human alter-egos, or perhaps as guiding or supporting spirit animals that were significant to shamanic practices (Schmidt 2006; Benz and Bauer 2015).

Göbekli Tepe provides contrasting evidence on many of the above points: here, the anthropomorphic design of the stone piers encircling the two central anthropomorphic pillars suggests both shared leadership (duality) and communality. The size of the pillars (max. 5.5m) at Göbekli Tepe is almost three times the estimated size of contemporary humans. Their stature is static and calm. However, neither the pillars nor the human depictions on the stone vessels here seem to have a personal identity: their faces remain anonymous. They
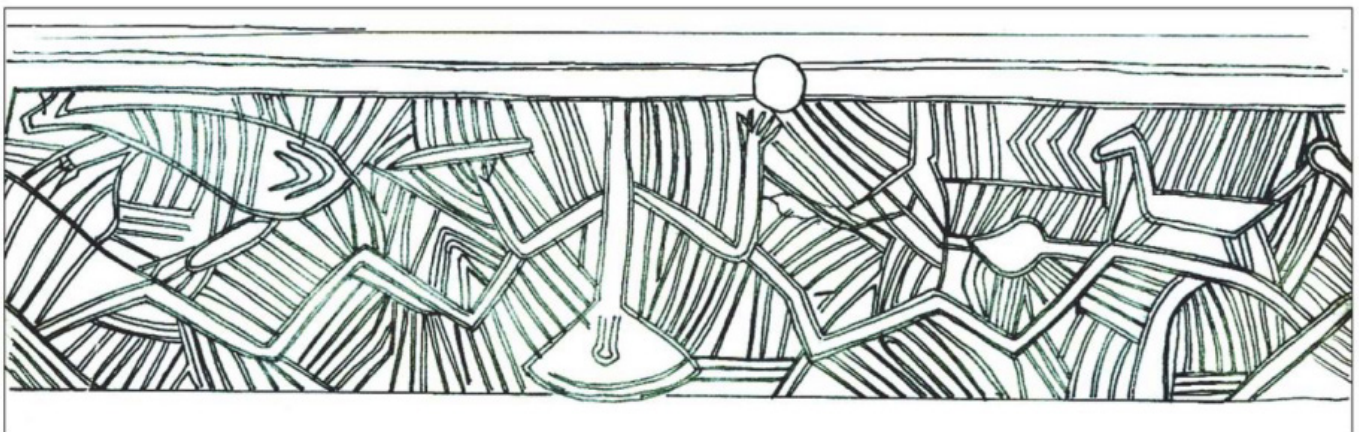


Fig. 5 Hunting scene from Tell 'Abr 3: this is a rare exception within the imagery of early Pre-Pottery Neolithic communities (Yartah 2013: Fig. 194.3, drawing: T. Yartah)

thus probably represented a certain type or role – indicated by the dress mentioned above – but not individual, personalised group members (Schmidt 2010: 244). It seems that at Göbekli Tepe, humans started to consciously differentiate or emancipate themselves from the animate world, although humans and animals were still intensively interwoven. This might point to the changing role of ritual leaders and to the emergence of traits which are characteristic of religion, such as authority and dogma, in some communities (Gebel *et al.* forthcoming). The increasing emphasis on group events (rituals?) with some kind of organisation is also seen in some depictions on small stone objects from Tell 'Abr 3 (*cf.* Fig. 4.3-5).[7]

Overall, this first example shows deep symbolic roots in a holistic, animistic[8] world view. Humans are represented as integrated into and interacting with the real or conceived world of animals. The "special buildings" convey a strong contrast to this world view on several levels: their monumentality, the emerging corporate identities, spatial segregation, and standardisation, as well as the fixing of symbols in stone and the strong differentiation of ritual space from domestic areas would have facilitated the establishment of shared convictions (or dogmas) and initiated a dominant role for those who controlled the medial tools. This is in contrast to the typical open-access territories, high social and spatial flexibility, opportunistic behaviour, and equality that are considered characteristic of small-scale, mobile hunter-gatherer communities. Differences between the ideas encoded in imagery and daily life are clearly visible (Bauer and Benz 2013; Benz *et al.* 2016).

Extraordinary events, such as the smashing of stone objects during burial rituals (Benz *et al.* 2018)[9], communal gatherings at remote sacred places (Dietrich *et al.* 2012), and the deliberate burning and backfilling of "special buildings" (*e.g.,* Özdoğan and Özdoğan 1998; Schmidt 2006; Coqueugniot 2014; Stordeur 2015; Karul 2021; *cf.* Kinzel *et al.* 2020)[10] would have created intense impressions and lasting memories. We therefore suggest that symbols were used to increase each individual's commitment to permanent, ever larger groups by creating strong episodic communal memories and marking territorial claims using monumental architecture. The monumentality of the buildings, and the low reflexivity of the symbols fixed in stone that these buildings allowed, contributed to the permanence of transgenerational social identities. This mediality also created the impression that changing this prefigured 'world' was only possible with great effort (deliberate destruction of things or 'interment' of buildings). The high frequency with which the same symbols appeared over a wide region, and the ubiquity of these symbols across various media sustained the naturalisation of the symbolic system.[11] The unifying symbolic system may be taken as indirect evidence for the need to bond larger groups of people. A strong symbolic system can of course promote coherence within the group, but at the same time it creates distance from others who do not use the same system. However, it should

be emphasised that none of the early Holocene depictions here shows an unfriendly encounter or any conflict between different social groups. This is in strong contrast to many depictions originating from Bronze Age communities in Mesopotamia where coordinated armed conflicts are a recurrent theme.

The social and psychological challenges of groups with more than 150 members have been outlined above. The presence of unambiguous figurative motifs also reflects these challenges. Irrespective of social and individual backgrounds, many people would have been able to grasp the basic meanings of these motifs. However, the deeper significance of the abstract signs representing these meanings (for example, those on the belts and dresses of the anthropomorphic stone pillars), as well as the complete narratives connected with them, were probably only understood by those who were in some way initiated or specially educated.

The emphasis on the dangerous aspects of the animals depicted might reflect two intentions: on the one hand, carving animals in stone clearly displays the technical mastery of the artist or of the group (Bauer and Benz 2013). Creating something dangerous, even if only in a representational or symbolic sense, may transfer the power of the dangerous object to the artistic master. On the other hand, the use of the symbols (especially those based on birds, snakes, and predators) emerging from the walls in monumental, most likely sombre, communal buildings probably evoked emotions of awe or at least respect, perhaps even humbleness or fear, creating haunting memories (Bloch 2008, 2010). In particular, when a predatory animal was represented as if it were about to attack, the spectator is cast automatically into the role of prey. As outlined above, fearful or anxious people are more willing to abide by set rules than self-confident individualists. Below, we show how the use of impressive, emotionally laden motifs was repeated at Çatalhöyük, but in a different context. However, the communities of the Middle to Late Pre-Pottery Neolithic of the Levant chose another strategy – possibly no less impressive – to strengthen group identities.

### Creating Genealogies – the Social Meaning of Pre-Pottery Neolithic Symbols in the Central and Southern Levant

In the central and southern Levant, the occurrences of figurative art from the Middle and Late PPNB (M/LPPNB) are rare. At first sight, this may seem an astonishing difference to the earlier communities of Northern Mesopotamia, especially in light of the wealth, diversifying ritual expressions, and the initial social stability indicated by LPPNB mega-sites (Gebel 2004, 2017). The famous, almost life-sized figurines from 'Ain Ghazal, and smaller examples from Jericho and Ramad, as well as some small clay and stone figurines of animals and humans are rather exceptional (Hermansen 1997; Mahasneh and Bienert 1999; de Contenson 2000; Hansen 2007; Schmandt-Besserat 2013; Becker *et al.*

2019). The current evidence does not reflect largely coherent and widespread patterns in rituality and symbolism, rather it appears that we are dealing here with regional and/ or ephemeral traditions: a regionality in rituality which apparently includes local *ad hoc* ritual expression. Even the almost human-sized sculptures from 'Ain Ghazal have distinctive traits, although all of them follow specific production modes and at first sight, seem to be similar. Extraordinary buildings existed, but they were integrated into the settlements and most of them lack the monumentality of the Early Pre-Pottery communities in the Northern Levant (Rollefson 2000; Byrd 2005).[12] Socialisation was above all determined by household structures (Gebel 2010; Goring-Morris and Belfer-Cohen 2013). Isotope studies indicate local communities, which were often clustered in densely occupied, circumscribed settlements. Non-morphological traits on teeth and the preliminary results of a-DNA analyses lead us to suppose that genetic relations may also have been decisive for social belonging (Alt *et al.* 2013; Skourtanioti and Feldman in prep.).

Particular group members were buried either beneath house floors, in public spaces between houses, or in burial areas in abandoned houses (*e.g.,* Kenyon 1981; Kuijt 2000; Berner and Schultz 2004; Byrd 2005; Gebel *et al.* 2006, 2020; Benz *et al.* 2019). The focus on the local community was supported by the so-called skull cult. The skulls of selected individuals were removed from the grave after a period of time. A few skulls were then plastered in a very elaborate and individualistic style and put on display, also for an undefined period of time (for a review see *e.g.,* Bonogofsky 2006; Kuijt 2008; Khawam 2014; Bocquentin *et al.* 2016). Two things are important to note for our analysis; first, this practice had its origins in the Epipaleolithic of the Levant (Bonogofsky 2006; Benz 2010), and only became more sophisticated during the Neolithic, and second, most of the skulls were reburied collectively, with only a few exceptions that were deposited in single graves. The remains of young infants were uncovered either on top of or within the grave-pit of reburied skulls, indicating intergenerational relationships (Benz 2012).

Whereas in Northern Mesopotamia it seems that memories of these deceased group members were kept alive by symbolically laden small artefacts, in the Levant the past was visibly integrated into the present by the display of skulls. These personalised intergenerational relationships provided a strong medium for the creation of social commitment (Kuijt 2008; Benz 2012; Sütterlin 2017).

Important performances of the LPPNB medialities in the Southern Levant include burying, hiding, fragmentation and burning, magical practices and rituals designed to facilitate mutual comprehension and thus encourage or provoke social alignment. These practices were clearly often of an ephemeral and *ad hoc* nature, and may have utilised the power of knowledge concerning the invisible. Traces of non-sepulchral magic and ritual fragmentation, hiding and burying of items as well as the burning of rooms in Ba`ja and Basta,

have for example been found in the intramural deposition of hammerstones, celts, ground stone fragments, and of one child burial (Basta only); in-floor bone arrangements and stone bowlet depositions; intermural animal bone deposits; stone-protected skull deposits (Basta only); buried figurine *i.a.* hoards (one case in Basta and Ba`ja); a covered wall painting (Ba`ja only); *in situ* fragmentation of burial goods/ cover slabs; burning of household inventories and other isolated evidence (*e.g.*, Hermansen 1997; Gebel 2002, Gebel *et al.* 2017, forthcoming; Benz *et al.* 2019).

The results of the medial analyses here thus underline the suggestions made by Gebel (2017). In contrast to Northern Mesopotamia, territorial claims and corporate identities were not created by the omnipresent display of symbols and monumental architecture here, but rather by domestic socialisation (household tradition and habits) and by personal relationships serving as a medium for group identities, described as *habitus* communities by Gebel. Communal memory was thus more intensively based on habit-memory than on episodic, high-arousal events. The densely packed villages of the LPPNB probably appeared as homogeneous, firmly circumscribed entities in the Neolithic landscapes. They may therefore have signalled territorial claims and social commitment, as did the monumental cult buildings in Northern Mesopotamia. In the Levant, the intensive display of a standardised symbolic imagery was not necessary in order to create commitment and loyalty. These observations corroborate the results of recent statistical analyses, which determined that there is no significant correlation between absolute population densities[13] and the intensity of the use of symbols (Cartolano n.d.).

### *Domesticating the Wild – Conventionalised Medialities in the Pre-Pottery Neolithic B and Pottery Neolithic of Central Anatolia*

Our third example considers the huge Neolithic settlements of Central Anatolia, where "special buildings" were generally integrated into the settlement. The domestic dwelling unit could be used for both ritual and daily practices. Sites devoted to special tasks and special ritual structures, such as the site of Musular, seem to be rather exceptional (Özbaşaran *et al.* 2012). As outlined in the case of the Levantine mega-sites, at Aşıklı Höyük (Özbaşaran 2012) village life seems so firmly established that it was clearly not considered necessary to display corporate identities via impressive symbolism. Close genetic ties may have played a certain role in establishing and maintaining group identities (Yaka *et al.* 2021). In burial rituals, there is almost no visible segregation of particular groups or individuals. Yet there were strong traditions concerning the construction of houses. Houses were built precisely on top of each other for several generations, indicating a fixed concept of the domestic unit (see also Hodder 2006; Baird *et al.* 2012). Other, more elaborate and larger buildings with special features such as wall paintings or red stained

Fig. 6    Cooperation was conjured up in the wall painting from Çatalhöyük, Konya, when facing the aurochs/ bull. Despite the representation of communal effort, individualisation cannot be hidden. Every human figure has his/ her own style and accessories. (Drawing: Omar Hoftun ©)

floors can be distinguished from 'ordinary' houses, but their specific function remains enigmatic (Duru 2012; Özbaşaran 2012; Özbaşaran *et al.* 2012: 161).

The famous site of Çatalhöyük in the Konya Plain (Hodder 2006, 2012) is another example of strong household traditions in art and architecture. As in Aşıklı, houses were repeatedly built on top of each other. Micro-morphological analyses by Wendy Matthews show that up to 450 layers of plastering were applied to one wall (Hodder 2006: 128). Despite this strong tradition, every house also had individual features. The dead were buried in specific places beneath floors and benches. Wall paintings were repainted several times. Despite many similarities to other sites in Central Anatolia, the frequent display of symbolic devices inside houses at Çatalhöyük is extraordinary.

Most of the impressive art comes from the later levels of Çatalhöyük, dated to the middle of the 7th millennium BCE. Many motifs, like the aurochs, leopards and vultures in the wall paintings seem to recall the ancient imagery of the early Holocene sites in Northern Mesopotamia. The style and movement of this bull in a wall painting from Çatalhöyük (Fig. 6) is almost identical to an example from Göbekli Tepe. Emphasis on the predatory or offensive body parts of the animals was so important that, for example, red paint was added repeatedly to the claws and teeth of the relief depiction of two leopards (Cutting 2007: 127). Despite these obvious reminiscences in style, and the selection of single motifs from the 10th millennium (Hodder and

Meskell 2011), the motifs appear here in a completely different context. This difference is not only evident in the combination of motifs – the animals are surrounded by groups of people at Çatalhöyük – but also by their location: here, all art occurs in domestic contexts within a village farming community. Socialisation took place inside the house. Children saw these images and sculptures every day, and perhaps even crawled on the plastered bucrania (Hodder 2006: 128). This familiarity probably caused a different emotional impact to the one engendered by the monumental, segregated art and architecture of the Northern Mesopotamian sites. At Çatalhöyük, encoded ideas emphasise groups of humans rather than individual ones, even though every person is represented with individual traits in the wall paintings. The bull is dominant over the humans in terms of size and takes a central place in the picture, but it is surrounded by many people, some of them equipped with weapons. The relationship between humans and animals is thus reversed when compared to the imagery from Körtiktepe and Göbekli Tepe. Whereas hunting scenes were barely represented in the art of Northern Mesopotamia, at Çatalhöyük hunting had become a prestigious event for the identity of the whole group. Archaeozoological analyses show that aurochs played an important role in feasting (Hodder 2006: 52), but were not for daily consumption.

Just as some motifs recall ancient Northern Mesopotamian traditions, the paired figures from Çatalhöyük also recall the larger paired figurines from 'Ain

Ghazal. Plastered skulls from Çatalhöyük (Hodder 2012) and Köşk Höyük (Öztan 2012) may also represent a kind of renaissance of the Levantine skull cult. Yet at Çatalhöyük, the reburial of the plastered skulls occurred in a different context. As mentioned, most plastered skulls in the Levant were reburied collectively, whereas the ones from Çatalhöyük were rare and reburied in association with single primary burials (Haddow and Knüsel 2017). Here again, it might be possible to see an emphasis on individualisation at the expense of established communal identities (for further areas where this trend is visible, see Hodder 2006: 126-129). The meaning of symbolic reminiscences in both general imagery and burial rituals was therefore probably different in Central Anatolia, compared with the two other regions. However, the frequent display of symbolic items might have again become necessary to regain commitment, at least at the household level, whenever there was a threat of segregation. Remarkably, according to first genetic analyses of ancient DNA and dental phenotypes (Pilloud and Larson 2011; Yaka *et al*. 2021), corpses buried beneath benches inside houses were not closely genetically related. This indicates that genetic affiliations were not primarily decisive for integration into the social community, but that people from a larger genetic pool were integrated.

## Interpreting Early Neolithic Medialities

The aim of our transdisciplinary contribution has been to interpret the social impact and relevance of symbolic behaviour in different regions of Southwest Asia during the early Neolithic. In the transition to sedentary communities in Northern Mesopotamia, more widespread cooperation and larger communication networks were sustained by the intense usage of common figurative and abstract symbols. Scenes and subjects indicating threat probably primed people's emotions, evoking feelings of respect, awe, and perhaps fear. Spatial segregation of such representations from daily life enhanced these feelings, since the architecture of these extraordinary contexts induced movements that differed from movements used in daily routines. However, as mentioned in the section on neurobiology, the alignment of views as well as the synchronisation of movements and rhythms during rituals would have established and enhanced social affiliation, and may have facilitated automated behaviour. Conscious reflection may also have been harmonised within the group. Bearing in mind the psychological effects on behaviour that a sense of affiliation and fear can generate, group members might have then become more willing to abide by given rules, or to accept changes that contradicted the common ethos of equality (Widlok 2013: 175). People remained an integral part of their natural environments, and their social identities were probably still largely determined by the communally experienced exposure to these natural environments. This leads us to suggest that their imagery was deeply rooted in animistic – possibly also shamanic – concepts,

but the monumentality and the fixing of symbols in stone led to new relationships with the past and may have created feelings of social belonging.

The monumental cult architecture built in exceptional natural places turned certain locations into fixed foci of communal rituals and memory (Çelik *et al.* 2011; Schmidt 2011), thus binding a ritual community to special places by a strong physical reinforcement of extraordinary, and probably enduring (see point 5), experiences and memories. Besides establishing and maintaining emotional bonds to other group members by means of synchronised behaviour during rituals, territorial bonds and identification with certain places would also have been enhanced (Godelier 2007). It is of course clear that stronger in-group bonds enhance alterity with other groups. Therefore, new means of integration and mitigation had to be developed to avoid alienation between groups.

Territorial marking and the emotionally laden symbolic system were not only used as a display of mastery of threatening situations, but also as a means to strengthen regional common identities during times of considerable social changes (Sütterlin 2017). Tensions and contradictions between encoded ideas and daily life were clearly visible, *i.e.*, segregation of ritual communities, monumentality of special architecture, and the consolidation of concepts within flexible, egalitarian communities (Benz 2017). The high standardisation of architecture and art, as well as the naturalistic style in which they were executed, would have made it possible even for non-local people to recognise the presence of a cohesive social assembly and to understand at least the basics of the symbolic communication displayed. This communication may have promoted mutual respect, and possibly also reciprocal understanding between regional groups despite local differences. The fixed repertoire of encoded signs and ideas would on the one hand indicate belonging in social and ritual contexts, but on the other hand, could also open the door for indoctrination and dogmatic coercion.

In contrast, the corporate identities of village farming communities in the central and southern Levant during the Middle to Late Pre-Pottery Neolithic were strengthened through intra- and intergenerational personal relationships by (quite literally) re-presenting and including deceased members of the community in daily life. Whereas the display of communal symbolic identities was probably not as ubiquitous and frequent as it had been during the late 10th millennium in Northern Mesopotamia, these representations of 'ancestors' – whether biological or not – were probably more important. Due to the importance of the face as a prime marker of identity and emotions (see Point 1a of the Neurological Basics), it can be surmised that personal relationships caused greater empathy and a stronger social commitment than the rather impersonal group identities built on the basis of a common symbolic system and confined territories in Northern Mesopotamia. Moreover, the house and households became implicit aspects of culture and gained importance in the formation and

maintenance of social identities. Living in village communities seems to have been a well-established pattern, possibly supported by prescriptive mating rules (Alt *et al.* 2013; Skourtanioti and Feldman in prep.). The tight relationship with deceased group members thus only prolonged what had been experienced in daily life. In contrast to the monumental self-idealisations found at Göbekli Tepe, in the Levant these imagined and social identities appeared to be closely related, and probably stabilised and legitimised social structures and daily practices.

The same holds true for Aşıklı Höyük in Central Anatolia. During the 8th millennium BCE, villages seem well established as focal points of communal identities. However, towards the end of the Pre-Pottery Neolithic at Çatalhöyük, the intensive display of symbolic items inside domestic houses might hint at emerging conflicts resulting from the increasing importance of the household unit during the early Pottery Neolithic (Hodder 2006:139, 232). It seems clear that it became necessary to keep families together by displaying a common symbolic identity, in order to ultimately ensure their socio-economic sustainability and thus continued existence. The imagery evokes the importance of cooperation and demonstrates duality through figures representing a human couple (Hodder 2012: Fig. 17-18). In both fields, and in both enacted (*e.g.,* burial rituals) and encoded ideas (*e.g.,* imagery), very ancient practices and motifs were chosen in order to relate the present to a remote (possibly mythological) past. However, this 'renaissance' of motifs from the Levant and Northern Mesopotamia cannot disguise the major differences between the village farming groups and the ancient hunter-gatherer communities. Hunting had lost its meaning as an essential subsistence practice, but it still played an important role in rituals. Elements of foraging symbolism were inscribed in the Pre-Pottery and Pottery Neolithic cultural memory and practices. It seems that both the function and potential of evoking this collective memory was recognised as a successful means for aligning people and sustaining cultural identities.

In a similar vein, there is hardly any archaeological evidence that the wall painting which depicted the removal of human heads by vultures – or by humans disguised as birds(?) – was actually intended to depict ritual practices (Hodder 2006: 50, Fig. 57; Cutting 2007:130). Although the imagery on display at Çatalhöyük may have thus conjured up communal identities from ancient times, an emerging individualism is evident in the architecture, the burial rituals, and in the finer details of the hunting scenes themselves. In contrast to the remote and segregated monumental cult buildings of Göbekli Tepe and other sites with special cult buildings, here symbols and rituals were transferred to the daily, domestic sphere, with infants growing up in intimate contact with this imagery. There was nothing extraordinary or exaggerated in that imagery: instead, it formed a familiar part of the household's identities, a kind of 'implicit culture'. Besides the arousing rituals that may have taken place, symbolic

behaviours could thus represent what Connerton called "habit-memory" (Connerton 1989: 25). Wild animals were symbolically "domesticated", bound into the house, thereby demonstrating the dominance of humans over animals (Hodder 1990; Helmer *et al.* 2004; Stordeur 2010).

Despite these fundamental differences with regard to the impact of symbols, the examples of Çatalhöyük and Northern Mesopotamia also show interesting structural similarities. Both examples allow us to reasonably suggest that intensive displays of communal symbols were used during periods of heightened tensions between the existing ethos and social reality, *e.g.*, when segmentation endangered cooperation or when larger communities had to be immunised against alienation and the threat of fission. Under such critical conditions, the display of communal strength and reminders of possible threats may well have served to reaffirm a sense of belonging, to impress people, and to (re-)gain their commitment by subliminally influencing their emotions and behaviour.

In both periods, pictures of non-daily experiences were chosen to bind people to an imagined common reality. The imagery evoked idealised conditions in order to influence people's minds. At Çatalhöyük, we were able to trace the origins of these figures to a remote past, but for Göbekli Tepe archaeological evidence from the Epipaleolithic remains rare. Nonetheless, it has been shown that many aspects of these representations refer to an animistic world view, where human and animal identities merged – even though they were never considered identical (*e.g.,* Willerslev 2007).

## Prospects

Our investigations into mediality in early sedentary communities open up new pathways for our understanding of the social impact of symbolic behaviour during the fundamental transition from mobile hunter-gatherer groups to sedentary village farming communities. These early Holocene communities experienced an unprecedented increase in medial priming, in many ways and on many levels. This increase was not linear, but was rather driven by changing social conditions, and human decisions concerning how to address the social challenges these changes presented. The three case-studies outlined here show that people of the early Holocene used different forms of medial influence to maintain larger sedentary communities. While in the Levant burial rituals created strong social relations even beyond death, the standardised symbolic systems, both in Northern Mesopotamia and at Çatalhöyük, apparently conjured up a social ethos that no longer existed. Despite a revival of Levantine and Northern Mesopotamian symbolism at Çatalhöyük, the social impact of symbols was different in this well-established farming community. The domestication of symbols increased their importance for the socialisation of children. The imagery became an unquestioned part

of the 'implicit culture'. Sedentary life, symbols fixed in stone, and last but not least, the use of symbols inside the house thus paved the way for conformism. In light of the social dimension of the self, the role of medial priming is crucial. Opportunistic, resilient behaviour became ever more difficult.

Here, we could only present a short overview of the changing medialities and their supposed social impact. Many aspects remain to be investigated in detail; for example, it is evident that colours and certain materials had a high symbolic meaning in all three periods (*e.g.,* Hodder 2006: 51; Ronen 2010; Özkaya and Coşkun 2011: 51; Baird *et al.* 2012: 226; Yartah 2013: Fig.11; Cocqueugniot 2014). Providing empirical evidence for the emotional impact of the imagery remains a pending task for future transdisciplinary projects between archaeology and social neurosciences.

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**Endnotes**

[1] This is not the place to discuss the meaning of the term *symbol*. The differentiation between icon, index, and symbol in prehistoric communities is fluid and does not help much in understanding ancient communities. Every sign can become a symbol. A symbol is considered here to be any action or thing that stands for something else, whereby its meaning is based on minimal communal consensus, even though individual interpretation may vary considerably (Layton 2007; Wagoner 2010).

[2] Technological traditions, diet, muscular markers, dimorphisms, or other bodily markers indicating specific activities would provide further important evidence. However, primary proxies for a systematic comparative meta-analysis of these data are still missing.

[3] This is in strong contrast to still prevailing socio-biological theories and neoliberal discourses, which still believe in the Hobbesian theory that the original nature of humans was brutal, aggressive and selfish (*cf.* Axelrod 1995).

[4] For a definition in mediality studies (Simon 2011).

[5] The main communal symbolic behaviour seems to have been focused on handling the dead. The reflexivity, the possibility to interfere during and after burial rituals, depends on prescribed rules. For example, it is unclear whether everyone was allowed to extract a skull, to plaster and to re-plaster it or whether this task was restricted to special groups or individuals with a special status. Since this is unknown, an assessment on the reflexivity is hardly possible. The same holds true for the interaction with figurines, as well as for caching and hiding things. Was their 'burial' an individual act or a public event? Once buried, it is difficult to interfere with them, unless removal was not taboo.

[6] We have argued elsewhere that the archaeological data attest to the deep roots in shamanic practices (Benz and Bauer 2015). However, – from a religious-historical perspective – it may be possible that the role of ritual leaders was changing during the 10th millennium BCE and that ritual leaders combined "shamanic practice" with the power of a common, enacted and encoded system of symbols. Such a dogmatic use of symbols would contradict shamanic concepts. For the discussion of this understanding of ritual leadership see Gebel *et al.* (forthc.)

[7] Two humans and a snake were possibly also depicted on a stone artefact at Tell Qaramel (Mazurowski and Kanjou 2012: Pl. 73), but unfortunately it is broken. The stratigraphical provenience of the famous limestone vessel fragment with the scene of two humans and a "tortoise" is currently debated. It might come form a more recent occupation phase but not from the Pre-Pottery Neolithic B levels (pers. comm. M. Morsch). It is therefore no longer considered here.

[8] There are several reasons why we suggest an animistic ethos for the people of Göbekli Tepe (Benz and Bauer 2013). In the strict sense of the word, totemism presupposes the existence of clan structures, which are hardly provable in archaeology without aDNA analyses. Furthermore, there is no exclusive use of certain symbols for specific groups. Even if some animal depictions dominate in certain enclosures at Göbekli Tepe, their use is never exclusive.

[9] For a general summary on the deliberate destruction of things during the Neolithic see Chapman 2000; Voigt 2000: 256; Verhoeven 2013.

[10] Recently, Kinzel *et al.* (2020) argued for natural processes and collapsing buildings that were responsible for the "backfilling" of the "special buildings" at Göbekli Tepe, instead of intentional, purely anthropogenic backfilling.

[11] Gebel (2013, see also 2017) has suggested the term "ideocratic" for a form of Neolithic social organisation, which is based *i.a.* on the rule of encoded and enacted symbols and rituals. Although he defined it for the Neolithic, we prefer not to use this term, since it is generally used in con-

nection with (totalitarian) state organisations and runs the risk of evoking the wrong associations.

[12]        It seems that certain locations such as Kfar Ha-Horesh were reserved for burials (Goring-Morris 2005; *cf.* Garfinkel 2006); see also the development of special burial areas at the Pre-Pottery Neolithic site of Aswad (Khawam 2014). The ritual character of the special installation at the edge of the Neolithic village of Beidha remains controversial (*cf.* Byrd 2005).

[13]        Such calculations based on absolute numbers per site, can be considered a first rough approach, but they do not consider the population pressure people may have felt due to increasing population densities. In our view, such calculations should consider the proportional increase of population densities, since this is what people realized.

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