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Social space and (self)representation within Late Bronze Age Aegean and East Mediterranean palatial architecture

Ann Brysbaert

This paper aims to relate the technical processes of painted plaster production and consumption in Bronze Age Aegean elite complexes to their architectural contexts. It investigates how the (intended) technologies, style, and imagery, embedded in these specific painted plaster decorative surfaces and their architectural supports, may have been crucial active players to achieve group bonding, status, and social identities, and how this may have been achieved. This is done in order to investigate the potential social role(s) these may have played, together, in forging social identities, status, and group belonging through both the social processes of production and consumption alike. Specific groups of people – not all – interacted with these material surroundings at various points in their lives. This depended on their age, social belonging, skills and, often, the intention of other agents, human and material. Under the impulse of the built environment and their decorative surfaces themselves, it is argued that several communities of practice were involved in continuous building and decorating, and these were not only artisans.

1 INTRODUCTION

This paper aims to relate the technical processes of painted plaster production and consumption in Bronze Age Aegean elite complexes to their architectural contexts. This is done in order to investigate the potential social role(s) these may have played, together, in forging social identities, status, and group belonging through both the social processes of production and consumption alike. Therefore, the paper investigates how the intended technologies, style, and imagery, embedded in these painted plaster decorative surfaces and their architectural supports, may have been crucial active players to achieve group bonding, status, and social identities, and how this may have been achieved.

Most of these paintings adorned the walls of specific rooms, corridors, and also several floor surfaces of Minoan, Cycladic, Mycenaean, and east Mediterranean architectural (palatial) complexes in the Late Bronze Age. Apart from purely decorative bands and emblems (overview in Immerwahr 1990), many of their figurative scenes are very well known to us: la Parisienne (Knossos), bull leapers (Knossos, Mycenae, Tell el-Dab'a), hunting scenes (Tiryns,

Pylos), boxing boys, and fishermen (Akrotiri), to name a few. A decade ago it was confirmed that the main painting technique that came to be used from the Neopalatial period on Crete onwards, and not before (see Cameron *et al.* 1977), was the *al fresco* technique. In contrast, paintings pre-dating this period were executed *al secco* which is illustrated by plenty of examples. The *al fresco* technique appeared rather suddenly on Crete and several reasons for this change have been suggested (Brysbaert 2004; 2008). It seems though that also the *al secco* technique continued to be employed after the *al fresco* technique was already in use (e.g. at Pylos: Breccoulaki *et al.* 2008; 2012). This is very understandable since working on damp lime plastered walls may be hampered by climatic and other conditions after which only painting *al secco* would be possible. In some contexts, such as Pylos, it seems to have been even the preferred *modus operandi* while M. Lang's (1969, 10-25) intensive macroscopic observations recognized clear *al fresco* painting at Pylos, contra Breccoulaki (2008, who, subsequently, does not recognize *al fresco* anywhere). Based on the published evidence to date, one can safely conclude that in Crete, before the Neopalatial period (1700-1600 BC)¹ there was no sign of any fresco painting. This changed however, once figurative painting came into existence by the start of the Neopalatial period. From then onwards many paintings were carried out *al fresco*, even into minute details. Based on evidence to date, the entire skill of painting on lime plaster seems to have disappeared again on Crete, the islands, the Greek mainland and in the East Mediterranean overall, at the end of the Late Bronze Age at about 1200 BC. The reasons and circumstances for this occurrence have been extensively discussed (Brysbaert 2008) and seem to coincide with the disappearance too of Linear B writing and a slowing down of glass items made, in use and in circulation especially in the Mycenaean mainland.

The main differences between painting *al secco* and painting *al fresco* are as much rooted in technology as in style (Brysbaert 2008). Painting *al fresco* requires specific materials and conditions: pigments (most often of inorganic origin) suspended in water to be applied onto a *damp lime* plaster surface. The drying of the wall as a chemical process locks the pigments into the top plaster coat to form an

irreversible unit. Practically, this implies that mistakes cannot easily be reversed, which is clearly visible, for example, in the bull painting from Tiryns displayed at the National Archaeological Museum in Athens. Equally, the *al fresco* technique requires highly skilled painters and plasterers with steady hands to finish certain detailed scenes in time before the plaster dries up entirely. If, however, all goes wrong one would need to scrape off the decoration and, with it, the top surface of the underlying plaster in order to undo the *al fresco* painting. The *al fresco* technique, thus, implies that iconography and technology are completely interwoven and interlocked with each other as a unit even if the technique is not used throughout the entire surface. This unit is a clear example of what Lechtman and Steinberg (1979) have called a 'technological style'. This, however, does not apply to *al secco* paintings where one can remove the iconographic programme from the surface without interfering with the actual plaster surface because one can simply dissolve the binding medium that 'glues' the pigments onto a dry wall of any type of plaster.

In studies of painted plaster, we cannot separate technologies and representations from their larger context in architecture or from concepts of space in general. In considering buildings and the treatment of architectural surfaces within them, such as paintings on plaster, we need to investigate more specifically what their technologies and representations may tell us about the relationships between spaces and buildings, on the one hand, and people's day-to-day social lives, on the other. We therefore need to think about the very people who created, constructed, inhabited and experienced these spaces, and what these (decorated) spaces meant to them. Past research on painted plaster in the Aegean has frequently focused on either iconographic programme *or* technological features, while only very few papers have been combining both fields and published integrated results. While treating technology, iconography, and style of this specific craft holistically, important questions have come to mind that go beyond the pure technological issues of painting *al secco* or *al fresco*. These questions, for example, relate to the potential social role that the *al fresco* technology and style may have played in people's identity formation and building, group belonging and bonding. Arising from this, can we suggest that there were any social implications linked to the difference between *al fresco* and *al secco* paintings and, if so, what are they?

The mere identification that a wall has been painted *al fresco* or *al secco* does not contribute much to the deeper understanding of the role these paintings may have played in their architectural, socio-political, and temporal setting (Brysaert 2008). The questions posed above integrate the technical observations into a wider discussion concerning social practices performed within the context of an elite Late

Bronze Age culture in the Aegean and the east Mediterranean. In considering the relationships between the architectural context, on the one hand, and their surface treatments, on the other, both should be better understood as 'active' if we want to grasp what the paintings meant to various people within these places, but also what this architectural decorative context *itself* constructed in terms of meaning when in interaction with people. In order to make these points clear, the paper discusses first the role of space and architecture, including its decorative surfaces, as an active player in forming and maintaining social relationships, status, and identities. Second, in order to understand why the *al fresco* technique in painting on damp lime plaster held in itself the potential to play important role(s) in the social relationships between people and these decorative locales, a discussion of intentionality follows.

Al fresco painting could, in theory, be achieved by accident, but such accidental occurrences cannot explain an east-Mediterranean-wide phenomenon that seemed to have consisted of a 'package' of technological features and knowledge that was passed on in specific elite contexts over a limited time span, and within a limited but well-connected geographic region. Moreover, the purely technical requirements to achieve true *al fresco*, for which *lime plaster* is crucial, are far more labour intensive than painting *al secco* on dry plaster of *any* nature. Those involved, as has been argued well before, clearly knew what they were doing. They were doing this intentionally and intentionally different than their Old Palace Period predecessors on Crete.

2 ACTIVE ARCHITECTURE AND SOCIAL SPACE
Architecture has traditionally been seen as a theatre for actors and their performances, a mere backdrop, stage or arena on which social life unfolded (Goffman 1959; 1963); or as a container of situated practices that does not encode original meaning (Barrett 1994, 92). Architecture has been understood as both art and technology, but it is in fact a hybrid form of both. Furthermore, most buildings are less meaningful if they are dissociated from their use because they are often valued and assessed through their quality of use and their 'fullness' (*i.e.* in the relationship established with those for whom these buildings were designed). Hillier and Hanson (1984, 1) state that buildings are objects, on the one hand, consisting of materials such as masoned stones, mudbrick, wooden beams and plaster, and techniques including dry masonry and pointing brickwork joints, (architecture is produced). On the other hand, buildings also create or order empty volumes of space (architecture produces). So architecture 'becomes' itself and modifies itself by being used by a wide range of people who initially construct, and by other people who later may move within and around it. Architecture, decorated or not, thus becomes

embedded in and forms part of its surrounding landscape through, for example, the use of local materials for its construction, which may change over periods of time (Brylsbaert 2013; 2015). As such, architecture produces history and narratives and assumes an active role, it has agency in that it may further or hinder human activity, and it may even directly or indirectly condition people's behaviour, speech, and perceptions. Maran (2006a; 2006b) perceives architecture as an active force or actor in social relationships. These relationships may change over time and so may the actual architecture, while links based on memory may draw people back to the same architectural spaces (Brylsbaert and Vetter 2010; Maran 2016).

Thus, space, as it can be created by physical architectural forms and techniques, is a historical production, both as a medium for and as the outcome of social being (Borden *et al.* 2001, 5). The postmodern geographer and urban theorist Soja (1989) talks about a socio-spatial dialectic: 'people make places and places make people'. Giddens (1984, 69-72) suggests a dual 'being together' or the co-presence of body and space (*e.g.* person-painting). Space is also social production and social reproduction, and since social relationships are gendered, we tend to believe that this also counts for space and architecture, through its occupation and through its representation (*e.g.* male-female-child-elderly and human-divine-shaman). However, gender seems difficult to pin down in architecture. Stöger (2011, 13; 2015) cites Wallace-Hadrill's thorough study of 234 houses in Pompeii in which he could not identify, for example, spaces for children or the elderly, nor a clear male-female space divide. In Roman houses it seems that gender and age are not represented as axes of differentiation. This stands in contrast to social rank as the prevailing spatial differentiator within the Roman house (Wallace Hadrill 1988, 50-52; after Stöger 2011, 13). However, gender differences did seem to exist in the Greek houses of the Classical period at Olynthos (Wallace-Hadrill 1988, fig. 1, 50-51, n. 31) in which, for example, the typically male or public reception space of the *andron* (Nevett 1994, 108 for this reading of *andron*) was emphasized by its decoration in mosaics and its closeness to the entrance of the house. The more private rooms were located further away and were perhaps harder to reach.

The relationship between space and gender is often also defined as a power relationship. A typical example of its time shows how the Great Megaron at Tiryns was interpreted by its excavators (Schliemann 1886) as the throne room for the king while the Small Megaron was assigned to the queen at Tiryns. Another example illustrates a complex pattern of access rules embedded in the architectural layout of Islamic houses in which the women of the household can circulate perfectly freely within the confines of the house but out of view and reach for non-related male visitors. These men are

catered for in specific parts of the building but with no links to the rest of the house (Nevett 1994, 106-107). As gender differences may thus imply differential social status, gender differences in such contexts seem linked to power differences, but power does not always lie only in the hands of the most obvious groups. Buildings and space may thus relate to power, and as such, Foucault (1979) sees buildings as instruments that act upon the body and transform the character and personality of the individual; he thus ascribes architecture an active character. Markus (1993) links buildings and architecture to power since different buildings classify and order social relationships differently.

In the last decade, the relationship between power and architecture in Minoan, Mycenaean, and east Mediterranean contexts has been extensively discussed in several contributions (*e.g.* Maran *et al.* 2006). Among other topics, aspects of accessibility and the issue of boundaries in architecture were explored, both of which are completely interrelated. An interesting study on entrances into Minoan palaces, applying spatial analysis tools (Adams 2007), emphasised the importance of people's experiences while moving in and around the palaces. Adams (2007, 365-370) concluded that palaces were accessed as private areas by rulers, but also as workspaces or social gathering spaces by many other people of all ranks. In her study the palace as a structure was, at least in part, fulfilling an active role in forcing people to behave in certain ways and in creating the effects the building design may have had on visitors. Minoan palaces as architectural features were not just seen any longer as the theatrical backdrops for people's social interactions and performances (but see Adams 2007, 379). In another case study applying access analysis to Pompeian houses, Grahame (2000) differentiated between inhabitants and strangers but subdivided them further (table 1). He theorised that a high level of familiarity is present if space within the house allows people to come together (*i.e.* gathering spaces). And space may be very private if smaller spaces are present or if spaces are well shielded off through boundaries or difficult access routes. However, not all boundaries are physical such as doors, staircases, slopes in corridors, and windows. Some may be understood or created by differences in light, floor materials, or the presence of guards, or perhaps

Inhabitants	Familiar	Parents, children
	Not familiar	Personnel, lodgers
Strangers	Familiar	Uncles, close neighbours
	Not familiar	Anyone else

Table 1 Inhabitant-stranger divisions for a domestic context (based on Grahame 2000, 21-22)

even announced in advance (Maran 2006a; 2006b, Thaler 2008, pers. comm.). More recent syntactic studies comparing Roman city blocks from Ostia revealed that individual neighbourhoods had different spatial strategies to foster community building (Stöger 2011; 2014). Some city blocks focused on shared internal courtyards for social encounters. The boundaries of these blocks, defined by the grid structure of the street network, seem to have encouraged the development of collective space within their own perimeters. Other blocks appear to lack shared interior spaces but seem to have extended their social reach beyond the physical confinement of the block structure. These neighbourhoods look outward towards external community building with activities centred on the streets that confine but also connect the block to the wider city.

In this context, Grahame (2000, 22) sees architecture as an active force that sets up and sustains categorical distinctions between people in society, thus institutionally creating social inequality. Maran (2006a) is, furthermore, convinced that architecture deliberately influences our behaviour: it makes us walk in certain directions and guides us into avoiding particular features or areas, while being drawn to others for specific reasons. Through recursive patterns of movement these paths and features become embedded in our knowledge, conscious or not, and determine what we can and cannot do in the specific context we are in. Consequently, architecture plays an active role and has an active function in people's social lives. Whenever there is a group of people in a given setting, the architecture creates a physical organisation of space, which is fundamental as a necessity of social existence and as a direct way of communication via materialised systems of self-representation (De Carlo 2005, 13). Also, the need for architecture is connected to the concept of knowledge of the other and the self. Within the surroundings of architecture, we may exchange knowledge that helps to form trust between each other so that bonds and friendships can grow.

Architecture needs to be looked at even more closely as a functional space and hence needs to be more specifically defined. On the one hand, there are different users of architecture: the architects themselves and their activities that create the built environment, *by design*, and the users of architectural constructions, also producing architecture, *by use* (Hill 1999, 6 on the architect as user and the user as 'illegal architect'). Many archaeological studies that recognise space and its societal role in shaping identities, actions, and social processes, have been and still are influenced by Lefebvre's and Foucault's writings on space from the 1960s and 70s, through which the 'spatial turn' movement saw space as a generative force (e.g. Blake 2004). Lefebvre's (1991 [1974]) triad on production of space is useful in looking at architecture as a functional space

(table 2). His analytical formulation and the detailed explanation of each of them – spatial practices, representation of space, and space of representation – would provide material for an extensive discussion in its own right. Instead, limited space allows just some examples to illustrate the variety of perspectives from which architecture needs to be considered.

It is then the life history, the life cycle or the biography of a space that accounts for the complete interrelation and linkage of Lefebvre's triad with social practices. Under the denominator of 'architecture', we understand categories such as house, palace, funeral monument, religious or cult place, farm and workshop. None of these defined places, however, reflect any specific bond that people may have with them. It is through connecting these places with people and their feelings evoked *during their interaction with these places* that we may come up with meaningful functions and linkages. Places too can, in themselves, actively inhibit or encourage these specific social interactions. So, once a house is inhabited by people, it may become a 'home', and once linked to those people's feelings about their home, it may mean a place full of warmth, safety, cosiness and intimacy (see table 3). Once places, people and their feelings about these places are interwoven and the active agency of a place is recognised and respected (or not), they may also change their behaviour and conduct, the way they are dressed, speak, and interact.

Spatial practices: as it is perceived	Defines actions, signs, spaces of everyday and those made special by symbolic means
	Kitchen, workshop, bathroom, church
	Space of objects and things and space of movements and activities
Representations of space: as it is conceived: concept without life	Conscious codifications of space typified by abstract understandings: maps, 3D model
Spaces of representation: tend toward systems of nonverbal symbols and signs: life without concept	Spaces experienced as symbols and images: they condition possibilities for action, spaces of the experienced and the imagined
	'Wild West', doll house, ...

Table 2 Lefebvre's triad on space production with examples (based on Lefebvre 1991)

House or home is an especially important place, at least in our Western cultural understanding. On the one hand, it (hopefully) is a stable container (which does not mean ‘static’ or inactive) for the formation and maintenance of the personal identity of its occupants – the home as a mirror to the self (Hill 1999, 111). As such it is a place for the expression of intimacy, for empowering the self. Many can recall memories of the house or home they grew up in, some related to visual or other sensory memories. Home can be seen as a locale where memories are embodied, and upon (re)entering that home these memories may even (un)consciously prompt specific actions/performances (*e.g.* entering through the front door and taking off your shoes). As adults we may retain these memories from our childhood, and our current and future conceptualizations of what a house/home is like, or should be like, are based upon these memories. Many remember particular sounds, smells, views and spaces or items associated with specific, often repeated, activities. When we remember these, we are almost thrown back in time and different time cycles, past and present, become intertwined (Jones 2007). When such experiences were positive, the home would be remembered as a safe place for its inhabitants. On the other hand, however, ‘home’ may also be a response to insecurity and change. Therefore, a home *has* to appear stable (but not static) because social norms and personal identity are shifting elements in our lives and are thus slippery. According to Grahame (2000), architecture, while empowering the self and personal autonomy as well as providing a sense of freedom, can also become a form of control. Control, together with loss of personal autonomy, is linked to inequality of power and inequality of knowledge between the observer and the

Architecture	Primary function	Possible feelings
House	Home	Safety, warmth, intimacy
Palace	House of king	Awe, fear, subservience, hate
Funeral monument	Last rest place for the beloved	Sadness, closeness, relief
Cult place	House of God	Awe, fear, humbleness
Farm/market	Place to get food	Excitement, entertainment, satisfaction, competition
Workshop	Place to earn a living	Keeness, importance, stress

Table 3 Variety of architectural classes, their primary function, and possible feelings associated with these

observed. A house under constant surveillance through phone tapping, for instance, forms a good example. This shapes our social behaviour and conduct within the house, and the conditions in which we may ‘(re)shape’ or adapt the house (for example, creating a space for privacy with non-fixed feature elements or using sign language). Architecture thus plays an active role through its fixed, semi-fixed, and non-fixed features (*e.g.* Rapoport 1982; cf. Thaler 2006 on the archaeological application of these concepts), in (re)shaping relationships. This shaping of relationships seems, in some cases, to have a cyclic aspect to it: it may happen repeatedly, independent of the intervening time. Some examples of that will become clear in the discussion further on. The cyclic character of relationships between people themselves, and between people and their material surroundings can be deduced from cyclical features in material culture.

This is why technological studies of painted plaster within their architectural contexts, combined with stylistic and iconographic studies, become increasingly important (on the cyclical nature of shaping, both technical and social, see Brylsbaert 2011). Such studies reveal people’s social practices (intended or not, see below), and through these, several communities of practice, such as, for example, the builders, the architects, and the inhabitants (Lave and Wenger 1991, 29-34, 104; Wenger 1998; Wendrich 2012, 2-5; see also Brylsbaert 2017). Each such community is responsible for their interactions with their built surroundings and the outcome of these interactions.

3 INTENTIONALITY

Intentionality implies ‘being conscious’, or ‘being aware’, and this feature makes people stand in a specific relation to their environment: we are not just affected by things, events, and people; we are aware and conscious of these, of all that we bring before our mind (Woodruff Smith and McIntyre 1982, xiii, on Husserl’s theory of intentionality). So intentionality characterises the ‘consciousness’ of people. Intentionality can also be seen as a ‘mental representation’. An important aspect of Husserl’s approach to intentionality is that he focuses not only on the objects of our intentions but more specifically on their content; unconscious aspects, for example, are not part of intentionality (Woodruff Smith and McIntyre 1982, 5). In this, he follows Brentano, for whom intentionality can be characterised as the ‘directedness’ of consciousness to an object (Husserl unpublished notes cited by Rinofner-Kreidl 2000, 175²). In this, both Brentano and Husserl distinguished mental from physical phenomena: physical phenomena were not intentional since they did not have a consciousness that could be directed towards an object of that consciousness. Intentional phenomena include acting, desiring, perceiving, hoping, and judging, each of

which ‘aims at’ or is ‘directed towards’ something: one hopes for something, does something, and/or perceives something. In opposition to other philosophers, Husserl did not see sensory-influenced expressions and outcomes such as moods and feelings as intentional. He believed further that there is a fundamental difference between the content of an act of intention, and the meaning that is perceived by someone. They actually may fall together but not necessarily.

Bratman (1999) holds the concept of ‘intention’ to be of central importance if we are to understand ourselves or each other, and he connects intention to both people’s actions and their minds even though intentions expressed by both people’s actions and thoughts may not mean the same. While I do not agree with his separation of people’s actions and their mind, one could argue that people’s actions and their thinking, even when relating to the same issue, may occur at different points in time. For example: I intentionally go to all the classes in order to pass exams (intention characterises my actions after having thought about it), or I intend to go to all classes (while I miss several) to pass exams (intention characterises my thinking but is not followed up by action). Intentions are important because they tie us closely to a wide range of emotional reactions, moral attitudes, and legal institutions.

Our common sense conception of intention is inextricably tied to the phenomena of plans and planning. Bratman (1999, 2) sees people as planning agents: we plan simple or complex things for our future, and then let these plans guide us in our subsequent conduct/actions, so we form and execute plans. Plans may equally not be acted upon for various reasons, and those that are may change as the result of, for example, unforeseen events or a change of plans. This suggests that planning and executing do not need to follow each other in a linear way but may influence each other at various points in time and space. Some plans involve others: coordination of time schedules and actions, sharing resources, passing on knowledge in a structured way and so on (*e.g.* Brysbaert 2013 for planning in the context of construction). Finally, in both Husserl’s and Bratman’s work on intentions and intentionality, the level of unconsciousness, the unplanned and the invisible are not considered a part of intentionality (see *e.g.* Rinofner-Kreidl 2000, 176-179). However, specific levels of invisibility in discussions of production processes and specific social practices in the context of crafting do not necessarily stand in contrast to intentionality (see below).

While necessarily brief and coarse, I outlined above how architecture is important in people’s lives and what roles it may play in shaping social relationships, guiding behaviour, and forming identities. I next wanted to clarify how intentional actions function in people’s daily lives as part of being conscious humans and as part of how our mental

capacities are directed towards an object, in this case the processes of building and decorating surfaces. With these considerations in mind, I discuss below the role that painted plaster in Minoan, Mycenaean and east Mediterranean elite buildings (*cf.* Brysbaert 2004; 2008) may have played in group bonding, forging identities and establishing and maintaining social status. These paintings, independent from the technique(s) employed in executing them, roughly cover the period from 1900 to 1200 BC.

4 BRONZE AGE AEGEAN AND EAST MEDITERRANEAN ARCHITECTURE AND ITS PAINTINGS

Many Bronze Age elite complexes in the Aegean and the east Mediterranean have often witnessed several periods of construction and decoration, expansion, repair, and rebuilding, spanning many generations of workers. For the Aegean, this is especially clear at the multi-period sites of Knossos (Evans 1921-1935), Phaestos, Mycenae (*esp.* French 2002), Tiryns (Maran 2001, 113, 119; 2010, 2012, 2016), and Thebes (see Dakouri-Hild 2001), but can also be observed at many other palaces and sites with elite structures such as Phylakopi (Renfrew 1978; Renfrew *et al.* 2007; Whitelaw 2005, 38) and Palaikastro (MacGillivray *et al.* 1992; 1998) (fig. 1). The same trend can be observed in east Mediterranean contexts such as Tell el-Dab’a (Bietak and Forstner-Muller 2003), Tell Alalakh (Woolley 1955; Bergoffen 2005), Miletus (Niemeier and Niemeier 1999, 543-44), Hattusha (Neve 1993), Tel Kabri (Niemeier 1991, 196; Cline *et al.* 2011), and Qatna (Novák 2005). Many of these multi-period structures were at some point lavishly decorated with paintings on plaster. The first signs of a tendency towards such decoration (but with abstract designs only) were noted at Knossos and Phaestos during the Old Palace Period (Immerwahr 1990, 22-23), while plaster had already been painted red or yellow in Early Minoan II Knossos (Momigliano and Wilson 1996). Paintings of these periods were carried out only *al secco*. Full-blown figurative paintings appeared with the beginning of the New Palace Period on Crete. Decorated paintings appeared in some Cycladic centres (Phylakopi on Melos and Akrotiri on Santorini), on Rhodes (Trianda), and on Kos (Seraglio). A little later, paintings decorated an elite structure at Ayia Irini on Kea and also most Mycenaean palaces became plastered and painted. Generally speaking, one can safely say that Minoan iconography and style of execution had strongly influenced Mycenaean paintings although some themes and motifs, for instance hunting and battle scenes, seem to have been limited to the Mycenaean centres, and also the Cycladic paintings were influential in iconography and style. In a comparative study carried out between Aegean and east Mediterranean plaster, there was strong physical evidence that the Late Bronze Age paintings were carried out *al*

fresco, and that this was clearly intended from the beginnings of the process. In contrast, *al secco* paintings or details were added once the plaster was dry, or in other cases *al secco* may have been used exclusively (Pylos, see Brecolouaki *et al.* 2008; 2012; contra Lang 1969). Technological studies have clarified that some of these paintings on plaster have known several phases of *production* (e.g. at Thebes, Dakouri-Hild 2001; Brylsbaert 2008), *repair* (e.g. Evely 2000, 474), *recycling*, and *destruction*. Recycling can manifest itself in the form of over-painting with even repainting of the same scenes (summary in Brylsbaert 2003; 2004), and hearths' multiple replastering and repainting at Mycenae and Pylos (Lang 1969, 183, 187, 200). Destruction can sometimes be carried out purposefully and can be followed by careful and

attentive deposition (Knossos: Brylsbaert 2003; Chapin and Shaw 2006, 60-63; Gla: Brylsbaert 2003; Pylos: Bennet 2004, 99-100).

The similarities and differences between Aegean paintings and those found in the east Mediterranean (Turkey: Tell Alalakh, Hattusha, Miletus; Syria: Qatna, Tell Sakka, Mari; Lebanon: Tell Burak; Israel: Tel Kabri; Egypt: Tell el-Dab'a, Tell el-Amarna, Malkata) have been attracting wide scholarly attention in past and present scientific discussions. This has been demonstrated most recently at the ICAANE conference in Vienna, 2016. The wide scope of research on painted plaster includes iconographic themes and motifs as well as the style of execution. There seems to be consensus among most scholars that a sort of 'international style' in elite iconography

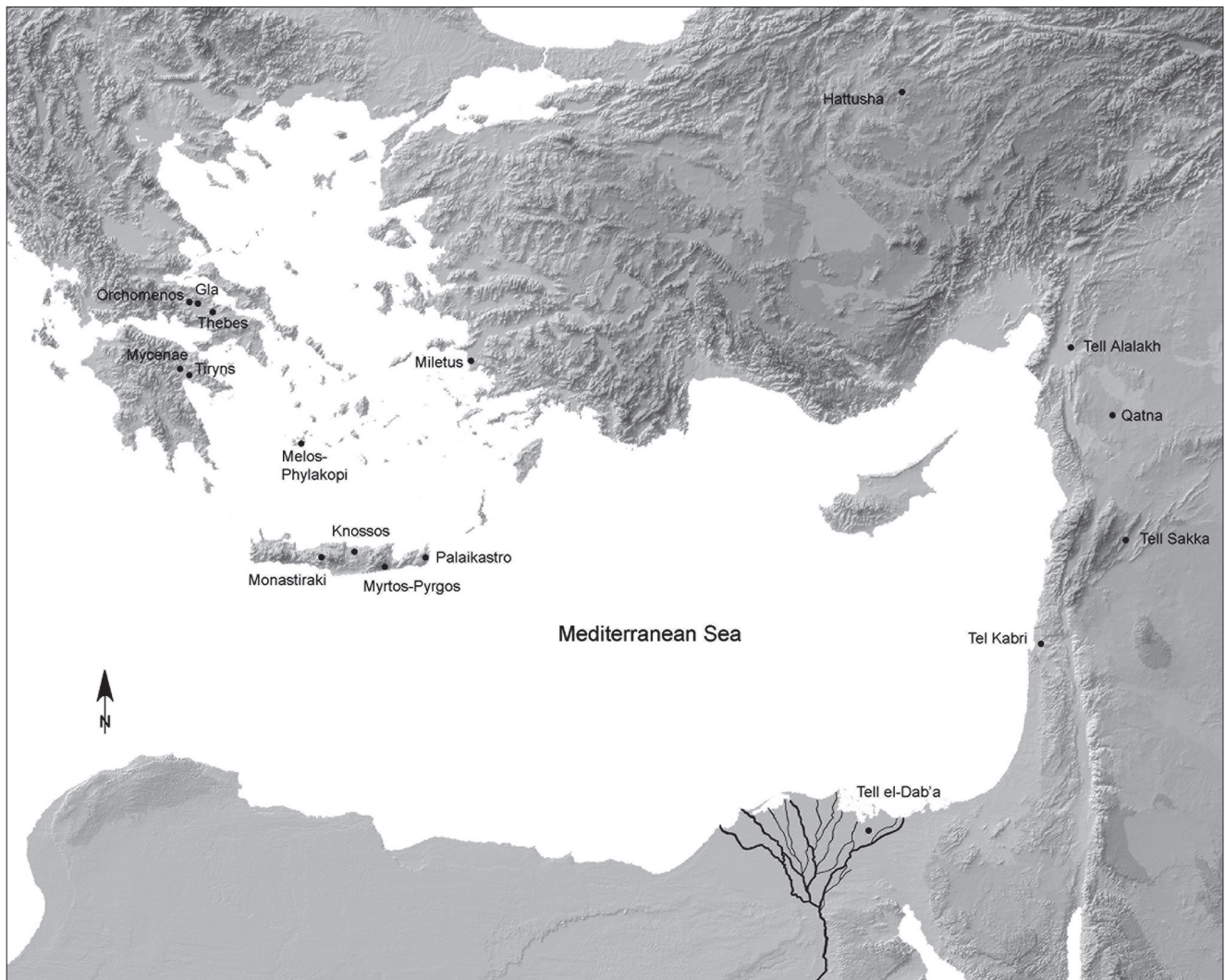


Figure 1 Map of the east Mediterranean indicating the sites from which painted plaster has been studied by the author (map Anavasi editions. Modified by Hans Birk and Roxana Docsan)

came to be established during the Late Bronze Age (e.g. Cline 1994, xvi; Knapp 1998, 198). However, not everybody seems to agree that these paintings formed part of an elite assemblage (e.g. Feldman 2006) even though they disappeared at the end of the Late Bronze Age together with the elite powers, and with them the skills and crafts associated with elite culture. In studying these paintings we address iconography and style, combined with technological processes and craftsmanship, and the social practices identified in the materials themselves including the built spaces in which they appeared. Only then will we be able to fully understand concepts such as an ‘international style’ and to appreciate its full meaning within the context to which it belongs. The ‘international style’ does not represent a solid and static phenomenon but needs to be seen as a dynamic and adaptable, yet a recognisable entity which intersects with local tastes and technologies at specific times and/or locations. These dynamic characteristics are also reflected in the varieties of paintings encountered and in the architectural complexes they decorate: not two of these are the same, but the ‘package’ of features (technology, iconography, style, and context) taken *together* is clearly recognisable among them all.

5 PEOPLE’S INTENTIONS THROUGH BUILDING AND DECORATING

In all these elite locales, while carrying out paintings *al fresco*, at least a group of painters and a group of plasterers were at work simultaneously. Such production processes occurred clearly more than once, some areas even required frequent repainting, such as the painting of hearths. Hence, plans (Lefebvre’s representation of space) must have been prepared, by one or more artisans and perhaps also ‘architects’ to proceed with the work, especially when *al fresco* painting was intended. That this was the case is visible in the physical evidence such as finger and fingernail impressions, snapped ropes, plaster being dragged up by the paint brush, the use of templates pressed into the surface, and polished areas (most prominently Cameron *et al.* 1977; Jones 2005; Lang 1969; Brysbaert 2008, 112-28). Such evidence for *al fresco* has also been reinforced by means of experimental replications (Chryssikopoulou *et al.* 2000) and should not be ignored in view of more recent instrumental analyses indicating *al secco* painting since *al fresco* painting does not exclude the use of *al secco* (esp. Cameron *et al.* 1977; also Brysbaert 2008, 165).

The planning of the *entire* construction, the building *and* its paintings, must have necessitated the strict coordination of many people involved in a wide variety of tasks. These tasks range from the extraction of the necessary materials to processing and refining them, and include work on the building site and on the building and its decoration, with careful supervision needed at many if not all stages (also

Brysbaert 2013). This planning of people’s tasks and the actual tasks themselves are all technological advances that must have gone hand-in-hand with the expansion of the reach of the palace administrations. The magnitude of these planning efforts seem to demonstrate the involvement of various generations of builders and artisans, including people of different ages who likely learned from each other through apprenticeship periods and form, what has been called ‘communities of practice’ (Wendrich 2012; Wenger 1998; also Brysbaert 2017).

Aspects of planning, timekeeping, training and apprenticeships, and workforce coordination, which were brought into a complex synchronic interplay in a specific and confined space, can be understood as technologies in their own right, somehow dictated, or even instigated, by the architecture in which it all took place. Most of these technologies are invisible to us now, but they were nevertheless there and well understood by those who executed the work. Very often they can only be understood if we place a specific technology in context with other technologies. Furthermore we need to have a keen eye for all minute technological and material details. A place like Versailles, for example, with all its richness of architecture, decoration, gardens, and beauty, is bound to impress every visitor (e.g. Duindam 2003), regardless of whether one likes the style of the place or not. The impressive effect is further enhanced by details about the way such a mega-project had been accomplished. This includes the amount of people involved, their skills and the vast variety of materials utilised. It suggests that the role of technology in such a context was to impress at a grand scale, further shown by the demographic figures (Lepetit 1978) indicating a large influx of people to the region to be part of the workforce. Perhaps this was also true for the Aegean and east Mediterranean Bronze Age elites who, through their official and private residences (‘home’), were able to impress people, to include some and exclude others, and through which they could demonstrate their power. In trying to interpret what the iconography of these paintings represented, it seems that the elites had the intention to show their power one way or another: battle and hunting scenes, procession scenes, banqueting and feasting. The expressive power of these scenes was enhanced further by employing a wealth of materials and techniques in painting these. These forms of conspicuous consumption had the sole intention of displaying wealth and emphasizing the elite’s superior place in both religious and political matters.

Once in place and ready to be seen (by a selected few?), the iconographic content of these paintings gives us (in)direct clues as to the many intentions that creators, users and viewers of architecture had over time (Davis and Bennet 1999, 107, 110-11). The people who viewed these scenes

also must have had partial understanding of what these images meant. Some of the scenes may have been frightening to viewers, and may have served as memory triggers intended by the elite to keep people in submission or direct their behaviour in specific ways (McCallum 1987; Thaler 2012). Other scenes may have evoked emotions of awe or enjoyment. According to Wright (2006, 55), scenes depicted on the painted plaster, at least on Crete, function as representations or commemorations of real events relating to rituals, divine epiphanies and specific cosmic cycles and people's positions and duties within these. While Wright (2006, 50) goes on to say that we *experience* space biologically (he probably means physically), whereas its *production* is socio-cultural and its inception is inculcated, clear boundaries between these spheres cannot be maintained since all spatial processes, production, repair, recycling, consumption, and representation are overlapping. We can also experience a space socio-culturally, and it is also produced biologically (physically). If we allow these spheres to overlap and intersect, this will lead to an experience of more than just the building as a theatre backdrop for social interaction and as a container for its paintings. The images and the style in which they are executed may have come to life in the experiences of those present or passing through the painted palace spaces. These paintings thus become agents of intent, and together with the building itself they interact with people. They may guide people in what to do, how to do things, and how to move around. Indeed, two ways of guiding can be distinguished: a) through what is depicted (Cameron 1970; McCallum 1987; Thaler 2012), and b) through changes in surface treatment contributing to sensory thresholds (e.g. Sanders 1984; Thaler 2006), all essentially influencing people's behaviour and their social interactions. These very colourful paintings may come to life as the result of specific rituals performed by the passers-by, including their bodily gestures and their subsequent reactions (McGowan 2006, 43-49), alcoholic drinks, hallucination inducing products, and spinning during dancing. People may also have felt 'looked at' or forced into specific behaviour not just because of the presence of the images on the paintings and perhaps the narrowness of spaces, but also as the result of social peer behaviour and culturally imposed rituals. Equally, people taking part in rituals and maybe even suffering bodily harm and pain, may have temporarily altered their social status during such acts and may have become closer to certain deities (by being in trance). An understanding of what was expected, allowed, necessary, and desired certainly was an integral part of the ability to act in a socially meaningful or perhaps responsible way for those who entered those building complexes.

This bringing to life of paintings and depicted scenes can possibly be identified as the way in which the elite wanted to

impress the palace visitors, both during specific acts that took place on a cyclical basis (*i.e.* yearly or seasonally), and during daily passage through the building. People will have also visited the palace and will probably have seen these paintings when they were merely carrying out quotidian tasks. Even then, the paintings may have evoked or invited a range of feelings and reactions, or perhaps none at all. Confronted with whole series of life-size figures while proceeding in a specific direction on a specific occasion may have had several effects upon people, and may even have influenced the way people walked past the paintings. Elite intentions and strategies resulted in impressing, perhaps even frightening people (especially the non-initiated), and, as such they seized every possible occasion to display their power with all means available.

If we consider the entire palace in conjunction with the paintings themselves, their specific location, access routes and boundaries, and mechanisms of inclusion and exclusion, we may finally reach a deeper understanding of how architecture itself, in conjunction with these paintings, may have actively created social inequality. For example, if some paintings in roofed but half-open spaces like porches were visible from outside, they may have transformed neutral outside space into ritual/religious or ceremonial space when they were activated through ceremonial processions or celebrations. In these cases, neutral spaces are temporarily transformed into religiously or politically charged spaces through the performance of certain rituals or political acts (analogous with the event of carrying the *epitafio* on Orthodox Good Friday in the streets of Greece and similar processions in several regions of the catholic Mediterranean).

As already hinted at above, equally important in comparison to the imagery of these paintings must have been the style of execution (Brylsbaert 2008). In the present context, the style of presenting specific scenes and themes forms a means to indicate either familiarity or to express the opposite: otherness. Furthermore, the very possession of these paintings also strongly demonstrated alongside their iconography a sense of style – an 'International Style' – and the techniques of execution, the membership of an elite class excluding other ranks of society and thus marking social boundaries. These paintings represented a very important part of the elite's 'furniture' in expressing who they were in contrast to other social groups. Also the elites acting in specific ways as a group can be understood as a community of practice: *i.e.* those who learn from their peers what materials and knowledge are needed to belong to the peer group or not. However, the possession of the technology embodied in these paintings cannot have been entirely controlled by the elite, since the artisans themselves were the ones gifted, possibly exclusively, with the relevant skills and knowledge. When finishing their *al fresco* paintings at the

end of each day, they left a damp grey surface behind, which dulled the richly coloured scenes until the entire plaster thickness had dried completely. The artisans were certainly aware of the effect of, and likely even intended, this ‘invisible technology’ that only radiated to its full capacity possibly days or weeks later. While these paintings continued to change well after they were executed, the artisans likely formed an important community within the production processes of these elite architectural complexes, and they could therefore have possessed and exerted a certain degree of influence. In being aware of this, artisans could thereby have acquired a specific form of social status, at least in the eyes of the elite who required their services (Brysbaert 2004; 2008).

A significant distinction seems to have existed between those social groups who could produce, view and perhaps experience the paintings, in contrast to those who could only hear about them. The ability to manipulate this inclusion and exclusion can be considered a technology in itself, when employed to maintain superiority. However, reactions of fear and awe could only have been incited if the image, style, technology and presence of these paintings were perceived by the beholder in the way they were *intended* by the owner. This might not always have been the case. For a variety of reasons, the paintings could have elicited reactions other than those intended. Those groups who were excluded from access to these paintings, or from any material expression of elite power, should not be thought of as passively waiting for the political system to change in their favour. What we may call ‘resistant behaviour’, whether manifest or not, characterises those people who subscribe to new values that exist, for the time being, only in the margins of society. These new values have therefore not yet been incorporated into the control mechanisms of the institutional power (De Carlo 2005, 18). Growth of resistance may thus manifest itself in ‘disorder’ that renews itself constantly, and may have been one of the many causes of the final disappearance of the Mycenaean palace economies. One way such disorder may express itself is through the refusal to read or react to wall paintings, or any form of material wealth, as intended by their owners (similar examples: Given 2004, 8-25). There are always at least two parties involved: those who intend and the ‘target group’. If, over time, the latter could no longer be manipulated in the traditional way, the intended content of the elite’s action in their official (and private) residence no longer has the desired result. This resistant attitude may have prompted the elite’s need for change in images and themes, for new, larger buildings to be constructed and even more lavishly decorated. Hence, the repainting of the architectural surfaces, either with the same themes or with new ones, may have been commissioned out of fear of growing unrest and loss of personal autonomy.

These redecorations potentially occurred in full or partial knowledge of any reaction to what was taking place outside palace walls, since, almost by definition, members of the elite had quite a bit more to lose than the people they ruled over. These elites hence aimed for a reaffirmation of their control over their world. From a different perspective, architecture and its decoration, and the varied technologies that aided the elite in showing off their status, may help to indicate that the so-called collapse of the Bronze Age palaces (c. 1200 BC) did not take place overnight. Rather, it was perhaps a gradual and complex process that found expression in the elite’s tendency towards ever more luxurious displays and their fear of losing status and face. Therefore, these paintings—within their architectural and functional settings related to a range of activities—show, perhaps, two faces:

- (i) A conscious one: Those who own such paintings belong to the elite and have control over technical resources; others do not.
- (ii) An unconscious one: Those who own these paintings are nevertheless insecure towards others and try to keep them at a distance.

Over time, the changing scenes in the same rooms of specific buildings may indicate changing tastes or growing instability, but they may also indicate the need for change, since the first set of scenes had lost its desired effect. However, several forces may be at work simultaneously. (Yearly) cycles of replastering hearths (such as at Pylos and Mycenae) and floors (see for example Qatna, fig. 2), or replastering and repainting the same scenes on top of each other, may have been combined with feasting and celebrating in honour of the ruler in his multiple functions (Thaler 2007). Equally, the frequent reuse of painted plaster in floor fills may be purely practical, because of the compatibility of materials. In addition, though, plaster as fill may have taken on further significance when paintings with specific meanings were not

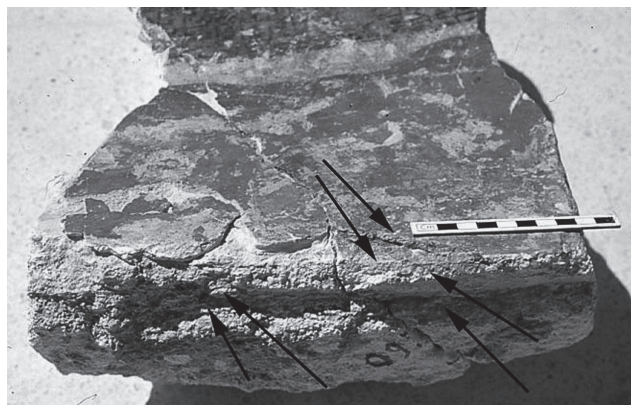


Figure 2 Multiple plaster layers on painted floor section (Qatna, Syria) (Photo Ann Brysbaert)

just thrown out but became part of life as floor fill within the building, in a different setting (see Schulz 1988 on the reuse of the Tiryns throne base). Equally, materials and features that are hidden and were incorporated in later constructions were not necessarily forgotten, but may have continued to function as powerful links to earlier periods and presences (Bryspaert 2015; Maran 2016).

6 ARCHITECTURE’S INTENTIONS THROUGH PEOPLE

So far, architecture itself has remained rather out of the picture; it seems, however, to produce reactions within and among people (awe, fear, comfort) and thus seems to play an active role in social identity formation, relationships and people’s life in general. But, can we go as far as assigning specific intentions to architecture and specific spaces? The meaning of the palatial paintings was previously discussed in the social context of six relationships (fig. 3), while it is now clear that the architecture itself is equally significant because of the active role it plays in meaning-making *together* with the paintings. These paintings sat on specific surfaces and in restricted spaces, both physical and symbolical, where people passed by. Architecture is generally not movable unless it becomes dismantled for reuse, so we relate to it spatially and temporally in ways fundamentally different from the ways in which we engage with movable objects (figs 4 and 5). Since architecture is also fully incorporated in and may be restricted by its surrounding landscape, it also needs to be considered in light of this (Ingold 2000,154, 195-200).

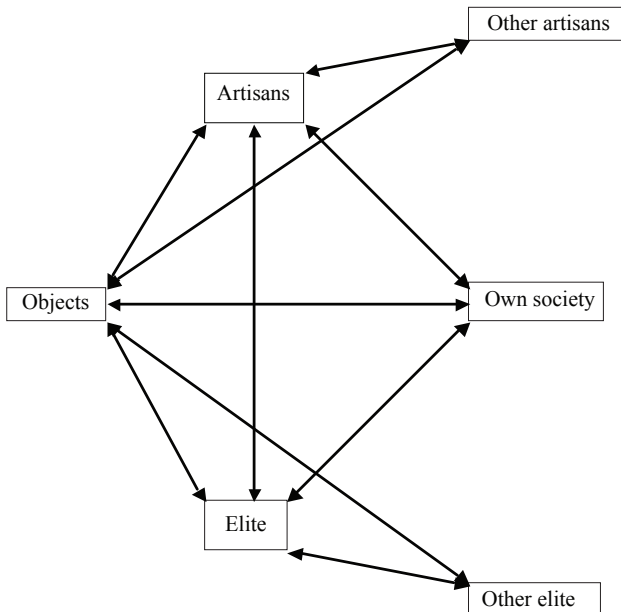


Figure 3 The relationships between each of 6 agents. Each arrow signifies a two-directional relationship or contact

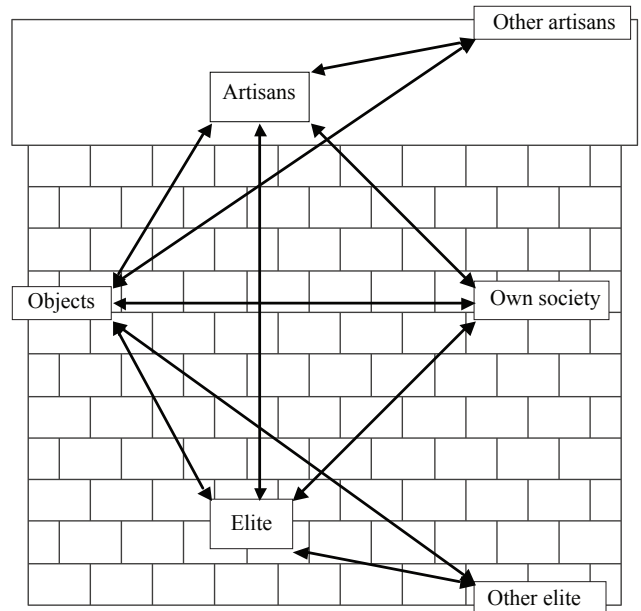


Figure 4 The relationships between each of 6 agents. Each arrow signifies a two-directional relationship or contact. Architecture surrounds all groups and relationships

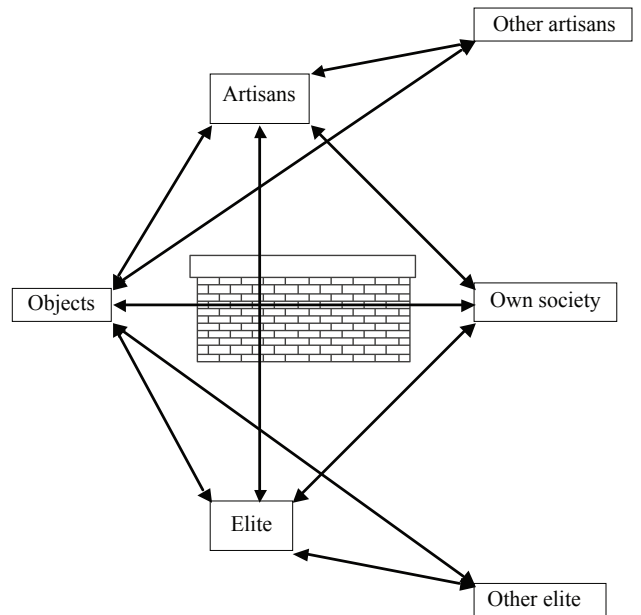


Figure 5 The relationships between each of 6 agents. Each arrow signifies a two-directional relationship or contact. Architecture stands in the centre of all groups and relationships

The production processes (or *chaînes opératoires*, fig. 6) of painted plaster revealed the materials and techniques employed, and we can estimate the amount of people involved in each task, based upon experiments and people's real experiences in doing so. It is the social practices within this craft, however, that illustrate communities of practice as the groups of people that may work *together*, having the *intention* to join forces to produce these paintings or buildings. They may have passed on skills and knowledge to the next generation, possibly in an almost repetitive motion (Wright 2006, 50 calls this 'ritual', but see also Ingold 2011, 51-58). This was possibly carried out through strict control over the younger participants, who learnt via imitation patterns and through active teaching (see Jamshid and Riede 2008, 318-19). In such an actional context, the more experienced workers did not just pass on their knowledge but involved interactively and socially the younger ones in processes that gradually increased the complexity of their participation, engagement, and responsibilities in the work they undertook (Lave and Wenger 1991). These teams, very likely made up of experienced artisans and learners, thus guaranteed the continuity of quality, standards, and ideal recipes. Plasterers intended (planned) to apply plaster onto the wall, in coordination with the painters, so the latter group could, as they had intended (planned), paint the desired scene *al fresco* as much as possible. These artisans thus created *together* amazing decorative programmes in employing a largely 'invisible technology' in confined spaces, which may have confirmed their own status as excellent artisans (see figs 7 and 8; Brysbaert 2008, 112-128).

If these artisans did *not* intend to work together, the plasterers could have started in the morning, while the painters may have been involved in other tasks and only

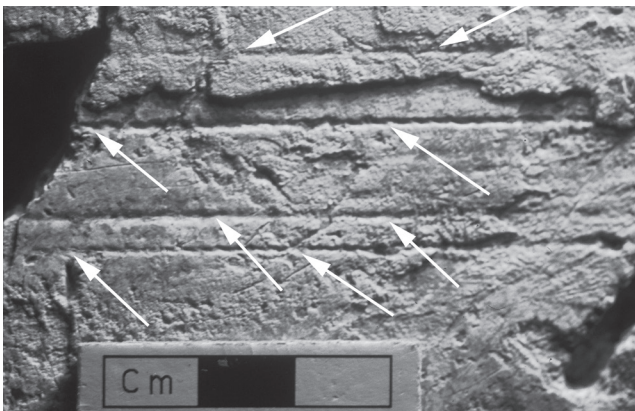


Figure 7 String impression in damp plaster on two different plaster layers, indicated by arrows in different directions (Tell el-Dab'a, Egypt) (Photo Ann Brysbaert)

Material	Action/technological	Number/social
Plaster	Extract	Miners, transport: >2
Pigments	Extract	Miners, transport: >2
Plaster	Load kiln, calcine, check fuel	Plasterers: >2
Plaster	Slake	Plasterers: >2
Plaster	Prepare, apply to wall	Plasterers: >1
Pigments	Prepare from ore: grind...	Plasterers?, painters?: ≥1
Pigments	Prepare, apply to plaster surface	Painters: >2

Figure 6 Two main *chaînes opératoires* within the painted plaster craft

came to the site when the wall was dry, much later on. Precise timing and planning would not matter in that case. So the human intent in painting *al fresco* is crucial for the strict planning, while studying the *chaîne opératoire* of painting on damp lime plaster in confined spaces may reveal social practices and interactions between the two groups that *necessarily* need to work together. Understanding the different processes of painting *al fresco* as social practices entails that architecture as an active and interactive force, paintings included, constructs its own *self*—or at least, it plants the seeds to do so. How does this work?

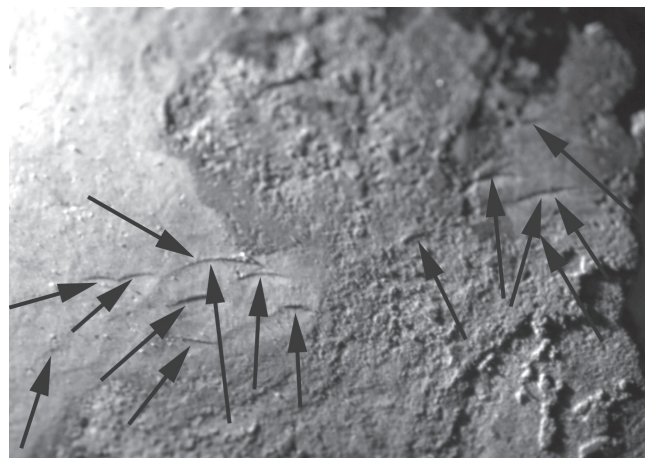


Figure 8 Fingernail impressions near detailed painting *al fresco* (Tell el-Dab'a, Egypt) (Photo Ann Brysbaert)

Earlier we saw that buildings *create* or *order* (my emphasis) empty volumes of space (Hillier and Hanson 1984, 1): architecture produces, and is thus active. Moreover, constructions even become mobile when their building blocks are dismantled and reused elsewhere (e.g. the so-called ‘wandering temples’ in the Athenian agora, brought in during the Roman period: Camp 2001, 184-192). According to McFadyen (2006), builders who work closely together can be seen as fusing together with what they produce, and in doing so, they need to be able to rely on each other (see also Ingold 2011, 51-62). The boundary between the builders and the architecture in/on which they work becomes blurred (see also Mellström 2004, 373 for this same boundary dissolution in men working on machinery). We may see this in, for example, the amount of building material on their clothing and skin, in their hair, under their fingernails, even within their lungs, both during work and after they leave the building site. But this merging of the person with the construction can also be observed in the actual construction, whether building or object.

Evidence of people’s bodily presence in buildings and objects has been amply noted in many material remains. Some were intended, some were not: fingerprints in clay visible on pottery (Hruby 2011), on mudbrick, figurines (Vetters 2009) and imprinted on plaster (Palaikastro and Knossos); tool marks on stone, plaster and metal; mason marks on stone; clothing impressions on plaster (for Thebes, see Brylsbaert 2008); fingernail impressions in painted plaster (fig. 8); deep finger impressions (fig. 9), used to key lime plaster to the backing support (e.g. Qatna, Tell el-Dab’a and Knossos).

All of these examples indicate an intimate and fully sensory contact between the people and the materials they worked with. These materials pass through their fingers, get under their fingernails; they walk on it while possibly feeling the cold and wetness, perhaps also experience a range of different textures. Artisans test, by touching, if a surface is damp enough, smooth enough; they tap it to hear if it sounds correctly in relation to that stage of the working process. While working, people may have even smelled and tasted some of these materials (plasterers certainly do) and thus absorbed these materials inside them. If they inhaled very fine plaster dust, for example, it may have also affected their health, thus affecting their future in their craft. We only need to look at modern Materials’ Safety Data Sheets to understand the extensive hazards of prolonged exposure to quicklime, affecting, for instance, eyes, skin and lungs (e.g. <http://cockburncement.com.au/wp-content/uploads/2014/05/Quicklime-15May12.pdf> [16.1.2015]).

Two final examples of this intimacy between people and materials (see also Ingold 2011) will reinforce the idea that architecture and its materials are indeed active and that built

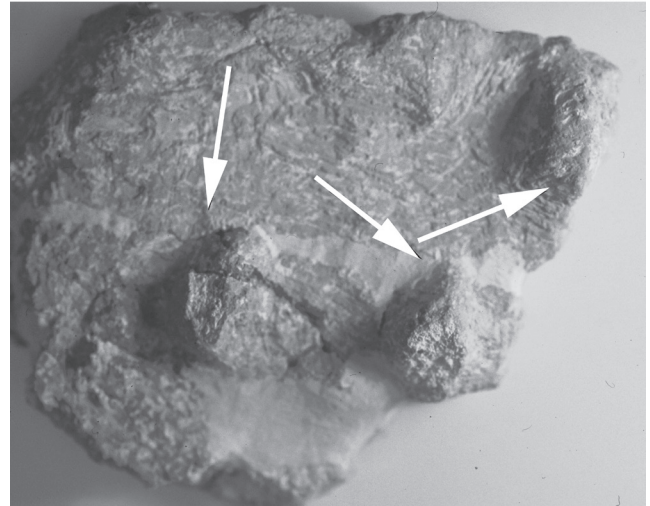


Figure 9 Finger impressions in backing material, now preserved as cast in lime plaster (Gla, Greece) (Photo Ann Brylsbaert)

spaces and their decorative surfaces represent more than a backdrop to social activities. In her ethnographic work on Indian vernacular architecture, Boivin (2008, 6) mentions: ‘...As humans shaped soil, so it likely shaped them and their world’, while Follet (2007, 573) writes: ‘The stone had a will of its own, and if he [the mason’s apprentice] tried to make it do something it did not want to do, it would fight him, and his chisel would slip, or dig in too deeply, spoiling the shapes. But once he had got to know the lump of rock in front of him he could transform it.’

7 CONCLUSIONS

During construction or repair events of both architecture and painting on plaster, builders and artisans of the Minoan, Mycenaean and east Mediterranean palaces and other elite buildings were confined by the spaces which they produced and in which they spent considerable amounts of time. We know (Coopman 2004: pers. comm.) that it may take two plasterers eight hours per day for an entire week to plaster the walls of a 50 m² building with four rooms and one corridor, six doors and four windows, and walls of 3 m height. These figures, however, cannot be taken as the sole parameter to measure time in this context. Of importance too are environmental influences – light, temperature, and relative humidity – and human factors such as levels of skill in carrying out the job well and speedily, the quality of the work, and the tools employed to get the job done. The plasterers interviewed only worked during specific seasons of the year during which the drying rate of the plaster they worked on was relatively stable; we can imagine that plasterers in the past would make similar choices if at all possible. In a

similar vein, levels of skill will have varied in the past as much as they do now. The translation of the above-mentioned figures to palatial contexts can, therefore, only be suggested cautiously.

For the purpose of this paper, the above mentioned figures may help us to understand that both plasterers and painters spent *quite a bit of time* with each other if *al fresco* was intended, in a limited or enclosed space. Having had several chances to interview plasterers and to listen in on conversations between them while they were sitting on the scaffolding (see *e.g.* fig. 10), it became clear that, depending on the stage of their work, they are often very quiet because they concentrate, but they also discuss things. While they talk about many different work-related aspects, sometimes very personal issues are addressed too, such as financial matters, their own personal joys and problems, and even marriages between their children. None of these topics are completely separable from each other.

This was likely not different in similar past working conditions. During these work experiences that brought or forced people together into small spaces and encouraged co-dependence on each other for the success and safety of the work, close bonds must have been created between these workers on many occasions. Moreover, in order to achieve a successful outcome for their work, they *needed* to trust each other and to continue building and maintaining solid trust in the good intentions of the other. It is, therefore, not too difficult to imagine that some of these builders, plasterers, and painters, while interacting with each other across-crafts, passed on their skills to their children and grandchildren, who, in fact, may have continued to work on the same decorated building complexes.



Figure 10 S. Furnari's 2007 sculpture 'Lunchtime on a skyscraper – a tribute to America's heroes' (inspired by Ch. C. Ebbets' photograph of 1932) (Photo Ann Brysbaert)

In this way, I suggest that architectural complexes, their decorative programmes, and their respective technological processes, styles, and imagery looked after their own inception, growth, changes, repairs and additions. These buildings had, in fact, the capacities within their own structures and materials, and were enhanced through the intent of the interacting artisans and their elite owners. The cycles of planning, building and decorating, rebuilding and redecorating, and repair, on the one hand, thus seem to match with cyclic building, rebuilding, and repairing of social and professional relationships between people working in them from generation to generation, on the other. Both people and the decorated architecture they produced and used played active roles in producing and reproducing each other and themselves, whether artisans, or elite communities, or the decorated spaces. As much as there were levels of co-dependence between different groups of artisans while working on a common project, there was co-dependence between artisans and elites too. These levels of co-dependence resulted in forging, realising, and maintaining their own social identities and group belonging. They thus foresaw in the continuation of each other and themselves, and to this extent, each also carried the 'building blocks' within themselves.

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Notes

1 All dates mentioned: after Cline 2010, xxx.

2 “Wenn ich den Kaufvertrag im Wissen um die Bedeutung einer solchen Handlung unterzeichnet habe und dabei “im Geist” auf das zu erwerbene Objekt gerichtet war, dann habe ich gewiß ein intentionales Erlebnis gehabt – auch dann wenn ich mir zu diesem Zeitpunkt des Betrugsrisikos gar nicht bewußt war: wenn ich die intentionale Handlung nicht im Bewußsein der möglichen Nichtexistenz des intendierten Gegenstandes vollzogen habe.”

References

Adams, E. 2007. Approaching monuments in the prehistoric built environment: new light on the Minoan palaces. *Oxford Journal of Archaeology* 26, 359-394.

- Barret, J.C. 1994. Defining domestic space in the Bronze Age of southern Britain. In: M. Parker Pearson and C. Richards (eds), *Architecture and Order: Approaches to Social Space*. London and New York: Routledge, 87-97.
- Bennet, J. 2004. Iconographies of value: words, people and things in the Late Bronze Age Aegean. In: J.C. Barrett and P. Halstead (eds), *The Emergence of Civilisation Revisited*. Oxford: Oxbow Books, 90-106.
- Bergoffen, C.J. 2005. *The Cypriot Bronze Age Pottery from Sir Leonard Woolley's Excavations at Alalakh (Tell Atchana)* (Contributions to the Chronology of the Eastern Mediterranean 5). Vienna: Verlag der Österreichischen Akademie der Wissenschaften.
- Bietak, M. and I. Forstner-Müller 2003. Ausgrabungen im Palastbezirk von Avaris. Vorbericht Tell el-Dab'a/Ezbet Helmi Frühjahr 2003. *Egypt and the Levant* 13, 39-50.
- Blake, E. 2004. Space, spatiality, and archaeology. In: L. Meskell and R.W. Preucel (eds), *A Companion to Social Archaeology*. Oxford: Blackwell Publishing, 230-254.
- Boivin, N. 2008. *Material Cultures, Material Minds. The Impact of Things on Human Thought, Society, and Evolution*. Cambridge: Cambridge University Press.
- Borden, I., J. Rendell, J. Kerr and A. Pivaro. 2001. Things, flows, filters, tactics. In: I. Borden, J. Kerr, J. Rendell with A. Pivaro (eds), *The Unknown City. Contesting Architecture and Social Space. A Strangely Familiar Project*. Boston: MIT Press, 2-27.
- Bratman, M.E. 1999 *Intention, Plans and Practical Reason*. Cambridge: Harvard University Press.
- Brecoulaki, H., C. Zaitoun, S. Stocker and J. Davis 2008. An archer from the palace of Nestor. A new wall painting fragment in the Chora museum. *Hesperia* 77(3), 363-397.
- Brecoulaki, H., A. Andreotti, I. Bonaduce, M.P. Colombini and A. Lluveras 2012. Characterization of organic media in the wall-paintings of the "Palace of Nestor" at Pylos, Greece: evidence for a secco painting technique in the Bronze Age. *Journal of Archaeological Science* 39, 2866-2876.
- Brylsbaert, A. 2003. Rotating angles in measuring the Aegean Bronze Age. The technology of Bronze Age painted plaster from the Aegean and eastern Mediterranean. In: K.P. Foster and R. Laffineur (eds), *METRON: Measuring the Aegean Bronze Age* (Aegaeum 24). Liège and Austin: Université de Liège and University of Texas at Austin, 167-178.
- Brylsbaert, A. 2004. *Technology and Social Agency in Bronze Age Aegean and Eastern Mediterranean Painted Plaster*. PhD dissertation, University of Glasgow.
- Brylsbaert, A. 2008. *The Power of Technology in the Bronze Age Eastern Mediterranean: The Case of the Painted Plaster* (Monographs in Mediterranean Archaeology 12). London: Equinox Publishing.
- Brylsbaert, A. 2011. Technologies of re-using and recycling in the Aegean and beyond. In A. Brylsbaert (ed.), *Tracing Prehistoric Social Networks through Technology: A Diachronic Perspective on the Aegean*. London: Routledge, 183-203.
- Brylsbaert, A. 2013. Set in Stone? Socio-economic reflections on human and animal resources in monumental architecture of Late Bronze Age Tiryns in the Argos Plain, Greece. *Arctos* 47, 49-96.
- Brylsbaert, A. 2015. Set in Stone? Technical, socio-economic and symbolic considerations in the construction of the Cyclopean-style walls of the Late Bronze Age citadel at Tiryns, Greece. In: C.C. Bakels and H. Kamerlings (eds), *Excerpta Archaeologica Leidensia, (Analecta Praehistorica Leidensia 45)*, 69-90.
- Brylsbaert, A. 2017. Artisans versus nobility? Crafting in context: introduction. In: A. Brylsbaert and A. Gorgues (eds), *Artisans versus Nobility? Multiple Identities of Elites and 'Commoners' Viewed Through the Lens of Crafting from the Chalcolithic to the Iron Ages in Europe and the Mediterranean*. Leiden: Sidestone Press, 13-38.
- Brylsbaert, A. and M. Vethers 2010. Practicing identity: a crafty ideal? *Mediterranean Archaeology and Archaeometry* 10 (2), 25-43.
- Cameron, M.A.S. 1970. New restorations of Minoan frescoes from Knossos. *Bulletin of the Institute of Classical Studies* 17, 163-166.
- Cameron, M.A.S., R.E. Jones and S.E. Philippakis 1977. Scientific analysis of Minoan fresco samples from Knossos. *Annual of the British School at Athens* 72, 121-184.
- Camp, J.M. 2001. *The Archaeology of Athens*. New Haven: Yale University Press.
- Chapin, A.P. and M.C. Shaw 2006. The frescoes from the House of the Frescoes at Knossos: a reconsideration of their architectural context and a new reconstruction of the crocus panel. *Annual of the British School at Athens* 101, 57-88.
- Cline, E.H. 1994. *Sailing the Wine-Dark Sea. International Trade and the Late Bronze Age Aegean* (BAR International Series 591). Oxford: Tempus Reparatum.
- Cline, E.H. 2010 (ed.). *The Oxford Handbook of the Aegean Bronze Age*. Oxford: Oxford University Press.

- Cline, E.H., A. Yasur-Landau and N. Goshen 2011. New fragments of Aegean-style painted plaster from Tel Kabri, Israel. *American Journal of Archaeology* 115(2), 245-261.
- Chryssikopoulou, E., Kilikoglou, V., Perdikatsis, V., Sotiropoulou, S., Birtacha, K. and M. Zacharioudakis 2000. Making wall paintings: an attempt to reproduce the painting techniques of Bronze Age Thera. In: S. Sherratt (ed.), *The Wall Paintings of Thera. Proceedings of the First International Symposium. Petros M. Nomikos Conference Centre, Thera, Hellas, 30 August – 4 September 1997*. Athens: Petros M. Nomikos and the Thera Foundation, 119-127.
- Dakouri-Hild, A. 2001. The House of Kadmos in Mycenaean Thebes reconsidered: architecture, chronology, and context. *Annual of the British School at Athens* 96, 81-122.
- Davis, J. L. and J. Bennet 1999. Making Mycenaean: warfare, territorial expansion, and representations of the other in the Pylian kingdom. In: R. Laffineur (ed.), *POLEMOS: Le Contexte Guerrier en Égée à l'âge du Bronze* (Aegaeum 19). Liège and Austin: Université de Liège and University of Texas at Austin, 105-120.
- De Carlo, G. 2005. Architecture's public. In: P. Blundell Jones, D. Petrescu and J. Till (eds), *Architecture and Participation*. London: Spon Press, 3-22.
- Duindam, J. 2003. *Vienna and Versailles. The Courts of Europe's Dynastic Rivals, 1550-1780*. Cambridge: Cambridge University Press.
- Evans, A. 1921-35 *The Palace of Minos at Knossos*, Volumes I-IV. London: Macmillan.
- Evely, R.D.G. 2000. *Minoan Crafts: Tools and Techniques. An Introduction*, Volume II (Studies in Mediterranean Archaeology 92). Jonsered: Paul Åströms Förlag.
- Feldman, M.H. 2006. *Diplomacy by Design: Luxury Arts and an 'International Style' in the Ancient Near East, 1400-1200 BC*. Chicago: University of Chicago Press.
- Follett, K. 2007. *The Pillars of the Earth*. London: Pan MacMillan.
- French, E.B. 2002. *Mycenae. Agamemnon's Capital. The Site and its Setting*. Strand: Tempus.
- Foucault, M. 1979. *Discipline and Punish: the Birth of the Prison*. London: Penguin.
- Giddens, A. 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge: Polity Press.
- Given, M. 2004. *The Archaeology of the Colonized*. London: Routledge.
- Goffman, E. 1959. *The Presentation of Self in Every Day Life*. New York: Anchor Books Doubleday.
- Goffman, E. 1963. *Behavior in Public Places: Notes on the Social Organization of Gatherings*. New York: The Free Press.
- Grahame, M. 2000. *Reading Space: Social Interaction and Identity in the Houses of Roman Pompeii. A Syntactical Approach to the Analysis and Interpretation of Built Space* (BAR International Series 886). Oxford: Archaeopress.
- Hill, J. 1999 Introduction. In J. Hill (ed.), *Occupying Architecture. Between the Architect and the User*. London: Routledge, 1-12.
- Hillier, B. and J. Hanson 1984. *The Social Logic of Space*. Cambridge: Cambridge University Press.
- Hruby, J. 2011. Ke-ra-me-u or Ke-ra-me-ja? Evidence for sex, age and division of labour among Mycenaean ceramicists. In: A. Brysbaert (ed.), *Tracing Prehistoric Social Networks through Technology. A Diachronic Perspective on the Aegean*. London: Routledge, 89-105.
- Immerwahr, S.A. 1990. *Aegean Painting in the Bronze Age*. Philadelphia: Pennsylvania State University Press.
- Ingold, T. 2000. *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill*. London: Routledge.
- Ingold, T. 2011. *Being Alive: Essays on Movement, Knowledge and Description*. London: Routledge.
- Jamshid, J.T. and F. Riede 2008. Towards an archaeology of pedagogy: learning, teaching and the generation of material culture traditions. *World Archaeology* 40 (3), 316-331.
- Jones, A. 2007. *Memory and Material Culture*. Cambridge: Cambridge University Press.
- Jones, R.E. 2005. Technical studies of Aegean Bronze Age wall painting: methods, results, and future prospects. In: L. Morgan (ed.), *Aegean Wall Painting: A Tribute to Mark Cameron*. London: British School at Athens, 199-240.
- Knapp, A. B. 1998. Mediterranean Bronze Age trade: distance, power and place. In: E.H. Cline and D. Harris-Cline (eds), *The Aegean and the Orient in the Second Millennium*. (Aegaeum 18). Liège and Austin: Université de Liège and University of Texas at Austin, 193-207.

- Lang, M.L. 1969. *The Palace of Nestor at Pylos in Western Messenia. Volume II. The Frescoes*. Princeton: Princeton University Press.
- Lave, J. and E. Wenger 1991. *Situated Learning. Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.
- Lechtman, H. and A. Steinberg 1979. The history of technology: an anthropological point of view. In: G. Bugliarello and D. B. Donner (eds), *The History of Philosophy of Technology*. Urbana: University of Illinois Press, 135-162.
- Lefebvre, H. 1974. *La Production de l'Espace*. Paris: Edition Anthropos).
- Lefebvre, H. 1991. *The Production of Space*. Oxford: Basil Blackwell. (translation of Lefebvre 1974).
- Lepetit, B. 1978. Une création urbaine: Versailles de 1661 à 1722. *Revue d'Histoire Moderne et Contemporaine* 25, 604–618.
- MacGillivray, J.A., L.H. Sackett, J. M. Driessen and S. Hemingway 1992. Excavations at Palaikastro 1991. *Annual of the British School at Athens* 87, 121-152.
- MacGillivray, J.A., L.H. Sackett and J.M. Driessen 1998. Excavations at Palaikastro 1994 and 1996. *Annual of the British School at Athens* 93, 221-268.
- Maran, J. 2001. Political and religious aspects of architectural change on the upper citadel of Tiryns. The case of Building T. In: R. Laffineur and R. Hägg (eds), *POTNIA: Deities and Religion in the Aegean Bronze Age* (Aegaeum 22). Liège and Austin: Université de Liège and University of Texas at Austin, 113-122.
- Maran, J. 2006a. Architecture, power and social practice – an introduction. In: J. Maran, C. Juwig, H. Schwengel and U. Thaler (eds), *Constructing Power: Architecture, Ideology and Social Practice* (Geschichte Forschung und Wissenschaft 19). Hamburg: Lit Verlag, 9-14.
- Maran, J. 2006b. Mycenaean citadels as performative space. In: J. Maran, C. Juwig, H. Schwengel and U. Thaler (eds), *Constructing Power: Architecture, Ideology and Social Practice* (Geschichte Forschung und Wissenschaft 19). Hamburg: Lit Verlag, 75-91.
- Maran, J. 2010. Tiryns. In: E.H. Cline (ed.), *The Oxford Handbook of the Aegean Bronze Age*. Oxford: Oxford University Press, 722–734.
- Maran, J. 2012. Architektonischer Raum und soziale Kommunikation auf der Oberburg von Tiryns. Der Wandel von der Mykenischen Palastzeit nach Nachpalastzeit. In: F. Arnold, A. Busch, R. Haensch and U. Wolf-Rheidt (eds), *Orte der Herrschaft. Charakteristika von Antiken Machtzentren. Menschen, Kulturen, Traditionen*. (Forschungslustern 3.3). Rahden-Westfalen: Leidorf, 149–162.
- Maran, J. 2016. The persistence of place and memory: the case of the early Helladic Rundbau and the Mycenaean palatial megara of Tiryns. In: M. Bartelheim, B. Horejs and R. Krauss (eds), *Von Baden bis Troia. Ressourcennutzung, Metallurgie und Wissenstransfer. Ein Jubiläumsschrift für Ernst Pernicka*. (Oriental and European Archaeology, 3). Rahden-Westfalen: Verlag Marie Leidorf GMBH, 153–174.
- Maran, J., C. Juwig, H. Schwengel and U. Thaler (eds) 2006. *Constructing Power: Architecture, Ideology and Social Practice* (Geschichte Forschung und Wissenschaft 19). Hamburg: Lit Verlag.
- Markus, T.A. 1993. *Buildings and Power: Freedom and Control in the Origin of Modern Building Types*. London: Routledge.
- McCallum, L.R. 1987. *Decorative Program in the Mycenaean Palace of Pylos: the Megaron Frescoes*. PhD dissertation, University of Pennsylvania.
- McFadyen, L. 2006. Building technologies, quick and slow architectures and Early Neolithic longbarrow sites in southern Britain. *Archaeological Review from Cambridge* 21 (1), 117-134.
- McGowan, E.R. 2006. Experiencing and experimenting with embodied archaeology: re-embodying the sacred gestures of Neopalatial Minoan Crete. *Archaeological Review from Cambridge* 21 (2), 32-57.
- Mellström, U. 2004. Machines and masculine subjectivity: technology as an integral part of men's life experiences. *Men and Masculinities* 6, 368-382.
- Momigliano, N. and D. Wilson 1996. Knossos 1993: excavations outside the south front of the palace. *Annual of the British School at Athens* 91, 1-57.
- Neve, P. 1993. Die Ausgrabungen in Bogazköy-Hattusa 1992. *Archäologische Anzeiger*, 621-652.
- Nevett, L. 1994. Separation or seclusion? Towards an archaeological approach to investigating women in the Greek household in the fifth to the third centuries BC. In: M. Parker Pearson and C. Richards (eds), *Architecture and*

- Order: Approaches to Social Space*. London and New York: Routledge, 98-112.
- Niemeier, W.-D. 1991. Minoan artisans travelling overseas: the Alalakh frescoes and the painted plaster floor at Tel Kabri (Western Galilee). In : R. Laffineur and L. Basch (eds), *THALASSA. L'Égée Préhistoire et la Mer* (Aegaeum 7). Liège: Université de Liège, 189-201.
- Niemeier, B. and W.-D. Niemiier 1999. The Minoans of Miletus. In : P.P. Betancourt, V. Karageorghis, R. Laffineur and W.-D. Niemeier (eds), *MELETEMATATA: Studies in Aegean Archaeology Presented to Malcolm H. Wiener* (Aegaeum 20). Liège and Austin: Université de Liège and University of Texas at Austin, 543-553.
- Novák, M. 2005. The chronology of the royal palace of Qatna. *Egypt and the Levant* 14, 299-317.
- Rapoport, A. 1982. *The Meaning of the Built Environment: a Non-Verbal Communication Approach*. Beverly Hills: Sage.
- Renfrew, A.C. 1978. Phylakopi and the Late Bronze Age I period in the Cyclades. In C. Doumas (ed.), *Thera and the Aegean World*, Volume I. London: Thera Foundation, 403-421.
- Renfrew, A.C., N. Brodie, C. Morris and C. Scarre (eds) 2007. *Excavations at Phylakopi in Melos 1974-77* (BSA Supplementary Volume 42). London: British School at Athens.
- Rinofner-Kreidl, S. 2000. *Edmund Husserl: Zeitlichkeit und Intentionalität*. Freiburg: Alber.
- Sanders, D.H. 1984. *Behavior and the Built Environment. An Interpretive Model for the Analysis of Architecture in an Archaeological Context and its Testing on Material from the Aegean Bronze Age Site of Myrtos, Crete*. PhD dissertation, Columbia University.
- Schliemann, H. 1886. *Tiryns: die Prähistorische Palast der Könige von Tiryns*. Leipzig: Brockhaus.
- Schulz, T. 1988. Die Rekonstruktion des Thronpodestes im ersten Megaron von Tiryns. *Achäologischer Mitteilungen* 103, 11-23.
- Soja, E. 1989. *Postmodern Geographies: the Reassertion of Space in Critical Social Theory*. London: Verso Press.
- Stöger, J.J. 2011. *Rethinking Ostia: A Spatial Enquiry into the Urban Society of Rome's Imperial Port-Town*. Leiden: Leiden University Press.
- Stöger, J.J. 2014. The spatial signature of an Insula neighbourhood of Roman Ostia. In: E. Paliou, U. Lieberwirth and S. Polla (eds), *Spatial Analysis and Social Spaces: Interdisciplinary Approaches to the Interpretation of Prehistoric and Historic Built Environments*. no. 18. Berlin and Boston: De Gruyter, 297-316.
- Stöger, J.J. 2015. Roman Neighbourhoods by the numbers: A space syntax view on ancient city quarters and their social life. *JOSS The Journal of Space Syntax* Vol 6(1), 61-80.
- Thaler, U. 2006. Constructing and reconstructing power. The palace of Pylos. In: J. Maran, C. Juwig, H. Schwengel and U. Thaler (eds), *Constructing Power: Architecture, Ideology and Social Practice* (Geschichte Forschung und Wissenschaft 19). Hamburg: Lit Verlag, 93-116.
- Thaler, U. 2007. Aḥḥiyawa and Ḥatti: palatial perspectives. In: S. Antoniadou and A. Pace (eds), *Mediterranean Crossroads*. Athens: Pierides Foundation, 291-323.
- Thaler, U. 2012. Going round in circles. Anmerkungen zur Bewegungsrichtung in mykenischen Palastmegara. In: O. Dally, S. Moraw und H. Ziemssen (eds), *Bild – Raum – Handlung. Perspektiven der Archäologie* (Topoi – Berlin Studies of the Ancient World 11). Berlin: de Gruyter, 189-214.
- Vetters, M. 2009. *Die spätbronzezeitlichen Terrakotta-Figurinen aus Tiryns – Überlegungen zu religiös motiviertem Ritualverhalten in mykenischer Zeit anhand von Kontextanalysen ausgewählter Siedlungsbefunde*. PhD dissertation, Universität Heidelberg.
- Wallace-Hadrill, A. 1988. The social structure of the Roman house. *Papers of the British School at Rome* 56, 43-97.
- Wendrich, W. 2012. Archaeology and Apprenticeship: Body Knowledge, Identity, and Communities of Practice. In: W. Wendrich (ed.), *Archaeology and Apprenticeship: Body Knowledge, Identity, and Communities of Practice*. Tucson, Arizona: University of Arizona Press, 1-19.
- Wenger, E. 1998. *Communities of Practice. Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.
- Whitelaw, T. M. 2005. A tale of three cities: chronology and minoanisation at Phylakopi in Melos. In: A. Dakouri-Hild and S. Sherratt (eds), *AUTOCHTHON: Papers Presented to O. T. P. K. Dickinson on the Occasion of His Retirement*. (BAR International Series 1432). Oxford: Archaeopress, 37-69.

Woodruff Smith, D. and R. McIntyre 1982. *Husserl and Intentionality. A Study of Mind, Meaning, and Language*. Dordrecht: D. Reidel Publishing Company.

Woolley, C.L. 1955. *Alalakh: an Account of the Excavations at Tell Atchana in the Hatay, 1937-1949* (Reports of the Research Committee of the Society of Antiquaries of London 18). Oxford: Oxford University Press.

Wright, J.C. 2006. The social production of space and the architectural reproduction of society in the Bronze Age Aegean during the second millennium BCE. In: J. Maran, C. Juwig, H. Schwengel and U. Thaler (eds), *Constructing Power: Architecture, Ideology and Social Practice* (Geschichte Forschung und Wissenschaft 19). Hamburg: Lit Verlag, 49-74.

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