CHAPTER 1. INTRODUCTION: TOWARDS AN ARCHAEOLOGY OF THE SENSES

This chapter critically synthesizes the growing literature relating to the archaeology of the senses and situates it in the light of the emerging interdisciplinary paradigm known as sensual culture studies. It also defines some key terms and concepts. The first section explores the background to these intellectual developments, outlines the core aims of sensual culture studies, and attempts to clarify the nature and applicability of their research methods. The second section examines in more detail the various human senses, and discusses how they have been investigated and interpreted by archaeologists, particularly in recent work on prehistoric Europe and Western Asia. The final section then introduces the rich case-study of prehistoric Malta through which these ideas are re-considered in the rest of this book.

Sensual Culture Studies

Despite the fundamental importance of the senses in human experience, archaeologists have, until recently, neglected the abundant sensory dimensions of the material world they investigate, with the exception of the sense of sight, which has dominated archaeological practice and theory. So, why is the sensual now claimed to be a legitimate area of archaeological enquiry (e.g. David 2002; Hurcombe 2007; Kus 1992; Tringham 2005)? And

if archaeologists are to study all of the senses, particularly in order to produce more comprehensive accounts of past cultural practices, what theories and methods should they use?

Archaeology is not alone in coming to its senses. A 'sensory turn' at the beginning of the twenty-first century has been claimed across a wide range of other fields in the social sciences and humanities (Howes 2006a: 114-5). These include aesthetics, anthropology, architecture, art history, communication studies, history, geography, literary and cultural studies, material culture studies, museology, philosophy, psychology, and sociology. This paradigm shift broadly relates to a general cultural change from nineteenth century industrial capitalism and the religious doctrine of Calvinism, with its emphasis on sensory restriction and the salvation of sinners, to its replacement by the consumer capitalism of today, sometimes characterized in terms of instant multi-sensory gratification. More specifically, the shift stems from the convergence and questioning of a series of key themes previously developed in scholarly studies of social life, notably in thinking about the body and performance, about visual and material culture, and about socio-cultural processes and diversity.

Phenomenologists, interested in determining the essential properties and structures of consciousness and conscious experiences, have generated some of the current interest in the sensuous dimensions of the human body in anthropology and archaeology. They have engaged with the historic and complex philosophical discourse on the nature of the

relationship between the physical body and human knowledge and perception, and have rejected René Descartes' philosophical separation of the body and its senses from the sensibility of a non-material mind or soul (e.g. Stoller 1997; Howes 1991c: 3). For example, the thinking of Maurice Merleau-Ponty (1962), who focussed on the experiential and bodily foundations of perception, has been particularly influential on Christopher Tilley's (1994; 2004) development of a phenomenological approach in archaeology. Through this, Tilley aims to reveal and describe, as precisely as possible, the manner in which human beings experience prehistoric places and landscapes (today and in the past) from the structured point of view of the physical, living, moving, and sensing human body. However, one theoretical problem with this concept of 'embodied' experience is that it favours the solitary individual at the expense of groups of intercommunicating people, while in practice its archaeological application has tended to prioritize the senses of sight and proprioception (understood especially in terms of the position and movement of human bodies in space) at the expense of full-bodied experiences of the world (Edmonds 2006; Hamilakis 2002). Critical theorists and social anthropologists have also reacted against the increasingly homogenized nature of phenomenological discourses on the body, and to the limited attention paid by them to the cultural construction of the senses (e.g. Geurts 2002; Syrotinski 2001).

A second key stimulus for sensual culture studies has been a growing critical reaction against the visual bias (or 'visualism') of modern Western culture, including its communication media, scholarship, and scientific practice (e.g. Classen 1993; Classen *et al.*

1994; Howes ed. 1991; ed. 2005; Jay 1992; Jenks 1995; McLuhan 1962; Synnott 1991). The privileging of sight goes back to the Greek philosophers, notably Plato and Aristotle, and to successive thinkers such as Descartes who made it clear that the sense of science was to be sight. It is also evident in the more recent history of the concept of aesthetics, originally conceived by the Greeks as 'sensation', but which, following its reformulation by Alexander Baumgarten to refer to taste, came to be increasingly associated with elitist value judgements concerning the visual (and aural) appreciation of beauty and fine art (Berleant 1964). However, anthropologists such as Howard Morphy (1992) have sought to disentangle 'aesthetics' from art and to rescue the original significance of the term, by defining it as the effect of the physical properties of objects on the senses, and the qualitative evaluation of those properties, with particular reference to non-Western cultures that conceptualize beauty as involving various senses. This perspective has helped material culture studies move away from the visual appreciation of beautiful things towards a more nuanced understanding of the multi-sensory qualities of artefacts, and of the technologies of communication that help to extend the reach of our bodies (e.g. Classen & Howes 2006; Edwards *et al.* 2006; Finnegan 2002; Gosden 2001). Anthropologists, art historians, architects, and geographers have also criticized the visual bias of their own methodologies, including the extensive use of texts and images to explore, record, and understand things (e.g. Alpers *et al.* 1996; Blesser & Salter 2007; Edwards *et al.* 2006; Rodaway 1994). Archaeologists have, likewise, questioned their use of visual terminologies, such as 'view' and 'perspective', and of visual techniques, such

as aerial photographs, distribution maps, and GIS-based visibility analyses (e.g. Cummings 2002; Fitzjohn 2007; Stepney 2005; Thomas 1990; Tilley 1993; Tringham 2005; Witmore 2006). They have also re-interpreted a variety of rock-art sites around the world, paying greater attention to their non-visual sensory dimensions, including the sounds of hammering on their sometimes resonant or 'ringing' rocks (e.g. Boivin 2004; Goldhahn 2002; Ouzman 2001; Rainbird 2002).

A third essential component of sensual culture studies derives from the contemporary anthropological emphasis on cultural diversity. To this is related the well-established emphasis on context in archaeological interpretation (e.g. Hodder 1986; Kus 1992). A starting point here is to acknowledge that, although all human beings have similar bodies and sense organs, all of which can grow dull with old age, how their capacities are learnt, used and developed begin to diverge at an early age, as children are taught and socialized (Tuan 1974), to the extent that it can be claimed that our senses and sensibilities are culturally as well as biologically constructed (e.g. Geurts 2002; Howes ed. 1991; Rodaway 1994). In other words, the ways in which people use and understand their senses are strongly conditioned by the particular technologies, cultural practices, and conceptual apparatuses employed by human societies in a given place and time. This leads to culturally diverse ways of perceiving and evaluating the world, sometimes referred to as 'sensory orders', 'sensory profiles', 'sensoria', or 'sensuous geographies'. These terms come close to Pierre Bourdieu's (1977) concept of 'habitus', which can be understood as 'sense of one's (and others') place and role in the world

of one's lived environment' (Hillier & Rooksby 2002: 5). Together, they warn us away from imposing our own sensory biases on other cultures. Sensory values are also entwined with social values and rules, which regulate how people learn to use and control their senses, and what access they have to certain kinds of sensory stimuli, such as sex and drugs. As a consequence, within (as well as between) cultures there may exist different sensory orders for different groups based upon age, gender, and status. Due to familiarity (or 'habituation'), these socio-cultural dimensions of the senses are rarely scrutinized consciously, except, for example, during ritual performances designed to actively engage either all of the senses at once or a restricted few in sequence, or when faced with novel situations, objects, or cultural practices. This reminds us that sensory traditions, however conservative, do change over time, just as cultures do. Over the short term, there may be seasonal variations in sensory stimuli, not only in nature, but also in terms of types of food consumed and social activities undertaken at different times of the year (Kuipers 1991). And over the long term, changes in the definition, use and prominence of different senses are inevitable. Smell and taste preferences and aversions, for instance, are strongly determined by custom but are ultimately transformed through a combination of local and wider processes.

These three major themes have led to the formation of the contemporary interdisciplinary research area known variously as the 'anthropology of the senses', 'sensual culture studies', or 'sensuous scholarship', and to a burgeoning academic literature on and around the subject (e.g. Blesser & Salter 2007; Bull & Black eds. 2003; Corbin 1986; Classen

1993; *et al.* 1994; ed. 2005; Drobnik ed. 2006; Edwards *et al.* 2006; Erlmann ed. 2004; Feld & Basso eds. 1996; Finnegan 2002; Geurts 2002; Howes ed. 1991; ed. 2005; Korsmeyer ed. 2005; Pallasmaa 2005; Porteous 1990; Pye ed. 2007; Rodaway 1994; Seremetakis ed. 1994; Stoller 1989; 1997; Syrotinski & Maclachlan eds. 2001; Tuan 1974; 1993; Woolgar 2006; and contributions since 2006 to the journal *Senses and Society*). These studies refer to 'sense' (and the closely related term 'perception') through its two related meanings: as bodily sensation or feeling of stimuli, apprehended through the sense organs (or 'the senses'); and as mental insight or understanding, as in 'making sense'. Nevertheless, they tend to focus on the cultural, social, and political dimensions of the senses and sensory communication, more than on the physiological or psychological dimensions of perception (e.g. Gibson 1968; Goldstein 2002). Broadly speaking, then, the goal of these studies is to explore: how and why the senses are culturally constructed in different societies; how they interrelate with a society's multiple dimensions in a given time and place; and how they are affected by the stimuli and resources of the dynamic natural world. Inevitably, there is a risk of over-emphasising the senses, of overloading the lives of past peoples with heightened sensitivities and sensuousness, and of underestimating individual variations in practical perceptual ability in favour of the sensory characterisation of a whole society (Ingold 2000). However, I do believe that archaeologists can proceed with caution, for the benefit of archaeology, since this perspective should help archaeologists interpret past societies in a fresh manner.

Unfortunately, the methodology used to undertake sensual studies is poorly defined, with a few exceptions (e.g. Corbin 2005; Howes 1991b; Howes & Classen 1991; Rodaway 1994; Smith 2004). Nevertheless, it is possible to collate and evaluate a series of methodological suggestions, especially from an archaeological perspective, under the following five headings.

Reflexivity

This term refers in the social sciences to an acknowledgment of the impossibility of remaining entirely removed from one's subject matter while conducting research, and to an awareness of the researcher's contribution to the construction of meanings throughout the research process (e.g. Clifford & Marcus eds. 1986). In archaeology, a reflexive method has begun to be developed, notably during the course of fieldwork undertaken at the Neolithic settlement of Çatahöyük in Central Turkey (Hodder ed. 2000). Here, the results of the archaeological research have been reflexively related to the present-day context within which knowledge about the historic significance of the site has been produced: using anthropologists to study the impact of the project on the local community and on visitors, and using excavation diaries and videos to encourage the archaeologists to examine their own assumptions and to critically evaluate the excavation process. For sensual culture studies, this highlights the need for scholars to reflect upon the sensory biases inherent in their own approaches, as well as in the

history of their disciplines, which might have led to an emphasis on particular senses and sensory expressions (often visual) at the expense of others.

Inventory

To ‘inventory’ means to make a formal, detailed and complete list or catalogue of all the resources (especially material ones) belonging to a person, place, or institution. For sensual culture studies, it refers, more specifically, to the aim of comprehensively identifying and describing, as accurately as possible, the sensory profile of a particular culture. This has two dimensions. Most importantly, sensual culture studies encourage us to define the range of sensory resources and practices used by different groups within a society, and make out its variation over space and time. Archaeologists can and do, for example, study: food remains, to provide indications of dietary habits and tastes; refuse disposal and hygienic practices; health, illness, and healing practices, with particular reference to human remains; body decorations and mutilations (offering the potential to identify which sense organs are emphasized in the decoration of corpses in burials and in figurative representations of the gendered body); an array of artefacts, seen both in terms of their expressive properties and as evidence of the bodily techniques employed to make and use them; architecture, including the sensory properties of its materials and spatial organisation; technologies of communication and exchange; ritual practices; and the structuring of the landscape and places within it. But, in addition, we might relate this cultural pattern to a record of the full potential range of

natural sensory stimuli (sounds, smells, textures, environments, etc.) that might have been experienced by people, and their variation over space and time. The combined result will simply offer an approximation of the sensory profile of a culture, particularly given the characteristically fragmentary nature of archaeological data. The hope is, however, that, after systematic qualitative analysis of extensive data gathered in the field, library, and museum, it might be a representative profile.

Experimentation

In scientific method, 'experimentation' is the process of performing a set of actions and observations to test a particular theory or demonstrate some fact. Experimental reconstructions of past practices, ranging from battles to boats, comprise a long-established part of contemporary archaeology, and have shed new light on life in the past (e.g. Coles 1979). But such experiments have rarely considered the sensory dimensions of human activities. Phenomenological archaeology, which can be regarded as a form of social science field experiment, has effectively filled part of this gap by describing in detail the embodied experience of archaeologists walking in and around ancient landscapes, sites and monuments (e.g. Bender *et al*. 2007; Tilley 1994; 2004). However, the practitioners of such work have been accused of assuming a certain uniformity between past and present experiences, of visual bias, and of asserting some highly subjective speculations concerning past experiences and perceptions (e.g. Brück 1998; 2005; Ingold 2005). In response to these criticisms, new,

more rigorous, phenomenological fieldwork has been undertaken by Ruth Whitehouse and colleagues in relation to four Neolithic ditched village sites on the Tavoliere plain in South-East Italy (Hamilton *et al.* 2006). This multi-sensory work has the potential to add to our understandings of how these sites were inhabited by people and how they contributed to the construction of sensory orders: not only in terms of revealing the different views of the landscape afforded by different sites, but also differences in the possibilities for bodily communication within and across large and small sites, and differences in the spatial ranges of men and women moving around them.

Thick Description

This term was adopted by the anthropologist Clifford Geertz (1973) to refer to his now widely accepted interpretive method of not only describing a human behaviour, but also trying to explain it with reference to its context of practices and discourses within a society. 'Thick description' is occasionally used by archaeologists (e.g. Tilley 2004; Whitehouse 1995), while the method broadly equates to the well-established contextual approach of interpretive archaeology, which promotes the identification of associations between different elements and levels of archaeological datasets, across space and time, and the use of hypotheses to interrogate their meanings and values, with reference to broader cultural and historical processes. For sensual culture studies, 'thick description' implies not only describing how a culture's sensory resources were used by different people at particular places and times, but

also reflecting on the significance these had for those people. This includes considering: how and why the senses are culturally constructed (in other words, taught, emphasized, controlled, and transformed), and how a society's sensory order interrelates with its broader understandings, identities, practices, materials, and experiences. How far one takes this interpretive process is debatable, particularly in archaeology, where the definition of significance depends almost entirely upon conjectural skill in piecing together ambiguous indications, rather than upon verifiable scientific facts (c.f. Corbin 2005). Nevertheless, attempting to interpret the difference and diversity of past societies, and the sensory experiences and values of people within them, remains a valid goal for archaeology (Thomas 2004).

Creative Writing

Any writing that goes beyond the bounds of established forms of literature can be regarded as 'creative writing'. From the perspective of sensuous culture studies, a good example is Patrick Süskind's (1985) novel, *Perfume: The Story of a Murder*. The plot explores the sense of smell by telling the story of a sociopathic olfactory genius, Grenouille, and his homicidal quest for the perfect scent. Archaeologists, like other social scientists, have begun to question their own historical narratives (e.g. Ballard 2003; Joyce 2002), and, more specifically, the degree to which text (and visual media) do justice to the full corporeality of human practice (Witmore 2004). Nevertheless, there is still scope for creative archaeological writing that attempts to

incorporate all the senses in imaginative scenarios intended to stimulate new thoughts and questions about what life felt like in the past. One of the few (and best) published examples of this kind of writing is by Ruth Tringham (1995; c.f. Edmonds 1999). As part of a scholarly paper on the theme of 'home', she offers a multi-sensory story expressing a young second wife's perception of her new husband's house, drawing upon the rich excavation data from the Late Neolithic village sites of Opovo and Ovcharovo in Bulgaria:

> This house, it's so small. There's no place for anything. He's looking at me. He can see everything. She's watching too. Why doesn't she come in here to keep me company? Tell me what to do. Help me. They're just waiting for me to do something wrong. Have I got to do everything for them? That can't be so. Take their eyes away. Make it dark in here. There's so much light. It's not natural. The oven – at least she's a friend. She looks the same. She must be her. She must be the same one. Where's my little house? I've lost it! Maybe they took it! I need it. I want it. It's my only link with home … It's so quiet here. I feel so alone. Except those flies. No they're not flies. Flies don't suck your blood, and make ugly sores on your face. Where is everyone? It's so quiet. There's nothing to do here, no one to talk to. And it smells. You can't get away from it. Inside. Outside. You can't get away.
>
> (Tringham 1995: 102)

Moving beyond text, the innovative, reflexive, and theoretically informed, use of a mix of written and visual media, including photography, video, drawing, and hypermedia, also offer other ways of engaging the senses in anthropological and archaeological practice (e.g. Bender *et al.* 2007; Pink 2006; Shanks 1992; Tringham 2005; Van Dyke 2006; Witmore 2004).

Beyond the Five Senses

The conventional Western classification of the five senses (sight, hearing, touch, smell, and taste) can be attributed to Aristotle, who chose five in order to correlate them with the five elements (earth, water, air, fire, and aether or 'quintessence' – the divine substance thought to fill the heavens) (Classen 1993). This scheme is rejected by social scientists today, who point out that the distinctions between the five senses are less clear-cut than first thought (especially between smell and taste), and that this five-fold scheme excludes additional senses that feature prominently in some cultures' classificatory schemes (e.g. Howes & Classen 1991; Finnegan 2002; Geurts 2002; Tuan 1974). Below, then, I consider in more detail the senses of sight, hearing, smell and taste, touch, balance, and proprioception, and the sixth sense, before emphasising their interplay under the heading of synaesthesia. I do this again from the perspective of sensual culture studies in general and of archaeology in particular.

Sight

The sense of sight in humans depends, physiologically, upon the response of our visual apparatus to light. Put simply, the lens of each eye focuses an image of its surroundings onto the light-sensitive retina, which converts patterns of light into neuronal impulses, which are then processed by different parts of the brain, resulting in the visual perception we know as sight or vision. Sight is fallible: since our eyes are reliant on light they do not work well in the dark; many of us also suffer from visual disorders or disturbances. Nevertheless, sight is an undeniably important human sense, as indicated by the fact that the visual cortex is the largest of the sensory areas of the human brain, and that more than eighty per cent of our sensory input is visual (Classen 1993; Porteous 1990). Sight helps us synthesize information about the environment as a whole and orient ourselves within it. It helps us differentiate objects in terms of their colour, brightness, texture, shape, size, distance, movement, and so on. It also provides us with a rich resource for actively communicating, using a wide range of culturally-defined bodily and material resources to create and perceive.

'Visual culture' is a vast realm, which can be defined as the dynamic visual forms and processes through which people construct themselves. Visual culture studies represent an interdisciplinary convergence of a variety of subject areas and methodologies concerned with interpreting the symbolic, social, and political dimensions of visual communication (e.g. Berger 1972; Hooper Greenhill 2000; Mirzoeff 1999; Mirzoeff ed. 2002). Visual resources can be divided into two broad and overlapping categories. The first comprises visible bodily movements (or 'kinesics'). These include facial expressions, gestures, postures, and positions,

adopted almost constantly in daily life and special performances (for example, dance and theatre), to convey simple or highly sophisticated messages of receptiveness, hostility, status, and so on, often without the need for speech. The second category comprises visually expressive and stimulating made objects (including 'art', 'artefacts', and 'architecture'). Their variety is impressive, ranging from body mutilations and adornments (for example, coloured cosmetics and clothing), to engravings, paintings, sculpture, installations of meaningful objects, buildings, photographs, and so on.

'Display' is a keyword that lies at the heart of visual culture studies (e.g. Cooke & Wollen eds. 1995; O'Hanlon 1989). When used as a noun, it can be regarded as an event or spectacle; and, when used as a verb, it can also be understood as a process, ranging from exhibiting, to demonstrating, exposing, even flaunting our bodily and material resources. In both regards, display can be considered as an active social performance, which requires both the agency of a displayer and a viewing audience. In terms of spectatorship, this implies not only emotional responses but also preconceptions and relationships of power: the 'male gaze' on the objectified and subservient female body being a much critiqued example. Display, then, has the power to order, represent and convey information. It can be used to understand the world, to educate, to aesthetically please and dazzle the beholder, to construct and differentiate personal and collective stances and identities, to express sexual and spiritual potency, to acquire and symbolize status, power, and authority, to assert or deny a particular political or religious ideology, and to remind us of past images. However, the way in which

display communicates is complex. Display can deliberately deceive and conceal as well as reveal. It can appear infallibly authoritative or ambiguous and open to multiple viewpoints. It can be accepted or contested. Its media, conventions and meanings also change over time. Display reminds us, then, that while 'appearances matter' there is also 'more than meets the eye'.

Contemporary 'interpretative' archaeological approaches to art, material culture and the body complement visual culture studies, while adding a distinctive long-term perspective on transformations in the forms, meanings, and values of visual resources (e.g. Bailey 2005; Fowler 2004; Hamilakis *et al.* eds. 2002; Molyneaux ed. 1997; Moser 2001; Shanks 1992; Skeates 2005; Thomas 1993; Tilley 1991). The almost unbounded range of visually significant cultural material studied by them is comparable. They both emphasize the centrality and embeddedness of the material and the visual in cultural processes. They tend to apply a biographical model of production (birth), distribution (life), and consumption (death) to the study of the life histories of persons and things. They try to pin down the unstable, contingent, and subjective meanings of symbolism (for example, colour and figurative representation) with reference to its culturally variable context, but acknowledge that meanings can be ambiguous, multiple, and even contradictory. They share an interest in uncovering the structured and structuring role of cultural material in the practical, routine, and embodied experiences of daily life, with reference to Pierre Bourdieu's (1977) theory of practice. They both recognize the importance of individual perception, and are therefore

interested in phenomenology and the politics of spectatorship. They share a self-critical and politicized interest in deconstructing the history of scientific thought and its particular visual conventions (or 'ways of seeing'). They also share a concern over our own limitations to appreciate fully those images produced by cultural groups to which we do not belong. Below, I provide a selection of examples.

The identification of culturally-specific bodily gestures, 'techniques of the body', and conceptualisations of the body, associated with productive activities, artefact use, and rituals performed by certain people in particular places and times, is a topic of growing interest within archaeological studies of the body and of figuration. For example, skeletal traumas attributed to specific postures have been linked to some of the new agricultural practices and technologies of the Neolithic, notably at Abu Hureyra in Syria where the strained toes, knees, hips, lower back, and thighbones of girls and women have been attributed to their kneeling for many hours to grind grain (Molleson 2007). Steven Matthews (2005) has drawn attention to the new technical gestures used in the manufacture of bronze swords and in their hand-held use by a male warrior élite in the European Middle and Late Bronze Age. He has also noted a related development over time, from the use of long and narrow rapier-like blades as fast thrusting swords, to much wider and heavier blades used as slashing swords that required more weight and force behind the long action of the arm. Douglass Bailey (2005) has also theorized Balkan Neolithic figurines as 'tools for thinking', which contributed to a process in which people asked questions about their bodies and identities and about those of others. In

particular, he argues that figurines were looked at, held and thought through, as potent, miniature and three-dimensional, representations of the human body (and of other figurines) that evoked strong emotional responses: stimulating and empowering, but also seducing and overwhelming, the senses and thoughts of the people who experienced them, and with socio-political consequences for their sense of identity.

The highly visible association of valuable commodities with the body is a well-established archaeological theme, particularly within mortuary studies. For example, Paul Treherne (1995) highlighted the establishment of new techniques of the body in Late Bronze Age Europe, seen in everyday life and in mortuary rites, and especially in 'warrior graves' centred on the display of the whole and individual body of the male warrior and his personal weaponry, and sometimes also of drinking equipment, bodily ornamentation, grooming tools, horse harnesses, and wheeled vehicles. This visual development, Treherne suggests, was bound up with changing notions of personhood and identity among an emergent male warrior élite, associated with the development of a particular life style (involving fighting, inebriation, riding, and driving), and of a distinctive notion of male beauty, in both life and death.

The visual dimensions of prehistoric architecture, ranging from monuments to houses, have also been considered by interpretative archaeologists interested in the symbolic and social uses and experiences of space. Some of the earliest work is represented by Julian Thomas (1993) and Christopher Tilley's (1993) investigations of the art and architecture of the megalithic burial monuments of Neolithic North-West Europe. Both focused specifically

on the symbolic meanings and politics of visual display embodied in the forms and phenomenological experiences of these monuments. They argued that, as part of the reproduction of society and of privileged positions within it, physical and visual access to these monuments and to the symbolic resources they contained was restricted, both by the form of the monuments and by ritual practice. Whilst their placing in often-prominent positions in the landscape and their monumental exteriors invited and channelled public viewing and movement, only privileged individuals may have gained access to their concealed interiors and to the secret knowledge they contained. Such studies stimulated numerous case-studies, including Aaron Watson's (2001a) reconsideration of people's visual and bodily experiences of the vast Neolithic henge monument of Avebury in South-West England. Its topography, enclosure banks, entrances, and interior standing stone circles would, according to Watson, have ensured the physical and social restriction and transformation of the movement and views of people, both inwards and outwards. Johnathan Last (1998) has also sought to identify Bourdieu's habitus through his study of the art and architecture of Çatalhöyük. He argues that the elaborate murals and mouldings found within the houses were symbolic resources whose significance was embedded within, and acted upon, the routine social practices and experiences of the people who occupied those domestic spaces. Their wall paintings, for example, may have provided a frame-like means of linking the living and dead to the physical space of the house. They may also have marked years in the life of the household when people buried human remains there.

Archaeological studies of people's diverse conceptions, uses and experiences of colour (both innate and applied) at different times and places in the past have recently begun to link many of these visual media (e.g. Jones & MacGregor eds. 2002). They fall into two groups.

One has focused on the categorization and use of a range of socially-valued coloured and luminous substances and objects, particularly in mortuary practices. Stephen Keates (2002), for example, highlights the significance of the luminous copper dagger in the North Italian Copper Age Remedello culture, in which metalworkers deliberately selected arsenic-rich copper to produce whitened (and more durable) daggers, which were later deposited as grave goods associated with adult males, and represented on rock art, sometimes together with solar motifs. Keates also speculates on the possible visual metaphorical associations between the flashing appearance of the copper dagger blades, the sun, and the otherworldly presence of the ancestors. In another study, John Chapman (2003) suggests that, in the Neolithic and Copper Age inhumation burials of the Black Sea cemeteries of Durankulak and Varna in Bulgaria, the introduction of novel materials led, over time, to an increase in the range of available object-colours (including black and dark grey Slovakian and Hungarian obsidian, black Prut-Dniester flint, pinkish Spondylus shells from the Aegean, and copper and gold from undefined sources). This, he argues, created new possibilities for colour classification, and for more impressive and complex colour combinations, display and

communication, linked to the characterization of more complex social personae in the mortuary rites.

Another area of colour research has recorded the selective and patterned use of stones of different colours in the construction of Neolithic and Bronze Age megalithic monuments in the British Isles, and has attempted to interpret its visual and symbolic significance. Frances Lynch (1998) reminds us that, in contrast to the modern archaeological visualisation of these monuments as grey and white weathered remains (often illustrated in black-and-white photographs), the visual impact of their conspicuously coloured stones would originally have been much greater. In the case of Neolithic chambered tombs on the island of Arran in Scotland, Andy Jones (1999) noted that their walls, and especially their façades, were constructed using a patterned combination of red sandstone and white granite or schist, which he connects to the aesthetics of the wider island landscape. He also claims that the deposition of objects of different colours (including the white bones of the dead, red flint knives, and black pitchstone) mirrored areas of light and darkness defined by the architecture of the tombs. By contrast, David Trevarthen (2000) claims that the red, white, and black stones used in the construction of the three Early Bronze Age cairns of Balnuaran of Clava in North-East Scotland were selectively positioned and contrasted, especially in relation to certain solar alignments, with the effect that the front of the cairns would have glowed red in the reflected light of the setting sun around midwinter, the North-East side flash white around midsummer sunrise, and the corbelled interior of the chambers appear darker and more hidden.

Long-term transformations in visual culture represent another area of archaeological enquiry. In my own research on art and social life in prehistoric South-East Italy (Skeates 2005), I have explored how a wide range of visually communicative 'artworks' were culturally produced and consumed over a long period of some 30,000 years, between the Upper Palaeolithic and the Bronze Age. Such objects range from portable and often decorated artefacts, to installations within sites, to monumental structures in the landscape, all of which were interwoven with people's bodies in the experiences of daily life and special performances. More specifically, I argued that these powerful aesthetic objects were actively used by people, across space and time, to perceive the world around them and to reproduce their social lives. They helped people establish personal and collective boundaries, identities, and relationships, acquire and exercise power, promote ideologies, and contest them, particularly at times of social tension.

Hearing

The sense of hearing (or 'audition') responds to vibrations. These are detected by the ears and transformed into nerve impulses that are perceived as sound by the brain. Different animals have a different range of normal hearing for both loudness (amplitude) and pitch (frequency), with humans being able to detect sonic frequencies within a range of 15 to 20,000 Hz. We are consequently able to discriminate a remarkable variety of sounds over time and space. These include: the involuntary sounds produced by our own bodies ('proprocentric hearing'); the

culturally-determined patterned sounds that we produce to communicate with each other, over short and long distances, using our vocal apparatus, other parts of our bodies, and a range of sonorous artefacts; and the complex blends of foreground and background noise (or 'soundscapes') that give significant character and diversity to the acoustic environment around us and to particular places, architectures, and communities within it (Blesser & Salter 2007; Feld 2005; Porteous 1990). Clearly, we communicate aurally through more than the use of a shared spoken language, important as verbal intercourse is to us. But the ways in which we communicate through sounds are inevitably constrained by specific cultural contexts and conventions, which affect how and when sounds are used, and by whom. This is particularly evident in ritual, where certain musical sounds and spoken words can attract or symbolize the presence of spiritual forces (e.g. Hosler 1995; Stoller 1989), and where 'a very high premium is placed on those with the ability to say the correct things at the right time' (Andermann 1991: 232).

The archaeology of sound (or 'archaeoacoustics') is a relatively well developed field, having evolved out of an initial interest in the history of music into a current concern with the definition of culturally-specific soundscapes. Here, again, is a selection of examples.

The origins and development of music and musical instruments stands out as a recurrent, if somewhat idiosyncratic, topic in the archaeological literature. A starting point is offered by Steve Mithen's (2005) book on the origins and evolution of music and language. Mithen hypothesizes that Neanderthals, due to the challenging lives they led (which required

complex emotional communication and inter-group co-operation), developed a complex music-like pre-linguistic communication system, that was multimodal (using both sound and music), musical (temporally controlled, rhythmic, and melodic), and mimetic (utilizing sound symbolism and gesture). However, as far as unequivocal archaeological evidence of human musical behaviour is concerned, the earliest testimony is represented by the remains of various bird bone pipes with up to four bevelled finger holes found at Geissenklösterle in Germany and Isturitz in France, in Early Upper Palaeolithic Aurignacian deposits dated to between 35,000 and 30,000 BP (D'Errico *et al*. 2003). Comparable flutes, whistles, and 'bullroarers' have also been found in European Mesolithic contexts (Morley 2005). 'Lithophones' used during the course of rhythmic ritual performances have also been claimed to have been identified in some Upper Palaeolithic decorated caves in Spain and France (e.g. Dams 1984; Reznikoff & Dauvois 1988; Waller 1993), although not all rock art specialists are convinced. These features take the form of stalactites and other natural concretions, situated in areas of good sound reflection within caves, which arguably bear ancient anthropogenic marks of percussive impact, wear, breakage, and some associated decoration. Less equivocal are the well-known ceremonial bronze horns or 'lurs' of the Scandinavian Bronze Age (e.g. Holmes & Coles 1981). The most common form is an S-shaped conical resonating tube, measuring between 1.5 and 2.25 metres long, with a mouth-piece and a round and ornate end-plate, on which modern trumpeters have been able to blow at least twelve tones.

The acoustic properties of megalithic monuments in Britain have also received a fair deal of archaeological attention in recent years. Acoustic tests, measuring a wide range of acoustic effects, have been undertaken in different parts of Neolithic structures, including the stone circle of Easter Aquorthies in Scotland, the chambered long barrow of Wayland's Smithy in Southern England, and the passage graves of Newgrange in Ireland and Camster Round and Maeshowe in Scotland (e.g. Jahn *et al.* 1996; Watson 1997; Watson & Keating 1999). The interior of the stone circle was found to reflect sound and to create a distinctive echo. The tomb chambers characteristically sustain a strong resonance at a relatively low frequency of around 110 Hz (which lies well within the range of the adult male voice), and, more specifically, the acoustic phenomenon known as Helmholtz Resonance (in other words, the hollow type of sound that can be created by blowing across the top of an empty bottle). The chambers are also conducive of other special acoustic effects, including amplified noises, echoes, multi-directional sound, and distorted voices. The passages transmit sound, but sounds can also oscillate in loudness and pitch within them. And outside the tombs, sounds can be heard clearly emerging from the passage entrance, especially in the centre of the forecourt, while elsewhere only filtered sounds are heard. These experimental results have led to speculation that human chanting and rhythmic drumming was intentionally used by people to activate and sense the resonance of the interior of these structures during the course of ritual performances. Aaron Watson (2001b) has even suggested that the construction of these large stone monuments may have led to the creation, enshrining, and control of a succession

of unfamiliar and powerful acoustic experiences (or 'new worlds of sound') in the Neolithic, which were used to create auditory illusions of connections with the supernatural, and to induce altered states of consciousness in shamanistic performance. Nevertheless, as Watson (2006) acknowledges, it is unlikely that these monuments were deliberately designed as aural architecture.

A few archaeologists have also begun to consider the character of wider and more mundane soundscapes. Steve Mills, in particular, has undertaken some pioneering work. In Southern Romania, for example, he has begun to characterize the texture and structure of sound, as it exists today, in different geographical zones and at different times in the Teleorman River Valley, in which some Neolithic settlements were situated (Mills 2005b). He distinguishes between three overlapping acoustic zones: (1) an eastern valley-edge meadow zone, with permanent dwellings occupied by many people, animals, and insects, characterized by busy, complex, polyphonic auditory scenes; (2) an open valley-floor grassland zone, with fewer and disparate sources of sound and simpler acoustic patterns, which add to its sense of isolation and solitude; and (3) a river zone, characterized by intermediate acoustic patterns.

Attention has also been drawn to the culturally-specific visual emphasis on the aural apparatus of the ears and mouth in figurative representations of the Balkan Copper Age Gumelniţa-Karanovo VI culture, in a unique unpublished study by Dragos Gheorghiu (1999). On figurines of clay, bone, marble, and gold, and on anthropomorphic clay masks, the lower lip and ears are highlighted by applied decoration (including earring perforations), the

decorated ears are oversized, and the mouths are sometimes portrayed as open. Gheorghiu interprets this patterning in terms of a cultural importance attached to these organs, and to hearing and voices. He also notes some gender differences, with, for example, male figurines lacking lip decoration and having no more than one earring.

Smell and Taste

The interrelated senses of smell (or 'olfaction') and taste ('gustation') are biologically and chemically determined by molecules released by substances (such as food or perfume) that stimulate nerve cells in our noses, mouths, and throats, which in turn send messages to our brains. This intimate process enables us to perceive and discriminate a multitude of odours and flavours, both pleasing and harmful. But smell and taste are also highly emotive cultural, social and historical values. The cultural significance of smell is particularly easy to overlook, given the growing sanitization and deodorization of people and places and the replacement of natural smells with artificial fragrances in the West since the mid-eighteenth century (Corbin 1986; Classen *et al.* 1994). But, without wishing to romanticize 'the Other', members of traditional societies may have experienced a richer olfactory geography of natural smells attached to different things and places than that to which Westerners are accustomed today.

The cultural embeddedness of smell and taste is clearly indicated by classifications of them, which, despite claims of cross-cultural uniformity, exhibit significant variability. There is a general tendency for pleasant and unpleasant odours to be distinguished, with, for

example, cultivated nature (such as gardens and woods) generally being thought to have a fragrant smell, in contrast to wild nature, which tends to be associated with putrid or overly-sweet odours (Classen 1993). It has also been suggested that four basic cross-cultural categories of taste exist: sweet, sour, bitter, and salty (Kuipers 1991). Nevertheless, the classification of living things, commodities, places, and times by smell and taste is heavily invested with diverse cultural and social values. Smell is a particularly subtle but powerful communicative resource. Habituation means that, for the most part, we remain largely unaware of the scents of ourselves and our surroundings, which actually comprise 'a rich unconscious background to everything else' (Tuan 1993: 57). Even unpleasant organic odours are generally tolerated in agricultural communities as a natural part of life. But odour is also an important means of defining different categories of people in many societies, with the smell of oneself, close kin, and friends generally being recognized as familiar and pleasant, but that of disliked 'other' groups being distinguished as offensive. Blends of smell can, likewise, help to define the character of different spaces and places, or 'smellscapes' (Porteous 1990), ranging from the deliberately intense aromatic architecture of enclosed religious buildings, to the comforting aroma of home cooking, to the seasonal smells of cultivated fields. Pungent substances are also commonly employed as invisible symbolic agents in magic and ritual, to communicate with beneficial deities and forces, to influence positive dreams, to enhance the boundary-crossing flow of rites of transition, and to drive out harmful odours and forces associated with illness, death, and putrefaction (e.g. Gell 1977). In

all of these contexts, odour also 'has the power to evoke vivid, emotionally-charged, memories of past events and scenes' (Tuan 1974: 10), for odour memory is often acute and enduring. Taste, and the food we chose to take into our bodies, also communicate in similar ways, helping to define our personal identities and our social and cosmological transactions (e.g. Duruz 2007; Pinard 1991).

Archaeologists, apart from identifying the material remains of acts of food processing, drinking, and smelling, such as incense burners (e.g. Hamilakis 2002), have generally ignored the smell and taste of the past. In fact, it is only in recent years that a few have begun to point out the importance of these senses, touching upon some of the key themes to emerge from cultural studies of smell and taste, such as habituation, memory, ritual, and the aroma of commodities.

A good example is László Bartosiewicz's (2003) article on 'Bad smells in antiquity'. Writing as an archaeozoologist, Bartosiewicz draws attention to the unpleasant smells emitted by a range of organic materials in various stages of decay, especially those derived from animals and humans, which would have characterized ancient sites. Heavy odours would have come, for example, from live animals sharing settlements and even houses with humans, from meat processing and carcass disposal, from tanning and fur processing, and from the purple dyeing industry indicated archaeologically by concentrations of *Murex* shells. Although clearly influenced by his own cultural attitude towards 'bad smells', Bartosiewicz does usefully distinguish between strong smells that would have been a constant and unavoidable

part of the cultural landscape to which people would have become accustomed, and new cultural smells emitted, in later prehistory for example, by horses and their manure, wine, or perfumes, which are likely to have been more consciously perceived and interpreted when encountered as novelties.

A more theoretically informed perspective is provided by Mike Parker-Pearson (2003) in his introductory paper on food, culture and identity in the Neolithic and Early Bronze Age. He highlights the potential significance of smell and taste in social life, particularly as a source of evocative symbolism and memories, in contexts ranging from funerary rituals to feasts to mundane meals, with examples of 'smelly' or 'tasty' symbols including burnt offerings, ritual purifications, incense, decomposing and cremating corpses, roasting meat, and honey. He also notes the likely impairment of these senses with age, 'particularly after a lifetime spent inhaling smoke from indoor hearths and fires' (Parker-Pearson 2003: 7).

But almost no archaeologists have gone beyond these preliminary positions, to embed smell and taste into their interpretative narratives. Andy Jones (2001) provides one slight exception, in his interpretation of the presence of meadowsweet (a seasonal plant that flowers in the early summer traditionally used as a flavouring in food and drink) identified in residues of food and drink found in graves in Earlier Bronze Age Scotland. This, he suggests, may have been used as an agent of memory in mortuary rituals to trigger recollections of the early summer.

Touch

The sense of touch is determined by sensory receptors and neurones situated in the skin and central nervous system of the human body. These respond to a variety of skin sensations, including pressure, temperature, and physical pain (especially cutaneous, as opposed to deep somatic, visceral, and mental pain originating in other parts of the body). In this way, our extensive skin surface enables us to feel things, either passively or actively, using various parts of our bodies to touch, assess, manipulate, and manufacture various dimensions of the external world, even in dark and noisy conditions. Touch, then, (often combined with other senses) helps us to experience and perceive, through direct contact with our bodies, the physical dimensions of the wider environment. These include weight, size, shape, texture, plasticity, composition, temperature, relative humidity, movement, and so on. Touch also helps us evaluate these sensations according to biologically and culturally determined degrees of pleasure and pain.

Habituation tends to make us unaware of just how often we touch and are touched by other people and things, and of the cultural codes through which 'We learn what to touch, how to touch, and what significance to give different kinds of touch.' (Classen 2005a: 13). But we regularly 'keep in touch' with people, through the culturally-constrained yet intimate and reciprocal touching of their bodies, not just in sexual intercourse, but also in greeting, supporting, healing, secret communication, and so on. Our relationship with the haptic world of goods is equally important, as manufacturers well know when designing merchandise that

subtly appeals to our sense of touch, as well as our sense of sight (Howes 2005a). Clothing is a particularly good example, for not only does the everyday sensation of wearing it matter, but by covering almost every part of our bodies with it we significantly restrict or modify our contact with the tangible world. Touch in ritual practice can also be more actively used and controlled, as in the case of touching or wearing a symbolic object to express one's faith and to affect physical or spiritual healing. A commemorative function can also be performed through the handling of familiar tools or carefully curated sacred objects.

A few archaeologists have recently begun to emphasize the significance of touch, especially compared to, or combined with, sight. In so doing, they have begun to identify and describe some of the culturally specific tactile dimensions of the material remains they study, and to consider the 'haptics' (the use of touch to communicate) of past societies. However, they have so far focussed attention on the tactile sensitivity of the hands and fingers at the expense of the rest of the body (Rodaway 1994), and on the tactile dimensions of selected technologies and categories of artefacts at the expense of the wider physical environment.

Touch has been considered (also in combination with sight) in studies of Neolithic and Early Bronze Age material culture in Britain. Gavin MacGregor (1999), for example, in his tactile analysis of carved stone balls found in ceremonial, funerary, and habitation structures in Scotland, criticizes previous studies that focussed on the visually striking appearance of these objects. Instead, he describes them in terms of their smooth and incised texture, their cool temperature, their sub-spherical shape when held, and their fully spherical appearance

when spun. However, he also acknowledges that only by viewing would the precise details of these objects' incised decoration have been perceived. Vicki Cummings (2002) has since drawn attention to further categories of British Neolithic material culture with distinctive and contrasting textures, including pottery with its fabric inclusions and incised decoration, chipped stone artefacts, stone axes (physically and culturally transformed from rough to smooth and polished), rock art, and monuments. More specifically, she argues that stones of contrasting rough and smooth textures (and also of contrasting colours, shapes, and provenances) were deliberately used on opposite sides of the Neolithic chambered tombs of Carreg Samson in South-West Wales and Bargrennan in South-West Scotland to influence people's bodily experiences of these monuments in the landscape.

Balance and Proprioception

The 'internal senses' of balance (or equilibrium or 'equilibrioception') and 'proprioception' (or 'kinaesthesia' – which refers to our feeling both for the relative position of neighbouring parts of our bodies and for the position and movement of our bodies in space), are mainly determined by our vestibular system located in the inner ear, but also work together with our muscles and visual system. They help us avoid falling over or dropping things when standing still or moving, and to perceive our orientation and participation in the environment, relative to the scale, location, and movement of our bodies. When impaired, by factors such as tiredness, illness, vigorous movement or drugs, they can cause dizziness, disorientation, and

nausea. These senses fall outside the traditional Western model of the five senses, but are learnt and enhanced as culturally significant skills. The West African Anlo-Ewe people, for example, consider balancing (in both a physical and a psychological sense) to be an essential component of what it means to be human (Geurts 2002).

These senses have generally been ignored by archaeologists, with the significant exception of Christopher Tilley (1994; 2004). Following Merleau-Ponty, Tilley has emphasized our experience of space as being grounded in the human body, particularly in his accounts of his own and prehistoric peoples' personal, embodied, and structured experiences and perceptions of the architecture of megalithic monuments and their landscape settings. This way of thinking enables him, at least in theory, to differentiate space with reference to various bodily dimensions and terms, including above/below, in front/behind, to the right/to the left, here/there, and near/far. In practice, however, Tilley has been much criticized: for imposing onto prehistory his own personal and present-day experiences of ancient monuments and of dynamic historic landscapes; for underestimating the variability of the human body in biological, cultural, social, and historical terms; for prioritizing the sense of sight; and for ignoring the archaeological evidence of palaeo-environmental remains, settlements, and portable artefacts (e.g. Brück 1998; 2005; Edmonds 2006; Gibson 2005; Ingold 2005; Jones 2007). Despite this, there is scope for fresh archaeological studies of balance and proprioception, that attempt to add an historical dimension to the culturally diverse and socially differentiated ways in which people learn to use their bodies and material

resources to perform with efficiency often taken-for-granted actions, such as walking whilst balancing pots on their heads, sitting and sleeping on furniture, or riding horses.

The Sixth Sense and Emotions

The 'sixth sense' (or 'extra-sensory perception' – ESP), refers to some people's apparently innate ability to communicate or perceive in ways and with things that transcend the use of the traditional five senses and that lie beyond the range of normal experience or scientific explanation (in other words, that fall within the realm of the 'paranormal' or 'psychic'). It is often associated with mediation between human beings and supernatural or spiritual forces. Some anthropologists and archaeologists have approached this topic by thinking about shamanistic ritual involving altered states of consciousness (such as ecstasy and trance), sometimes induced by the consumption of stimulants or hallucinogenic substances, but also triggered by particular actions, objects, and situations (e.g. Pearson 2002; Price ed. 2001). But the 'sixth sense' is understood here, more broadly, in terms of strong emotional and intuitive feelings, embodied experiences, and perceptions, including love, joy, disgust, anger, hatred, grief, shame, loneliness, fear, and mental pain or suffering. Emotional responses can be determined, for example, by the scale of objects (in other words, their size in relation to our own body size), so that very small objects may become precious or personal, while very large objects may be experienced as imposing or threatening (Hooper-Greenhill 2000).

The archaeology of emotion is still in its early stages. Sarah Tarlow (2000) initially highlighted the potential of archaeology not just to identify the emotional but also to explore how it has been variously constructed in the past, through bodily experiences, cultural meanings, social values, and personal idiosyncrasies. Alasdair Whittle (2003) has likewise argued that archaeologists should consider emotions (as well as values, ideas, and ideals) as part of the culturally constructed and shared moral frameworks within which prehistoric people acted, particularly towards each other in the routines and rituals of life and death. In practice, however, most research in this area has been somewhat disappointing, often being based upon generalizing or speculative readings of European prehistoric art in terms of shamanism, ecstasy, or traumatic emotional experience.

The 'shamanistic approach' of David Lewis-Williams and Thomas Dowson is a relevant first example. Their cross-cultural model, based upon neuropsychology and ethnographic analogy, sought to explain how and why the art of the Upper Palaeolithic was produced (e.g. Lewis-Williams 1991; Lewis-Williams & Dowson 1988). They argued, with reference to laboratory and ethnographic research, that key elements of Palaeolithic art can be identified either as geometric 'entopic' images that derive from the universal human nervous system or as iconic images that derive from the subject's mind or culture (in the case of therianthropes, 'monsters', and 'realistic' animals). They also suggested that these images were produced by shamanic artists who harnessed visual hallucinations as part of a religion centred on altered states of consciousness, the seeking of visions in dark caves, and a concept

of animal power. However, commentators have recurrently questioned the universality of the authors' claims, particularly given their reliance on the regional rock-art sequence of the Franco-Cantabrian area and just two ethnographic studies (e.g. Bahn *et al.* 1988).

Elaine Morris also claims to have identified ecstatic experiences in her studies of figurative representations in the palatial period of the Bronze Age Minoan civilization in Crete. She suggests that the particular body postures represented by votive anthropomorphic clay figurines and on élite-controlled gold rings and seal stones, including figures standing with their arms raised upward and forward, may portray the intensely physical, ecstatic, body postures (rather than more formal gestures of worship, adoration, and supplication) experienced during the course of religious healing rituals performed at mountain peak sanctuaries, which involved communicating with the divine through a shift of consciousness (Morris & Peatfield 2002). However, as Rosemary Joyce (2005) has commented, there is a danger here of assuming that the forms of the figurative representations can be read literally as actual postures and states assumed by ritual participants.

Another example is provided by Ruth Whitehouse's (1992) book on the ritual use of caves in Neolithic Italy. She considers people's individual and gendered emotional experiences of the powerful ritual symbols encountered in some of these underground spaces, including the painted cave of Porto Badisco, particularly during the course of rites of passage. More specifically, she imagines that secret male initiation rites may have been performed, which could have involved the traumatic separation of children from their mothers, isolation,

deprivation, threats, pain, fear, shock, deception, sensory deprivation, and altered and heightened states of consciousness. But the nature and details of this bold interpretation can be questioned with reference to contextual archaeological evidence and to a less antagonistic theory of gender (Skeates 1994).

By contrast, a more subtle and open-ended commentary on the sensory experiences and emotional impact of a ritual cave has been provided by Daniela Hofmann (2005). She focuses on the elaborately arranged and ornamented Mesolithic burial of the skulls of 34 individuals, predominantly children and females, several of whom had suffered a violent death and subsequent disarticulation, in two pits in Ofnet cave in northern Bavaria. Side-stepping old arguments as to whether this represents a reverential burial rite or a massacre, Hofmann emphasizes the fundamental emotional complexity, ambiguity, and tensions of the site, where conflicting emotions of violence and reverence, anger and love, horror and catharsis, could have been inextricably woven.

Synaesthesia

'Synaesthesia' derives from the ancient Greek word for 'sensation', and literally means 'joining of the senses', although it has various connotations today. According to psychologists and neuroscientists, it is a neurologically-based phenomenon, thought to derive from cross-activation of different specialized regions of the brain, in which stimulation of one sense triggers involuntary experiences in another. For example, in sound → colour synaesthesia

individuals experience colours in response to tones or other aspects of sounds (such as the sound of harps eliciting the experience of seeing a golden colour). In the arts, on the other hand, 'synaesthesia' refers to artistic experiments intended to evoke cross-sensory fusions in an audience by synthesizing different art forms, notably music and painting. Synaesthetic metaphor is sometimes also used in poetry and language (for example, feeling blue).

In sensory culture studies, however, 'synaesthesia' or 'intersensoriality' refers to the interplay of *all* the senses and sensations (or 'qualia'), and it is this broad definition that is used here. The term reminds us that to identify and study the senses separately, or to rank them hierarchically, is an analytical construct, since the world is multi-sensorially stimulating in nature and in culture, and because it is really through a full-bodied combination of the senses that humans perceive the world, communicate, and remember, even though one or two senses may be dominant in a given situation. For example, Steven Feld, the anthropologist of sound, acknowledges that hearing always works with other senses, and especially with sight; as in the case of the Kaluli people of the Southern Highlands of Papua New Guinea, who liken the dense interaction of their visual costume layers, colours, and materials to natural sonic patterns in the rainforest (Feld 1991; 2005). Indeed, in practice, there are numerous situations in which multi-sensoriality comes to the fore, including everyday conversations between people, the preparation and consumption of food and drink, the feeling of a sense of place, the performance of rituals, and the sacralisation of relics, which involve all the senses in a diversity of culturally-defined and socially significant ways. Even artworks can be

understood as synaesthetic, in that all of the senses of their makers contribute to their production, and because more than the sense of sight is involved in experiencing and responding to them emotionally. In this way, 'synaesthesia' lies at the heart of sensual culture studies, with its interest in exploring the culturally diverse ways in which people use all of their senses to perceive and evaluate the world. However, this theory of 'cultural synaesthesia' needs to be tempered by a less unified conception of the human sensorium, in which different values and meanings are attached to different senses, and in which sensory perceptions may be simultaneous, sequenced, or confused (Howes 2006b).

Archaeologists have recently begun to recognize multi-sensoriality, both in theory (e.g. Mills 1999; Pearson & Shanks 2001; Scarre 2002; Tilley 2004; Witmore 2004), and in thinking about the nature and experience of later prehistoric cultural materials and sensory cultures. Indeed, through their primary concern with material culture, they are well placed to do so, since every artefact embodies a particular sensory mix and biography, in terms of the sensory skills and values that go into its making, and in the meanings and uses people discover in or ascribe to it in accordance with the sensory order of their culture or subculture (Howes 2006b).

For example, David Wengrow (2001) argues that decorated pottery vessels of the Late Neolithic Samarran and Halaf cultures in the Near East were 'socially invested with sensuous force': their painted decoration recalling the appearance, texture, and colour schemes of decorated woven containers; and their food contents stimulating the senses of touch, taste, and

smell (not to mention sight). Yannis Hamilakis (1999; 2002) has likewise highlighted the culturally-defined, embodied, and multi-sensory experience of food and related products, with particular reference to Bronze Age Crete. Here, the production and ceremonial consumption of wine (as an alcoholic drink) and olive oil (as a base for perfumes and ointments) were not simply environmental and economic concerns but also related to wider social and political developments, including the legitimating and challenging of élite authority. Mortuary rituals, performed repeatedly in and around communal 'tholos' tombs, incorporating live, dead, and decomposing bodies, comprised one particularly intense, emotive, and memorable multi-sensory context in which these substances were consumed. Other archaeologists have also referred to the synaesthetic experience of ritual performances at other kinds of prehistoric site, ranging from megalithic passage graves in Ireland and stone circles in Scotland, to a mortuary building at Çayönü Tepesi in South-East Turkey, to ritual caves in Italy (e.g. Betts 2003; Croucher 2005; MacGregor 2002; Pearson & Shanks 2001; Thomas 1990; Whitehouse 2001).

Recently, this interest in multi-sensoriality has been extended to quotidian archaeological contexts and the sense of place ascribed to them. Daniela Hofmann (2006), for example, has considered how the internal compartmentalization and partitioning, and external monumentalization, of houses of the European Early Neolithic Linearbandkeramik culture would have impacted on different people's multi-sensory experience of such places, and how these structures and experiences were transformed in the Middle Neolithic. Catherine Frieman and Mark Gillings (2007) have also begun to think about the sensory complexity of the

everyday landscape of an Early Neolithic Körös site, Ecsegfalva 23, in South-East Hungary. This site is situated in a floodplain and is surrounded today by reed-beds, different zones of which can be experienced in terms of different movements, sounds, densities, heights and thicknesses of the plants, and differences in temperature, humidity, light, and wind intensity.

But despite this variety of examples of synaesthesia in archaeological interpretation, all remain case studies restricted to specific archaeological contexts. There remains much scope, then, for larger-scale archaeological studies that seek to define and interpret the 'sensoria' of past cultures in a more complete and dynamic manner. This book attempts that task with reference to the dynamic prehistoric cultures and environment of the Maltese Islands.

Prehistoric Malta

I chose prehistoric Malta as a case-study for working through the ideas and methods currently being generated by the anthropology and archaeology of the senses for three reasons. The first concerns the rich archaeological dataset of prehistoric remains discovered in the Maltese Islands over the last four centuries, which, although incomplete, does lends itself to detailed contextual analysis and interpretation. Indeed, Colin Renfrew has recently written of the prehistoric monuments of Malta that, 'It is more than ever abundantly clear that they offer one of the richest examples in world prehistory of a very early society, non-literate and non-urban, yet with a wealth of architectural and symbolic complexity' (Renfrew 2007: 13). The second

reason is that Maltese prehistory has, over the last four decades, featured in a good number and variety of theoretically informed archaeological publications, which provide a reference point for constructive criticism and new thinking. British social archaeologists have been particularly productive here, addressing themes such as ritual and visual symbolism, social relations, control, identity, long-term cultural change, and the cultural construction of the island environment in prehistoric Malta. The third reason is that I was already familiar with the Maltese Islands, their prehistory and their archaeologists, as a specialist in Central Mediterranean prehistory, but wanted to engage more deeply with all of them – for education and enjoyment.

Given my emphasis on transformations in the sensual cultures of prehistoric Malta, a brief introduction to the traditional sequence of archaeologically-defined cultures and newer calibrated radiocarbon chronology is essential (Figure 1). The earliest evidence of the settlement of the Maltese Islands by farming groups from Sicily belongs to the period dated to between around 5200 and 4400 BC, known as the Early Neolithic or Għar Dalam phase. The following phase of Maltese prehistory can be assigned to a time-span of around 4400 to 3400 BC. It can be described as the later Neolithic, and includes the Grey Skorba, Red Skorba, Żebbuġ and Mġarr ceramic phases. The next phase dates to between around 3400 and 2500 BC. It is commonly known as the Temple Period, and saw the development of the Ġgantija, Saflieni and Tarxien ceramic styles. The following period of Maltese prehistory extends from around 2400 to 700 BC. It is generally known as the Bronze Age, and can be divided into the

Early Bronze Age or Tarxien Cemetery phase (2400-1500 BC), and the Later Bronze Age or Borġ in-Nadur and Baħrija phases (1500-700 BC), with particular reference to the sites where their distinctive pottery styles were first identified.

The methods I have used in this study correspond to those advocated above. The one exception is experimentation, for which I have begun to map the sensory dimensions of caves and of grinding stones used in prehistoric Malta (Skeates 2007; 2008), but still need to explore more fully. My use of a reflexive approach is particularly evident in the following chapter, which explores the history of the senses in antiquarian and archaeological research on prehistoric Malta. The results of my use of inventory, thick description, and creative writing are then presented in the successive chapters. For all of these, my main sources comprised the hundreds of publications that deal directly with the prehistoric archaeology and environment of Malta, as well as repeated visits to the surviving archaeological sites and their contemporary landscape settings, and to the Maltese National Museum of Archaeology's permanent exhibition, while wide reading of the sensual culture studies literature helped me to reinterpret these data. New archival and archaeological fieldwork, also planned for the future, will help to deepen this research. There remains, then, much scope for new work on the archaeology of the senses in Malta, as elsewhere. But although Maltese prehistory needs to be fully sensed to be known, it should at least become clear from this study that Malta's earliest antiquities offer us much more than just a feast for the eyes.