Mary Shepperson

Sunlight and Shade in the First Cities

A sensory archaeology of early Iraq

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Cover image: The city of Ur by the side of the ziggurat. © Mary Shepperson

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"You are the sun, let me warm myself in your rays;
you are the cedar, in your shade let me not be burnt."

Old Babylonian letter to Sinnī from his sister (Oppenheim 1967:92)

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Abstract

This book seeks to explore the relationship between society, culture and lived experience within Mesopotamian cities though the way in which sunlight is manipulated within the urban built environment. Light is approached as both a physical phenomenon, which affects comfort and the practical usability of space, and as a symbolic phenomenon rich in social and religious meaning.

Through analysing ancient Mesopotamian architecture, light is shown to have been selectively admitted, controlled or excluded from built space in deliberate and meaningful ways. Through the reconstruction of these ancient urban light environments, to the extent possible from the recovered architecture, questions of the location, timing and meaning of activities within these cities become accessible. Sunlight is demonstrated to contribute towards the formation, structure and symbolism of cities and their architecture.

Beginning at the scale of cities within the sunlit landscape, the analysis is narrowed to consider city form as a whole, and finally to individual buildings; residential, sacred and palatial. Although this analysis is primarily architectural, it is complemented by extensive consideration of contemporary textual sources, as well as iconographic and artefactual evidence. The development of methodologies for approaching lighting within archaeological contexts forms an integral part of this analysis. The cities under detailed examination are limited to those on the Mesopotamian plain, and the chronological focus ranges from the Early Dynastic periods up to the end of the second millennium BC.

This research represents a novel approach to ancient architecture, demonstrating the utility of light as a tool with which to analyse, not just ancient Mesopotamian settlements, but the built environment of any past society. The influence of sunlight in shaping ancient Mesopotamian cities is shown to be powerful and diverse.

This book is based on my doctoral thesis, submitted to University College London in 2012.

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Introduction

Light does not immediately present itself as the most natural subject for archaeological research. Despite being an important physical component in past environments, it is not something we can find preserved in the ground, catalogue or exhibit. Light has to be approached indirectly through the remains of the things it affected.

The initial idea for examining light in archaeological contexts occurred to me through practical experience of its importance for daily life in the Middle East. Although the need for shade is always clear during the hot summer months, it became particularly apparent one year when I worked through a study season as a finds illustrator on a project in south-eastern Turkey. It was August and the temperature was above 40 °C for most of the day, so many of us would take our desks outside in the hope of catching some breeze. The direct sun being unbearably hot, each day we performed a regular migration around the buildings of the compound with our desks and equipment, chasing the ever changing areas of shade provided by the architecture. I began to think about our nomadic work day and to wonder about activities which couldn't be moved; what if I needed to be by a water tap, or a drain, or a fixed bench? I'd only be able to work for the portion of the day when the required feature was shaded. The positioning of such fixtures relative to the sun and the architecture would then dictate my working day. These factors, I came to realise, must have been at least as important to the Neo-Assyrians whose town we were excavating and in whose unroofed courtyards we found drains and benches and tools. By analysing the interaction of the sun and the ancient architecture it therefore appeared possible to address questions of how and when people in the past used their space. Sunlight could act as a tool for archaeological research.

The sun

As an introduction to what follows, it is useful to briefly consider the sun and its significance to human life both past and present. Although the sun very much rules our lives today, it is easy to forget how much more true this was in the past. The variation of light and temperature over the daily and annual solar cycles can be greatly ameliorated in the modern world through effective artificial lighting, central heating and air conditioning. In the developed world and in temperate regions, solar conditions don't impose

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severe restrictions on the location and scheduling of daily life, in the way that they do in less technologically developed societies and in regions with more extreme climates.

Without the means to produce effective artificial light, a society's working day is largely restricted to the hours of sunlight, and life must be fitted around the solar cycles. In some cases, such as the polar regions, this can be highly restrictive. In the hot regions of the world, such as those examined in this book, the presence as well as absence of the sun can restrict life through the force of its destructive heat. Protection from the sun must be sought during some periods of the day and year as part of the sun's dual character in human life as both beneficial and harmful. At the heart of this is the sun's role in structuring time. In the absence of independent time-keeping methods, it is the sun which defines human time; it marks the start and end of the day, it makes the passage of time visually apparent through the changing shadows and quality of light as it moves across the sky. The sun defines the seasons and measures the years for human societies.

The sun also acts to orient the human world. Across most cultures, including that of ancient Mesopotamia, the passage of the sun is one of the primary means by which direction in space is defined. The daily rising of the sun in the east and its setting in the west draws an axis across the world around which space can be ordered in human understanding, allowing the world to be navigated and categorised.

Finally, the sun itself often constitutes a powerful symbolic force in society. The sun's power over human life and its overseeing position above the earth has resulted in many human cultures ascribing the sun an important cosmological role, whether as symbolic of the divine or as a divine being in its own right. The sun as agent, symbol and metaphor exerts a powerful force on human culture and ideology. As will be discussed later, ancient Mesopotamian culture considered the sun to be a powerful god with specific functions within their society concerning the maintenance of justice and the deciding of fates and judgements on earth.

Guiding lights: aims and objectives

There are three over-arching aims which run through this study in its entirety. The first is to demonstrate the utility of sunlighting as a tool with which to understand ancient settlements and their use. This entails the development of novel methodologies through which light in the past can be made accessible to archaeological research, and the application of these methodologies to the broadest possible range of issues. This approach is intended to be applicable to almost any ancient settlement, although it will generally be of greater relevance in regions where sunlight is more crucial to daily life through either excess or deficiency. This far-reaching aim makes it necessary to encompass a wide range of architectural evidence which is not available at any single site. Consequently this book will draw on the excavated remains of a large number of sites, calling on whichever can provide the most relevant material for each architectural category and research question.

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The second over-arching aim is to identify the particular, culture-specific use and understanding of light and lighting within ancient Mesopotamian civilization and through this to gain a clearer picture of the relationship between climate, the physical built environment and political and ideological structures. Sunlighting represents one of the strongest links between climate and architecture, especially in hot-arid regions such as Mesopotamia. However, this is not a deterministic relationship and different societies find very different ways to adapt their architecture to climate through their own cultural, social and historical processes.

Light also provides a link between ideological and social structures and the physical built environment in Mesopotamia. The sacred significance of sunlight as connected to a powerful deity makes its deployment within the city potentially charged with symbolic meaning, through which it is possible to identify explicit symbolism in the formation of architecture. Also, as the provision or exclusion of sunlight within the built environment is related to how and when space is used, sunlighting can provide a window onto social organisation and the negotiation of space as reflected in the built environment.

Identifying these links between climate, culture and the built environment requires a thorough analysis of the Mesopotamian understanding of light as expressed in the surviving textual and iconographic record, in addition to substantial architectural data.

The third main aim of this research is to contribute a sensory, experiential dimension to our understanding of ancient Mesopotamian urban society. Archaeological narratives about ancient societies are often fairly lifeless, describing the structures of power, the flow of goods and resources from one point to another, or the forms of architecture and material culture. Arguably underlying all interpretation, however, is the mental picture scholars inevitably develop of what it was actually like to live in such a society; the lived experience of the past. This work aims to construct a more informed basis for our understanding of experiential life in Mesopotamian cities. Light primarily affects visual experience; what the world looked like to a person situated in the environment and how its appearance changed through the day. In analysing sunlighting within cities, this study attempts to place interpretation within the context of the visual experience of individuals inhabiting the built environment. As well as the visual landscape, sunlight also affects human thermal comfort and is connected to other aspects of sensory experience, as will be discussed in Chapter 1. This book attempts to repopulate the abstract space of recovered ancient city plans with experiential qualities of light, shade, darkness, coolness and heat.

The way in which individuals experienced their environment can be expected to have affected how they viewed and understood the world around them. Given this, an improved understanding of lived sensory experience will help in the understanding of ideologies and cultural forms within ancient Mesopotamian society.

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Focused questions

In pursuit of these general aims, this book focuses on the following specific questions:
- How was light understood as part of the Mesopotamian visual landscape?
- How did sunlight affect the growth and development of Mesopotamian cities?
- How was the layout of cities adapted to the intense sunlight conditions?
- How did the climatic adaptation of architecture impact social behaviour in the scheduling of activities and the fostering or limitation of social interaction?
- How was light employed in the definition of social boundaries? How did it affect privacy and visibility in urban space?
- Can the specific symbolism attached to sunlight in Mesopotamian culture be detected in the surviving remains of the built environment?
- Was light deployed within the built environment in order to elicit specific human behavioural responses?
- How was lighting used in Mesopotamian architecture for the expression and negotiation of power?

Not all of these questions will be applied to all types of architecture. Instead each will be addressed using architectural evidence most suited to the specific issue, and employing original methodologies designed for the purpose. For instance, lighting in the expression and negotiation of power will be examined through palatial architecture, while the search for explicit symbolism will be focused on temple architecture.

Limits and structure

The regional focus of this work is the Mesopotamian plain, by which is meant the flat area of land surrounding the Tigris and Euphrates rivers from the marshes at the head of the Arabian Gulf in the south, through the alluvial plain and into the foothills of the Taurus Mountains in the north. The study region extends to the east as far as the Zagros Mountains and the western limit is taken as the ancient site of Mari in south-eastern Syria. The choice of this geographical range is intended to balance the need for a sufficiently broad data set to address the wide range of proposed questions, with the need to discuss light within a unitary cultural and environmental context. This does not mean that either the environment or the culture is considered to be homogenous within these limits, but there are broad commonalities of topography, religion and material culture within this area which do not extend substantially beyond it.

The chronological range under examination is also broad, extending from the beginning of the Early Dynastic period in the early third millennium BC up to the Bronze Age collapse in the late second millennium. However, in some parts of the study this range is stretched even further to include textual and architectural examples from the first millennium where they are particularly illustrative. As with the study region, this range reflects the need to encompass sufficient evidence to address

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the wide-reaching aims of the work. The central chronological focus reflects the earliest periods for which both extensive textual and extensive architectural evidence are available. Also, as with the geographical region, these periods display a general continuity of urban, architectural and political forms. While the first millennium BC offers abundant architectural and textual evidence, the imperial political structures and city forms which characterised this period represent a significant discontinuity from what came before. Examples from the first millennium are therefore employed only in a comparative role.

Chapter 1 sets out the theoretical basis of this research, exploring theories of light, space, vision and human perception across the disciplines of archaeology, architecture and anthropology. **Chapter 2** outlines the practical basis of the methodologies employed in the rest of the book, along with detailing the textual and comparative ethnographic sources examined. **Chapter 3** summarises what is known from textual and iconographic sources about the ancient Mesopotamian understanding of the sun; its motion, effects and significance. This is intended to allow the understanding and interpretation of the light environments constructed by ancient Mesopotamian cities in Mesopotamian cultural terms.

Chapter 4 is the first of six chapters examining the physical remains of the built environment, including both foundation plans and standing features. This begins in chapter 4 at the scale of sunlight in the landscape and its potential effects on the development and overall form of the cities within that landscape. In **Chapter 5** the scale of analysis is contracted to consider urban layout; the pattern of streets, houses, squares and courtyards. City plans are explored in relation to climatic adaptations, and in turn, the impact of these architectural adaptations on Mesopotamian society is considered. The changing distribution of sunlight and shade in urban landscapes is used to examine the likely location and timing of daily activity.

Chapters 6, 7, 8 and 9 reduce the scale of analysis further, each considering a different category of architecture at the scale of individual buildings. **Chapter 6** explores the architecture of domestic housing, concentrating on the relationship between lighting, access and privacy through the distribution and orientation of doorways. Chapters 7 and 8 both explore temple architecture. **Chapter 7** looks at an example of the overtly symbolic deployment of light in architecture. This concerns the role of the sun god as the god of justice and the practical administration of legal judgement at temple gateways. **Chapter 8** considers the light environments in which offerings were made within temples. The theatrical use of light is explored in the structuring of sacred experience and in providing symbolic religious narrative. **Chapter 9** deals with the architecture of the recovered palaces. The internal distribution of light and the shading of unroofed courts is analysed in terms of its use in expressing power around the person of the king and in providing behavioural cues to visitors and courtiers.

The conclusions of this research are presented in **Chapter 10**, outlining the specific findings in relation to the specific questions stated above and assessing the extent to which the overall research aims have been achieved.

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1: Enlightenment: theories of light, space, form and vision

Light constitutes a common ground for the interests of many disparate disciplines. It represents an essential subject of study across areas as diverse as science, art, architecture, psychology, anthropology and philosophy, with theories of light and vision dating far back into antiquity (Zajonc 1993). All these approaches bear some relevance to the understanding and application of light in archaeological contexts, but together represent a body of theory far too vast to treat here in any comprehensive manner. Consequently, the scope of this chapter will be limited to a few major themes which inform the approach I wish to take, along with a consideration of their relevance to current archaeological research. Issues which have a specific application to only one part of the study have been dealt with, where possible, in the relevant chapter; lighting in religious architecture, for example, is discussed at the beginning of Chapter 7, which examines temple architecture. Similarly, theories of light as part of the landscape are reserved for Chapter 4. What is intended here is simply to outline basic themes which run through the entire book and inform its methodology, direction and conclusions.

Archaeology, space and light

In considering light, it is impossible to separate ourselves from the study of space. Light is transformed and expressed within space, and the form of space is revealed to our perception by light (Lam 1977; Summers 2003). Archaeology, though having little to say on lighting, has long been concerned with the analysis of space. As light is an integral part of living in space, many of the arguments and theories applied to the analysis of the spatial environment are also relevant to the luminous environment.

Materialist, processual approaches towards the analysis of space within archaeology take much of their direction from ecological theory. Spatial organisation and architecture are viewed as essentially functional adaptations to environmental and economic factors (Binford 1978; Hayden & Cannon 1983). The built environment is seen as substantially shaped by the physical restrictions of the natural environment and the practical needs of human life. Light, despite being itself non-material, lends itself very well to this kind of materialist analysis, as the physical properties of light

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and the sensitivity of the human eye combine to place practical limitations on the use of space. For example, intricate tasks such as weaving or writing cannot be performed in very low lighting. Conversely, it is uncomfortable to work for extended periods in strong direct sunlight. These practical considerations are the main concern of most architectural theories to do with lighting, which seek to produce comfortable and functional built space (see below pp. 27–32). The physical, practical considerations around the use of light are very real and of great consequence to architectural form; any study of light in the built environment must keep these firmly in mind. However, there is much more to the analysis of light environments than the physical properties of light, architecture and space.

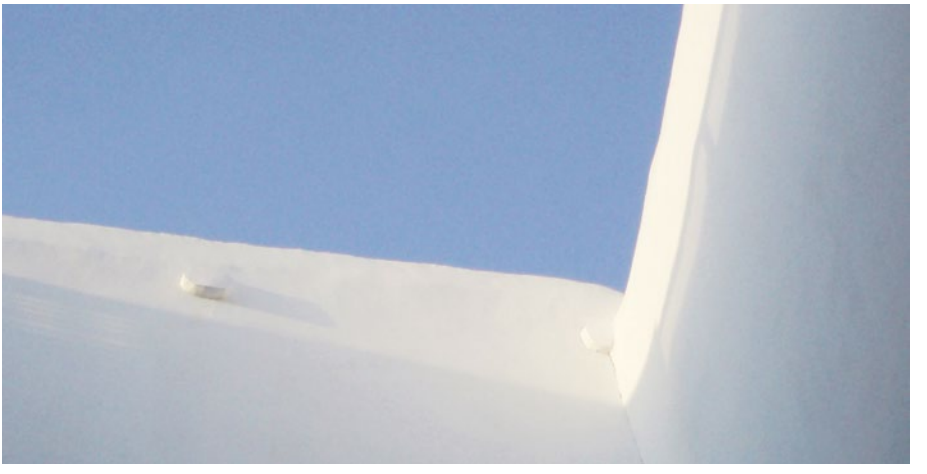

Figure 1.1 Courtyard of the Danish Institute, Damascus.

Post-processual approaches aim to consider space more as a medium for human action rather than simply as a container of it (Tilley 1994:10). Space is not considered as just neutral volume, but is seen to be imbued with value and meaning. Spatial analysis is more closely linked to human society and is concerned with differentiating space in terms of meaning. Space is characterised in connection with ideology and social relations, and as embodying concepts such as status, gender, privacy, purity and sacredness (Douglas 1966; Locock 1992; Rapoport 1994). Space is meaningful, and so the action of people within space, and their construction of space, is also considered to be filled with meaning. To phrase this in another way; "People actively give their physical environments meanings, and then act upon those meanings" (Parker Pearson & Richards 1994:5).

Such approaches see the relationship between society and the light environments produced by architecture as a reflexive one. The illumination of architectural space is a product of, and a response to, social practice and ideology; social practice and ideology is in turn structured and influenced by the symbolism, meaning and utility of the light environment. This draws directly from theories of spatial analysis as

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developed by such as Lawrence and Low (1990) and Hillier and Hansen (1984), who viewed the relationship between society and spatial organisation as being each generative of the other. Light is, of course, part of the spatial environment, as well as having significance above and beyond it, and so is part of this relationship between people and the space they shape around them. The manipulation of light in built space is one of the means through which society and culture is reproduced in space; cities create their citizens as much as the reverse (Hall 1966).

Through a range of approaches, archaeology has sought to address the human experience and perception of space, as well as its social context. Phenomenology attempts to place the consideration of how space was experienced by individuals at the heart of spatial analysis (Tilley 1994:11–12). Space is viewed in terms of human bodily action within it, and in terms of embodied sensory experience of it. Lighting can be viewed as a highly under-utilised factor in advancing these aims, which have generally suffered from a lack of means by which to practically access sensory experience in the past. The potential use of lighting to address these kinds of issues has been theorised by Mikkel Bille and Tim Sørensen (2007) but not applied in practice. Although this work will address sensory experience in a broad sense, it is not primarily a phenomenological study. There remains considerable doubt, for reasons discussed below (pp. 23–25), as to the essential feasibility of phenomenology.

Finally, an emerging archaeological approach to space is through the developing technologies of digital modelling and virtual reality. Tools such as 3D modelling and GIS are increasingly used to analyse visual aspects of environment, such as viewsheds, isovists, sightlines and lighting. The use of visual modelling techniques has great potential for the study of light, as they have the capacity to model the interaction of architectural form and changing light conditions accurately, dynamically and flexibly. However, lighting is rarely the focus of studies using computer-based modelling techniques, which tend to address questions of visibility, somewhat perversely, in isolation from questions of lighting. The obstruction of view by physical obstacles is modelled, but not usually the visual restrictions of available light or light-shade contrast (Ogburn 2006; Wheatley & Gillings 2000:6–7). Viewsheds and sightlines are most commonly analysed in a light-neutral landscape held in a static state of fairly evenly distributed illumination (Devlin *et al* 2002; Earl & Wheatley 2002; Fisher *et al* 1997; Llobera 2007). Similarly, 3D reconstruction models, which have excellent potential for the dynamic illustration of changing lighting in ancient architecture, generally follow the tradition of the reconstruction illustrators which preceded them; structures are shown in a static light environment, usually chosen for its production of an attractive balance of light and shadow. The aim of virtual reality is too often presentational rather than interpretive (Devlin *et al* 2002; Earl & Wheatley 2002:5; Goodrick & Earl 2004). This occasionally extends to the modelling of lighting conditions which are actually impossible in the real world. These techniques have consequently tended to contribute to, rather than to erode, the often somewhat sterile, idealised understanding of ancient architecture pervasive within archaeology. By necessity, archaeologists are in the business of reducing buildings to clean ground plans and isomet-

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ric diagrams, of waiting hours to photograph excavated structures when they are not obscured by strong lighting contrasts. The modelling of past architecture naturally tends towards representations which make all the features of structures as visible and clear as possible, rather than confusing the clarity and permanence of form with the fleeting visual effects of light.

Light itself has occasionally been addressed directly using visual modelling techniques. One fairly typical example is an attempt to model the interior lighting of Thule Inuit dwellings by stone lamps using 3D modelling and experimental data (Dawson *et al* 2007). While this study incorporates a refreshing focus on the restrictions which low architectural light levels impose on human activity, the scope is very limited and the methodology rather tortuous. For all the sophistication of technique, the conclusions reached – that Thule dwellings were dark, that the light provided by stone lamps is poor, and that therefore the performance of intricate tasks would have been difficult – seem somewhat banal when the space under consideration is a windowless, semi-subterranean arctic hut. Studies of this sort serve equally to demonstrate both the great potential of visual modelling techniques to address questions of lighting in archaeology, and the failure so far to use them effectively to do so.

Major stumbling blocks exist which inhibit the widespread use of digital modelling for the analysis of lighting in the past. Standard, accessible, software packages for 3D modelling do not usually allow full control over lighting, meaning that the accurate modelling of light is restricted to those with a high level of specialist knowledge (Devlin *et al* 2002). Creating an accurate lighting model also requires an enormous amount of technical information, such as the quality of sunlight at the site, the type of fuel being burned in hearths or lamps, and the colour and reflective qualities of the various surfaces (e. g. Papadopoulos & Earl 2009).

It might be expected that phenomenology would embrace digital visual modelling as a possible means of gaining the desired access to human experience of past environments, but this has not generally been the case. The use of visual computer modelling in archaeology has been criticised on a number of grounds, usually based in phenomenology's relativist approach to vision and perception which considers the act of seeing as a social, political and cultural action, and as an indivisible part of fully embodied sensory experience (Frieman & Gillings 2007). One example of such a critique is Matthew Fitzjohn's work (2007) on the Troina Project in Sicily; a landscape survey project around a cluster of rock cut tombs which used GIS to address past visual experience and sense of place. Fitzjohn found that GIS analysis of viewsheds and intervisibility bore very little relation to how he saw the landscape or how it was understood by the local people:

> "Indeed, how I viewed these rock cut tombs, what I saw en route to them or observed from them, changed not only because of differences in vegetation or the effect of light conditions but more importantly according to my experiences and the context in which I encountered them."
> (Fitzjohn 2007:38)

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The tension between digital modelling and phenomenological approaches to vision in space perhaps lies in that one approach tends to ask *what* was seen, while the other asks *how* it was seen. In this study I will attempt to engage with both of these questions.

The archaeosensorium: light, perception and sensory anthropology

> "Man has no Body distinct from his Soul; for that call'd Body is a portion of Soul discern'd by the five Senses, the chief inlets of Soul in this age."
> (William Blake 'The Marriage of Heaven and Hell' 1794, plate 4)

Underlying most architecturally-based theories of light and vision is an anthropological assumption; that all people see in more or less the same way. When vision is considered in an archaeological context, this assumption has to be extended further to presuppose that all people have *always* seen in more or less the same way. As human visual perception underpins much of what this study presents, and as a significant general aim of this work is to contribute a sensory dimension to the understanding of past societies, it is appropriate to explore how sensory experience and human perception is understood. The assumption that everyone experiences the world in the same way has received criticism from several quarters, most significantly in the last few decades from a growing body of work loosely termed sensory anthropology.

Sensory anthropology raises a series of objections to previous intellectual positions adopted towards perception and sensory experience. An initial point is the general omission of the sensual, bodily aspects of human life from intellectual enquiry; that traditional scholarship offers only worlds of "sensorial poverty" (Howes 2005:1). Identified as the root cause of this absence is the Cartesian division of body and mind, whereby the mind, where thought and reason are situated, can be considered separately from the body, which is viewed as the receptor of unreasoned sensuality (Stoller 1997:xii). The mind is therefore the proper subject of intellectual research, while the sensual body is not (Howes 2005:7). This, it is argued, has left traditional scholarship fundamentally flawed in its denial of the basic human experience of the world through bodily sensation, and has lead to an overly literate or linguistic view of how culture and society function (Gell 1998:6; Howes 2005:1; Howes 2003:57: Stoller 1997:xiv). Structuralism, for example, uses the linguistic metaphor of grammar to describe the structuring principles underlying social forms (Lévi-Strauss 1963). An example from the field of archaeology might be the work of Ian Hodder, which models culture explicitly as a text which can be 'read' and re-read (1986). But the human experience of the world is not like reading a text; life is not read, it is seen, touched, tasted, smelled and heard.

Sensory anthropology promotes the *embodiment* of intellectual approaches to society and culture (Howes 2005:7). The division of mind and body is considered to

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be false. Instead, thought and perception are seen as situated in the environment and involving the entire human body, within which no part can be considered in isolation (Gosden 2001:163; Ingold 2000:3–4; Rodaway 1994:4–13). The senses are not regarded simply as passive receptors which feed raw data into the mind for analysis, but are considered to be modes of thought in themselves. As such, perception becomes an active process through which human agency is exercised in the environment, rather than the in-flow of information from an exterior world into a self-contained individual (Gosden 2001:163; Ingold 2000:4).

Significantly, sensory anthropology regards perception as a learned behaviour (Rodaway 1994:11). The senses, being themselves interpretive thought processes, are structured and conditioned by the social and physical environment in which they develop. Physical conditions are thought to influence the relative cultural importance of various sensory experiences; Feld, for example, suggests that societies which inhabit environments with a limited visual range, such as forests, will tend to attach greater social significance to sound, hearing and speech within their culture and attach relatively little meaning to visual experience (Feld 1982:180). This argument naturally extends to the sensory environments which people substantially create for themselves. Buildings and cities, by this understanding, structure not just *what* people perceive, but also *how* they perceive.

Perception is also considered to be culturally conditioned by symbolic and social structures. (Baxandall 1988:29–40; Coote 1992:247; Howes 2005:5; Howes 2003:xi; Rodaway 1994:13). Every culture attaches different values and meanings to various sensory phenomena and visual experiences, which in turn structure an individual's sensitivity to different stimuli; it affects what people are looking for in the world. A prime example is Constance Classen's study of the Desana people of the Amazonian rainforest (2005). For the Desana, colour has great social significance and important cosmological meaning; the yellow of sunlight, for example, is associated with male procreative power. In consequence the Desana are highly sensitive and reactive to different colours. Classen considers that by equating sensory experience with social and cosmic values, culture is transmitted and understood, not only through language, but through lived bodily experience. Individuals learn to "perceive the world aright" (2005:162). Far from the passive receptors of information, the senses are seen as being imbued by society with political, social and moral meaning (Ingold 2000:250–252).

In effect, this means that people from different cultural and environmental backgrounds inhabit essentially different sensory worlds (Hall 1966:2). Placed in the same environment, they do not hear or see the same things because they are culturally conditioned to listen and look for different features; sights and sounds that are meaningful or significant in their own cultural context (Baxandall 1988:34; Corbin 2005). Individuals perceive the world through a cultural filter. Michael Baxandall provides a good discussion of this for the case of Medieval Italian art. The viewer is considered to interpret a painting by fitting the new information into an established mental stock of patterns, categories and cultural conventions, which have been instilled in

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the viewer through their personal experience and cultural background (1988:29, 32). Each individual effectively interprets the world in their own "cognitive style" (1988:30). This presents a problem for the phenomenological aim of understanding past cultures through exploring human experience in the past; even if it was possible to reconstruct the experience, we will inevitably interpret it through our own cultural perceptual filters, and not those of individuals in the past.

The understanding of perception as being culturally contingent has important implications for the way in which humans construct an environment around themselves, and consequently for architectural form. It suggests that people will construct sensory environments which are meaningful in their cultural context, and that these environments are therefore expressions of their cultural filters at work; the sensory priorities of a society will be encoded in its architecture (Hall 1966:2–5). To put it another way, people set up worlds which make sense to them (Gosden 2001:167).

At the root of this discussion lies an important relationship between a society's understanding and perception of the world, and the physical environment it builds for itself. This relationship is mediated by sensory experience. The approach of sensory anthropology to this relationship is to study the ideology and symbolic systems of a culture in order to establish its indigenous modes of perception (Coote 1992:247; Coote & Shelton 1992:4; Morphy 1991; Stoller 1997:3). This would allow the society's material culture and physical environment, in theory, to be understood more in its own sensory and symbolic terms. The relationship, however, can also be approached in the opposite direction; by examining the sensory experience constructed by a society through its material culture and built environment, in order to infer some of the sensory elements which were culturally significant to that society's understanding of their world. Having good access to material culture, this is perhaps the direction of approach more relevant to archaeology.

In this study, the relationship between culturally mediated modes of thought and the physical built environment is approached from both directions. The importance of light as a visual phenomenon in Mesopotamian ideology and symbolic meaning is examined through the surviving textual record and iconography, while the constructed sensory experience of light is approached through analysis of the architectural remains. In this way, it is hoped, Mesopotamian ideology and culture might be understood from a more embodied perspective, and placed within the context of its physical environment. Similarly, such an approach makes it possible to relate the material architectural remains more closely to symbolic systems of meaning within Mesopotamian culture.

The sensorium

Light, of course, is most intimately connected with the sense of vision. However, this does not mean that this book is only concerned with visual sensory experience; indeed, it is highly questionable whether any sense can be meaningfully discussed in isolation from the wider experience of perception (Howes 2003:47; Ingold 2000:282;

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