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**Conceptualization of 'Xihuitl':
History, Environment, and Cultural Dynamics in Postclassic
Mexico Cognition**

Mutsumi Izeki

**Institute of Archaeology
University College London
Ph.D. Archaeology
31 March 2007**

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Abstract

My research is concerned with how the Postclassic Mexica people developed their unique perspective of history and environment in a dynamic cultural context. By focusing on the process of conceptualization of the Nahuatl word 'xihuitl', I analyze the way the Mexica expressed their cognition. Xihuitl covers a range of meanings: 'turquoise', 'grass', 'solar year', 'comet', 'preciousness', 'blue-green' and 'fire'. To group these meanings may seem odd because there is nothing to connect them that is intuitively obvious in the modern sense. I propose that xihuitl represents an aspect of cognition peculiar to the Mexica, and is linked especially to the economic, political and religious concerns of the Mexica elites. The meanings covered by xihuitl were not established at one time but were a product of history—the history of the Mexica's experiences in and of their ever-changing environment.

The correlations of the meanings of xihuitl can be explained from a structural point of view. However, structural analysis does not reveal the dynamic experiential processes that produced such correlations in the minds of the Mexica. In order to account for this dynamic aspect of the concept, I employ a theory drawn from cognitive science. This theory argues that the meanings and representations of a concept are metaphoric extensions that derive from the central sense of the concept. Applying this theory, I examine the metaphoric extension of each xihuitl representation from the central sense. I also analyze the four media of expression—linguistic, iconographic, material and ritual—in which representations of xihuitl occur. The representations of xihuitl in each medium embody a particular aspect of the concept. At the same time, the concept as a whole was affected by the Mexica conceptual system—the way the Mexica saw their world—rooted in the connections they believed existed between themselves and those who established earlier Central Mexican civilizations.

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Chapter 1 Introduction

The theme of this study comes from three theoretical issues that affect the study of Mesoamerican cultures: first, how to interpret and describe ancient people's thought; second, how to treat a 'concept'; third, how to define 'material culture'. Although all the topics are connected and have affected my theoretical approach and methods, especially the first two are reflected directly in my choice of the terms for the title of this study.

Interpreting ancient people's thought is always one of the central issues in anthropological and archaeological studies. In Mesoamerican studies generally a reconstruction or an interpretation of a cosmology of the people in the past has been considered the best way to understand 'their' way of thinking. In these studies any sorts of structuralism or hermeneutic approaches have been applied as a main theory of analysis in order to map the past people's cosmology (cf. Tilley 1990). However, we should admit that these pictured cosmologies are always a product of our interpretation composed by our modern points of view and our modern languages, all of which were not shared by the past people. For example, 'turquoise' in our sense is a mineral which is defined scientifically according to its chemical compositions, but a Nahuatl word 'xihuitl', whose definitions contain 'turquoise', would cover a wider range of blue-green stones, simply because the people of ancient Mexico did not share the same chemical method of categorization of minerals that we take for granted now (cf. Pellant 1992: 124; see Chapter 7 for details). In an attempt to deflect the imposition of our modern sense onto the past people's concepts and to minimize the gap between the past people and me, I think a better way to start with would be a native concept in the native language, which is 'xihuitl' in this study, instead of setting up a theme by using our modern terms, such as, 'conceptualization of *turquoise, fire and time*'¹.

The second issue of how to treat a 'concept' can be approached by rethinking differences between cosmology and cognition. As we can observe in some ethnographical reports, 'cosmology' is often described as a cognitive map or

¹ In this thesis, foreign (non-English) words and words with emphasis are italicized, but 'xihuitl' and other Nahuatl proper nouns are not italicized.

picture of the past people, and this pictured cosmology is said to be a static model of how they recognize the world in which they are living. However, human cognition, which is a product of learning and conceptualizing, never stops its metaphoric expansion in our everyday life. For example, periodically we need to revise our dictionaries and encyclopedias because we always experience new things and new concepts, which need to be categorized and digested by our already-established sets of concepts. For example, under the entry of 'mouse', we may find a new definition of 'mouse as a computer's pointing device' in the latest version of modern English dictionary. Then it is natural to think that past people would also have experienced a similar revising process in their minds. Thus, for the purpose of understanding a concept which is dynamic in nature, it may not be adequate just to schematize a cosmology without careful consideration of the history of the past people's language and experience and also of other temporal and environmental changes. In this study, therefore, I try to track the possible experiences of the Mexica people in their diachronic environment, which was thereby shared with past and coexisting people. I refrain from clipping Mexica culture out from its broader contexts or from developing a static picture from what in fact is a large body of thought with a long history and experience. This is the reason I employ the term 'conceptualization' for the title of this study instead of 'symbolism' or just 'concept', both words of which exclude a sense of dynamism.

The concept of 'material culture' is the other important issue also related to the gap between our sense and 'their' thought. As Renfrew & Bahn (1991: 10) define in their introductory book for archaeology, 'archaeologists study past societies primarily through their material remains—the buildings, tools, and other artifacts that constitute what is known as the *material culture* left over from former societies' [emphasis by Renfrew & Bahn]. Archaeology is a study of material culture, and 'the task of the archaeologist today is to know how to interpret material culture in human terms' (Renfrew & Bahn 1991). Naturally when we think of 'material', unconsciously we presume the existence of 'non-material' or probably 'abstract concept without substance' on the other side. However, what we call 'non-material' does not necessarily correspond to ancient

people's 'non-material'. In Maya art 'time' was conceptualized as material, a burden carried by gods (Aveni 1994: 140). Also the Nahuatl term *cahuatl*, which is always translated as 'time' in English, meaning 'the thing which is leaving or which takes something to another place' seems to represent a materialized aspect of 'time' (Karttunen 1992: 20; León-Portilla 1992: 203; Molina 1992: Nahuatl-Spanish 13r; Siméon 1992: 69). In fact the Mexica periodically held a funeral of 'time' and buried bundles of solar years made of stone or of reed in their religious rituals (cf. Chapter 8). It can be said that, at least during that ceremony, 'time' was materialized in their minds. Xihuitl, the theme of this study, contains concepts related both to what we call 'material' (grass, turquoise) and to 'non-material' (preciousness, fire, solar-year, green-blue colour) concepts, but because these Nahuatl concepts were so closely related to each other, it is difficult to determine whether xihuitl was material or not. I apply material culture theories for some analyses in this study, but my main approach is a holistic one which studies all the related expressions of the concept of xihuitl, namely, language, iconography, material (turquoise) and ritual, in order to cover the Mexica sense of 'material' and to address any theoretical incompleteness.

In this way I believe that we can take a closer look at how the Mexica understood their surrounding world and why they wanted to express their cognition in the way they did. In the following sections, first, the objectives of this study are stated, and then the contents of each chapter are summarized.

1.1 Objectives

This study focuses on how the Postclassic Mexica people recognized their history and environment in dynamic cultural contexts. By focusing on the process of conceptualization of the Nahuatl word xihuitl, the way the Mexica expressed their cognition is analyzed. Xihuitl covers the range of meanings, such as, 'turquoise', 'grass', 'solar year', 'comet', 'preciousness', 'blue-green' and 'fire'. To group these meanings into one word seems contradictory, because these meanings do not conform to any kind of classification we have in our modern sense. Therefore,

xihuitl is supposed to represent an aspect of the unique cognition of the Mexica. Also it is logical to think that the range of meanings of xihuitl were not established at one time but composed through the Mexica experience in their ever-changing environment.

Xihuitl can be described as a concept that represents an aspect of the economic, political and religious concerns of the Mexica elites. Its definitions are related in the following way. 'Turquoise' was a precious and rare mineral imported a long way from the Southwest region of the present-day United States and was utilized exclusively by the lords, priests and other politically-religiously influential people in Central Valley of Mexico. Therefore, as the notion of 'preciousness', which is supposed to have derived from the value of this mineral, xihuitl was often used to represent the importance of the existence of the lords and religious beings. As for 'solar year', it was a basic unit of time that composed the Mesoamerican religious cycle. The sun or the celestial 'fire' was one of the main objects of worship, along with the earth, in the Mexica religion. The marking of time produced by the movement of the sun was considered as a major task of the elites through the religious rites. The Mexica conceived 'solar years' as palpable material to be counted and bundled like 'grass'. 'Grass' might have been the most basic definition of xihuitl, and its 'blue-green' colour was associated with both 'turquoise' and the centre of 'fire'. 'Comet' was regarded as another celestial 'fire', which was observed by the priests to predict the future events.

Thus, all the meanings of xihuitl were closely related in the Mexica cosmology or 'cosmovision', the term which has often been employed to describe the worldview of Mesoamerican cultures. According to Broda (1987b: 108), 'cosmovision' is 'the structured view in which the ancient Mesoamericans combined their notions of cosmology relating to time and space into a systematic whole'. In other words, cosmovision is a picture formed by the ancient Mesoamerican people's understanding of their history and environment. However, whereas Broda's definition of Mexica cosmovision explains the structural relations existing among the definitions of xihuitl, it masks the dynamic process of Mexica experience that affected such systematization in their minds.

In order to achieve an understanding of this dynamic and essentially cognitive process, the Mexica conceptual system or dynamic system of conceptualization should be discussed. The term 'conceptual system' is explained by Lakoff & Johnson (1980: 3) as a system in which 'our concepts structure what we perceive, how we get around in the world, and how we relate to other people'. The concept of 'conceptual system' is useful to understand the following four points: 1) how the Mexica viewed their history and environment; 2) what cultural elements they internalized in order to position themselves in these contexts; 3) how they used these elements in constructing their cosmovision; 4) how they constructed their identity in terms of other people and cultures.

In this thesis the Mexica conceptual system is studied in the contexts of four representations of xihuitl: linguistic characteristics and expressions, iconographic expressions, material expressions (turquoise objects), and ritual expressions (Toxihmolpilia or 'the Binding of Our Years'). The use of xihuitl representations in these four expressions often overlapped, and these overlapping symbols and functions were exactly what the Mexica would emphasize in the process of self-recognition.

1.2 Chapters

This study consists of nine chapters, and the contents of each chapter are summarized as follows.

In Chapter 2, the historical and cultural background of the Mexica is reviewed in a broad context. First, in the section 2.1, some confusing terms related to the Mexica are clarified. Then in 2.2, two influential cities, Teotihuacan and Tula, which flourished in the Central Valley prior to the Mexica are described considering their influence on Mexica culture. The third section (2.3) focuses on history and cultural characteristics of the Mexica. The fourth section (2.4) explores a few important coexisting cultures which culturally and economically affected Mexica society.

Chapter 3 sheds light on the theoretical problems of precedent cognitive

studies in Aztec (Mexico) research. The first two sections (3.1 & 3.2) review the state of cognitive studies in archaeology in general, problematic aspects of Aztec research, and the features of Aztec cognitive studies. Then in the section 3.3, antecedent Aztec cognitive studies and their limitations are discussed.

Chapter 4 deals with the theoretical framework of this study and the specific method of analysis for each dataset. The main approach I employ is called an 'enactive' approach, which is an appropriate solution for the theoretical problems raised in the previous chapter and can explain effectively the metaphoric flexibility of conceptual systems. In the first section (4.1), the dualistic notion of 'subject versus object', which restricts the analysis of dynamic human cognition, is discussed. Then the enactive approach is reviewed as a way of avoiding this dichotomy. In section 4.2, 'categorization theory' is described in relation to the theme of this study. Categorization theory states that the human act of classifying things and concepts is processed in a metaphoric unfoldment from typical examples (or central senses) and is based on human nature and cultural environment. Likewise, an enactive interpretation of material culture theories is discussed in a search for a solution to the problem mentioned in the beginning of Chapter 1. Then in the third section (4.3), methods of analysis based on the enactive approach are applied according to the specific nature of each dataset, namely, language, iconography, material, and ritual.

Chapters 5 to 8 are dedicated to data analysis. Chapter 5 examines linguistic expressions. That is to say, definitions of *xihuitl* are provided by applying categorization theory. In the first section (5.1) the basic definitions that are listed in dictionaries are analyzed from a structural point of view to discern correlations. In the second section (5.2), the extended senses that can be found in examples of actual linguistic usage in documents written in Nahuatl are highlighted and studied to discover the central senses of *xihuitl*. In this way the potential flexibility of *xihuitl* is not overlooked, and *xihuitl* can be contrasted with similar concepts such as *chalchihuitl* in a wider context. Finally in the third section (5.3), the semantic structure of the word *xihuitl* is schematized, and the functional effects of using *xihuitl* in linguistic contexts are discussed.

Chapter 6 focuses on *xihuitl* representations and colour symbolism in an

iconographic context. Xihuitl was depicted mainly in four iconographic representations: the trapeze-and-ray sign, the quincross symbol, the Aztec year sign, and as a phonetic glyph, depending on contexts. Mesoamerican iconographic traditions can be observed in the forms and functions of all the symbols, but the latter two show clearer modifications and inventions by the Mexica. Because iconographic representations were often depicted or materialized on sculptures and in codices, both material culture theory and categorization theory are applied in analysis. Finally, what traditions the Mexica absorbed, and what meanings and functions they newly attached to xihuitl are examined. The differences and similarities between the linguistic category, discussed in the previous chapter, and iconographic representations are also discussed.

In Chapter 7, meanings and functions attached to turquoise are studied. In the first section (7.1), the history of turquoise as an imported mineral in Mesoamerica is summarized. Then in the next section (7.2), use of turquoise in Mesoamerica is examined. Turquoise was normally manufactured as mosaic inlays or beads and then used for the decoration of objects. Each type of mosaic object (mask, shield, etc.) and bead object (necklace and bracelet) is analyzed by considering its contexts in order to understand the symbolism of turquoise in Mesoamerica in general. The last section (7.3) focuses on the symbolism of turquoise to the Mexica. The major dataset for this section comprises the turquoise objects found in offerings associated with the Mexica's main pyramid structure called the Templo Mayor. Analysis of the turquoise objects is based on the material culture theory discussed in Chapter 4. In this way, the meaning of turquoise to the Mexica is highlighted against the background of Mesoamerican tradition.

Chapter 8 studies correlations of other definitions of xihuitl. The concepts of 'grass', 'solar year', and 'fire' can be observed in a ritual and mythological context related to the ceremony called Toxiuhmolpilia or 'the Binding of Our Years'. In this ceremony the 'solar years' were bound like 'grass' and buried in 'fire'. In the first section (8.1), the historical and mythological background of the ceremony is studied. Then in the second section (8.2) the Mexica ceremony

of Toxiuhmolpilia is focused on and the meanings and functions of the ceremony are examined. The last section (8.3) discusses the way the Mexica ritually expressed and materialized the concepts of grass, solar year and fire as xihuitl by comparing it with the linguistic structure of the word xihuitl studied in Chapter 5.

Finally, in Chapter 9, based on the outcomes of the data sections, the Mexica experience of Mesoamerican traditions and the Mexica way of reproducing traditions are discussed. In this discussion, the nature of each expressional media—linguistics, iconography, material and ritual—is re-considered in terms of difference in a range of contexts and in the ways of consuming traditions. All the xihuitl representations in the four media are supposed to embody complementary the concept of xihuitl as a whole. Then the Mexica conceptual system—the processor of information and experience—is examined in order to interpret the background of the Mexica conceptualization of xihuitl.

Chapter 2 Cultural context of this study

In order to explain the Mexica experience that developed the conceptualization of *xihuitl*, it is indispensable to understand in what historical and cultural context the Mexica sought and placed their identity. Thus, the purpose of this chapter is to locate the Mexica in Mesoamerican history and cultures (Figure 2.1, 2.2). First, some confusing terms related to the Mexica and to the Postclassic people of the Central Valley are clarified and defined for this thesis. Second, the influences on the Mexica of the two major cities located in the Central Valley that preceded Tenochtitlan and other city centres of the Mexica, namely Teotihuacan and Tula, are considered. Third, the history of the Mexica and characteristics of their culture are reviewed. Fourth, people and cultures outside the Central Valley, who were strongly influential in the Mexica's conceptualization of *xihuitl*—specifically the Mixtec of the Oaxaca region, and the Southwestern cultures of the southern area of the present United States—are discussed.

2.1 Definitions of terms

In this section the use of the terms 'Nahua', 'Nahuatl', 'Aztec' and 'Mexica', are clarified. These terms are often used in different ways, but the basic meanings are as follows. First, 'Nahua' can be an adjective or a noun and indicates the people who originally migrated into the Central Valley somewhere from the north, and who were the inhabitants of the Valley at the time of the Spanish Conquest. This original migration has traditionally been dated to the beginning of the Early Postclassic period (Smith 1998: 38-9), but recent research suggests an earlier migration. Graulich (2001: 15), for example, points to the existence of Nahuatl-speakers in Central Mexico as early as eighth century on the basis of his analysis of the iconography of the Cacaxtla mural paintings. Taube (2000) makes a case for proto-Nahuatl being the Teotihuacano language based on iconographic analyses of murals and signs. Second, Nahuatl exclusively means the language spoken by the Nahua people. Third, Aztec is a modern label that

was not used by the ancient peoples themselves (Smith 1996: 4; Berdan 2001: 59; López Austin 2001: 68). The term Aztec is thought to come from Aztlan, meaning ‘the Place of Heron’, or the mythical place from where the Nahuatl people were believed to originate. Third, Mexica refers to one of the tribes of the Nahuatl, among the latest arrivals in the Valley, who founded the city of Tenochtitlan during the Late Postclassic period (1325-1521). In the following paragraphs the details and use of each term in this study are outlined.

Nahuatl

At the time of the Spanish Conquest, the Central Valley was occupied by a diversity of peoples of varied backgrounds and histories. Some of them were long-term inhabitants of the region, such as the Otomí, and others were associated with the Toltecs, who achieved political supremacy in the Central Mexico three to five centuries prior to the establishment of Tenochtitlan (Berdan 2001: 59). Among those who inhabited in the Central Valley, the Nahuatl people were part of the nomadic Chichimec immigrants from northern Mexico. The Chichimecs were people who lived from mid to northern Mexico, north of the Central Valley, and arrived in successive waves from at least Toltec times and settled in nearly every corner of the Central Valley (Berdan 2001). Although the Nahuatl made up the major part of the population of Late Postclassic Central Valley and the core of the so-called ‘Aztec empire’, they are said to have been originally nomadic hunter-gatherers as opposed to the sedentary agriculturalists of traditional Mesoamerica (Grady 2001: 188).

In this thesis, I use the term Nahuatl for general contexts referring to the Postclassic culture and people of the Central Valley. However, it should be noted that the term Nahuatl does not necessarily correspond to the Nahuatl speaking people, as explained in the following paragraphs.

Nahuatl

The early movement of the Nahuatl people can be explained by the history of their language Nahuatl. Nahuatl is the southernmost member of the widespread Uto-Aztecan language family that includes the languages of the American

Southwestern tribes, such as Papago, Piman, Tepehuan, Tamahumara, Cora and Huichol (Manrique Castañeda 1995: 199; Dakin 2001: 364). Although the homeland of Nahuatl is still undetermined, it is thought that it probably was northwestern Mexico (Dakin 2001: 364).

With the growth of the Aztec empire, the use of Nahuatl spread, and many areas abandoned their original languages to adopt Nahuatl. In other regions, Nahuatl was used as a trading *lingua franca*, probably spoken only by specialized interpreters (Karasik 1993: 70; Berdan 2001: 59; Dakin 2001: 364). Some Colonial documents recorded in different regions of Mexico and Central America contain a *lingua franca* that shows old features that were no longer present in the Tenochtitlan area dialects described by early Spanish grammarians (Dakin 2001: 364). This may have been an early Prehispanic variety of the Tenochtitlan or central Nahuatl dialect that was spread as a *lingua franca* with the rise of the Aztec empire and was already widely used before the arrival of the Spaniards (Dakin 2001).

During Prehispanic times, the speakers of Nahuatl did not employ script writing, and their linguistic tradition was based on oral expression (Johansson 1993: 23-41) (cf. Chapter 2.3.2.2). The Nahuatl language spoken in Tenochtitlan (Classical Nahuatl) was first described by the Spanish friars in the alphabetical script writing in the sixteenth century. During the Colonial period, Nahuatl was widely used as a written language by friars and others who recorded the oral history and beliefs of the Nahuatl speakers, as well as translated Christian religious texts into Nahuatl. Nahuatl was also used by scribes recording legal documents (Dakin 2001: 363). The most extensive Nahuatl source is the twelve books of the Florentine Codex, written by and under the direction of Friar Bernardino de Sahagún; other works include the *Crónica Mexicáyotl*, the *Codex Chimalpopoca*, the *Historia Tolteca-Chichimeca*, and the *Codex Chimalpahin*. The earliest grammar was recorded by Friar Andrés de Olmos (1547), and then followed by Rincón (1595), Horacio Carochi (1645), and Alonso de Molina (1571, 1992) (Dakin 2001)¹.

¹ Olmos (1547, 1993) *Arte para aprender la lengua mexicana*. Madrid; Rincón (1595, 1888-1889) *Arte mexicana*. Anales del Museo Nacional, 1st series, vol. 4. Mexico City;

Thus, the original Nahuatl speakers or the Nahua were immigrants from northern Mexico, but with the growth of the Aztec empire the range of the Nahuatl speakers covers not only the Nahua but also other originally non-Nahuatl speaking people incorporated into the empire. Therefore, I clarify here that in this thesis Nahuatl indicates the language of the Aztec empire used both by the Nahua and other people under the influence of the empire at the time of the Conquest.

Aztec

It is said that the use of the term Aztec to denote the people who founded Tenochtitlan (= the Mexica) is not appropriate, and that this improper designation stems from the early nineteenth-century work of the naturalist Alexander von Humboldt (López Austin 2001: 68)². As mentioned before, this appellation derives from Aztlan, the Nahua people's legendary place of origin. Thus, the term Aztec basically indicates Nahua.

Aztlan is recorded in many early colonial works such as the *Mapa Sigüenza*, the *Codex Boturini* (or *Tira de la Peregrinación Mexica*), and the *Crónica Mexicáyotl*, but the myth is most fully documented in the work of later chroniclers, such as Fernando de Alvarado Tezozómoc (1987, 1992) and Friar Diego Durán (1984, 1994). The geographic location of Aztlan is still unclear and disputable, but the place is thought to have been an island surrounded by reeds in the middle of a lagoon somewhere in the northwest of Mexico (Berdan 2001: 61; P. Carrasco 2001: 297; Lint-Sagarena 2001: 72-3). While some scholars believe that it was a real place, others argue that it was a mythical place with no precise location on the map (Smith 1998: 38-9).

Another homeland is told in Nahua legends as Chicomoztoc, meaning 'the Seven Caves', from where the seven Aztec (Nahua) tribes emerged, the Xochimilca, the Chalca, the Tepaneca, the Colhua, the Tlalhuica, the Tlaxcala, and the Mexica (Lint-Sagarena 2001: 72). Chicomoztoc was regarded as a

Carochi (1645, 1983) *Arte de la lengua mexicana con la declaración de los adverbios della*. Mexico City.

² López Austin (2001: 68) quotes this from Robert Barlow (1949) *The Extent of the Empire of the Colhua Mexica*, Berkeley.

mythical mountain with womb-like caves, which represents the ancient notion of the mountain as a procreative entity (Townsend 1992: 57) (Figure 2.5b). These sources disagree over the identity of the tribes of the Aztecs and the reasons for their leaving Aztlan (Códice Botrini: pl. 1; Durán 1994: 13; Graulich 1997: 210; Smith 1998: 38-41; López Austin 2001: 68).

The term Aztec contains some ambiguous usages. For example, at times, all the inhabitants of the Central Valley in the Late Postclassic period are called Aztec, whereas at other times the term also includes the culturally related inhabitants of the Puebla-Tlaxcala valleys (López Austin 2001: 68). Likewise, the term is often used for the members of specific ethnic groups normally tied to distinct city-states, such as the Mexica, the Acolhua, the Tepaneca, the Chalca, and the Xochimilca (Berdan 2001: 59). The term is also frequently used to designate the military alliance of three of these powerful groups, namely, the Mexica of Tenochtitlan, the Acolhua of Texcoco, and the Tepaneca of Tlacopan (Berdan 2001). This alliance called 'the Aztec Triple Alliance', was the centre of the Aztec empire, which spread over much of modern-day Mexico and extended discontinuously from the Pacific to Gulf coast and from just north of the Central Valley to the border of Guatemala, from 1430 to 1521 (Berdan 2001) (Figure 2.3). Relating to the Triple Alliance, the term 'Aztec' is sometimes used to designate speakers of the Nahuatl language, regardless of ethnic groups, or to refer to the language—Nahuatl—itsself (López Austin 2001: 68).

In this study, to avoid unnecessary confusion, the term Aztec is employed only in modern academic contexts in which use of term has been clearly established: 'Aztec art style' or 'Aztec writing system' is used to mean the art style or writing system of Postclassic Central Valley; 'Aztec research' is used to indicate studies of the areas associated with Tenochtitlan, and the 'Aztec Triple Alliance' composed of Tenochtitlan, Texcoco and Tlacopan; and 'the Aztec empire' is used to refer to the empire established by this Aztec Triple Alliance.

Mexica

The Mexica people were the last Nahuatl speaking immigrants to enter the Central Valley after the Toltec decline. Their place of origin was said to be Aztlan, but

after they started their migration, their patron deity Huitzilopochtli ordered them to change their name to Mexitin, and later to Mexica (P. Carrasco 2001: 297). Mexica is often used overlapped with Aztec, but the term Mexica should be employed exclusively for those who founded the settlements of the imperial capital of Tenochtitlan and its sister-city Tlatelolco (López Austin 2001: 68). In this thesis, the Mexica specifically indicates the people who lived mainly in Tenochtitlan and also who were engaged and involved in religious and political affairs in the Aztec empire.

2.2 Central Valley prior to the Mexica

The Mexica are said to be the last inheritors of the Mesoamerican cultures before the Conquest (cf. Ortiz de Montellano 1990: 6). The Mexica inherited a wide range of institutions, beliefs, and practices from their Mesoamerican urban predecessors of the Central Valley: the Teotihuacanos (c. 200 B.C.-A.D. 750), a great civilization of the Classic period, and the Toltecs (c. A.D. 900-1170), the glorious ancestors to whom they most frequently refer in their myths and legends (Townsend 1992: 44). The Mexica capital of Tenochtitlan corresponds to the heart of present Mexico City. Teotihuacan is located about 50 kilometers northeast of Tenochtitlan, and Tula is about 80 kilometers north (Figure 2.4). In the following sections, important and influential cultural features of Teotihuacan and Tula in relation to Mexica culture are described.

2.2.1 Classic period: Teotihuacan

The city of Teotihuacan was a huge urban complex that dominated Central Mexico during the Classic period (A.D. 150-650). Teotihuacan occupied an area of twenty square kilometers, and more than half the population of the Central Valley was concentrated there, an estimated 40,000 to 200,000 inhabitants (Manzanilla 2001: 201). The power of Teotihuacan is clear in the northern and

western parts of the Central Valley as well as in the two corridors that lead toward the Gulf of Mexico and toward Tehuacan and Oaxaca through the Puebla-Tlaxcala Valley (López Austin & López Luján 2001: 116). Archaeological evidence indicates that its influence even reached to the coexisting Maya centre of Tikal in Guatemala (R. Millon 1993: 28). The impact of Teotihuacan on other regions of Mesoamerica was highly variable but in most instances appears to have been economic, ideological, and cultural, rather than political. This non-political influence implies that there was no Teotihuacan empire, although it is said that there are some cases of Teotihuacan ruling families' intermarriage with Maya elites, possibly for the purpose of establishing certain links with the Maya (R. Millon 1993: 28; Braswell 2003: 105-8).

Some of the important traits which became pan-Mesoamerican were developed by the Teotihuacanos. For instance, as for architectural style, the following two elements are peculiar to Teotihuacan: city construction laid out on a grid plan based on astronomical observations, and the architectural style known as *talud-tablero*, in which a rectangular panel with inset is placed over the sloping wall to form a terrace face (Coe 1983: 90-2; López Austin & López Luján 2001: 112, 116). Likewise, many of the gods of the pantheon shared by the late societies of Central Mexico are already clearly recognizable at Teotihuacan (Coe 1983: 94; López Austin & López Luján 2001: 105). In the following paragraphs, specific examples of Teotihuacan influence on Mexica culture, namely visual representations and religion, are examined.

Visual representations

It is said that the Mexica metaphorically brought Teotihuacan to the heart of their empire by incorporating its features and elements into the layout of their capital of Tenochtitlan (Boone 2000b: 387) (cf. Chapter 7). Although the layouts of Tenochtitlan and Teotihuacan are different, Tenochtitlan can be interpreted as having followed Teotihuacan's spatial concept of a grid plan based on cardinal directions and astronomical observations. Following the Teotihuacan tradition, Tenochtitlan was arranged around a sacred central zone which comprised a rectangular public plaza bordered by important civic and religious buildings, and

the orientation and placement of the central buildings were based on astronomical principles (Smith 1998: 189). Likewise, the two temples—the Red Temple and Building C—which are located either side of the Templo Mayor, the main temple, were built in Teotihuacan style in terms of layout, form, *talud-tablero* wall treatment, sculptural embellishments, and painted wall decorations (Matos Moctezuma 1988: 78-82, 114-5; Boone 2000b: 388). Moreover, antique Teotihuacan objects as well as new forms fashioned by the Mexica in Teotihuacan style became part of the ritual precinct and of other sacred locations in Tenochtitlan, such as the stone sculpture of Xiuhtecuhtli, the fire god, and numerous masks recovered from the offerings of the Templo Mayor (Matos Moctezuma 1988: 99-101, 114; López Austin 1987: 255; Boone 2000b: 388) (cf. Chapter 7).

Religion

It is often pointed out that many of the characteristics of religion that developed in the Classic period endured until the Spanish conquest (López Austin & López Luján 2001: 105). Much of the Mesoamerican pantheon crystallized during the Classic period. Personified deities were depicted in Classic paintings and sculptures with attributes and costumes that allow us to identify them on the basis of the iconography of subsequent periods (López Austin & López Luján 2001). Teotihuacan iconographic motifs related to religious ideas, such as the quincross and the trapeze-and-ray sign, appeared repeatedly in Mexica expressions, although the meanings and functions of the motifs changed through time (cf. Chapter 6).

‘Teotihuacan’ is a Nahuatl term meaning ‘the place of the gods’, ‘the place where lords or gods are made’, or ‘the place where one becomes deified’ (Pasztor 1997: 7; Heyden 1975: 139; D. Carrasco 1998: 30). To the Mexica, Teotihuacan had mythological significance—a place where the gods gathered together and created the present Sun or world (cf. Sahagún 1953-81: Bk 7, 3-8) (cf. Chapter 8). The colonial chroniclers also recorded that Teotihuacan for the Mexica was the sacred place of pilgrimage and offerings (Sahagún 1953-81: Bk 10, 189-90; Heyden 1975: 139). Thus, Teotihuacan was regarded by the Mexica as a mythological place related to the gods and to the creation of the world, an

idea which can be contrasted with Tula as the place where the Toltec dynasty originated and where civilization was born, as studied in the next subsection.

2.2.2 Early Postclassic period: Tula

After the collapse of Teotihuacan in the seventh or eighth century, the Toltec city of Tula (950-1150) became the first state to integrate peoples of Mesoamerica into a new cultural system (Cobean & Mastache 2001: 239). This transformation of Mesoamerican institutions by the Toltec is said to have involved several interrelated processes, which can be summarized in the following four points (Cobean & Mastache 2001): first, the settlement of Toltec groups (defined below) speaking Nahuatl (or sometimes Otomí) in regions outside Central Mexico; second, the founding in many areas of royal dynasties that claimed Toltec origins, though not all of them had kinship ties with Tula's nobility; third, the expansion of trade systems partially centered on Tula, which extended from Costa Rica and Nicaragua to the American Southwest; fourth, significant changes in the religions of some peoples as a result of contact with the Toltecs, who introduced Nahua gods to non-Nahua groups and spread the epic of the man-god Quetzalcoatl among peoples in Central Mexico, Yucatán, Highland Guatemala, and other areas.

The Toltecs (Toltec-Chichimec) are thought to have been a multi-ethnic group made up of people from north, northwest, and Central Mexico who spoke Nahuatl, Otomí, and several other languages (Diehl 1983: 14). However, skeletal studies have demonstrated that although many of the Toltecs migrated from the north, major groups of the Toltecs are supposed to have originated in southern Zacatecas and northern Jalisco, the extreme northwest of the Teotihuacan sphere of influence (Diehl 1983: 14; Cobean & Mastache 2001: 239). Thus, the capital city of Tula was a synthesis of two strong cultural traditions, namely, the preceding urban tradition in the Central Valley centred on Teotihuacan, and a tradition derived from the northern Mesoamerican periphery (Cobean & Mastache 2001: 239). Tula is said to have possessed an empire which included much of Central Mexico, along with areas of the Bajío, the Gulf Coast, Yucatán, and the

Pacific coast of Chiapas and Guatemala, including parts of Michoacan and Huasteca, the regions which the later Mexica never conquered (Cobean & Mastache 2001: 239).

In Mexica mythology, Tula was a legendary prosperous city ruled by the man-god Quetzalcoatl (Sahagún 1953-81: Bk 3, 13-5). In Tula lived the Toltecs who were skilled artisans instructed by Quetzalcoatl, and in the fields plants were cultivated in amazing dimensions and cotton was grown in colours (Sahagún 1953-81: Bk 3, 13). This legendary city had much influence over the Mexica, but a few aspects should be highlighted, namely the characteristics of religion and iconography, and trade networks, all of which have a bearing on later chapters.

Religion and visual expressions

It is said that architecture and sculpture at Tula continued to exhibit distant affiliations with late Classic Maya and Teotihuacan styles (Townsend 1992: 47). For example, a series of crudely carved stela-like stone monuments depicting members of the Toltec aristocracy, with symbols of rank and authority, and ball-courts around the ceremonial centre both reflect Maya influence. On the other hand, the architectural legacy of Teotihuacan appears in pyramid-platforms arranged in *talud-tablero* profiles with repeated animal friezes, and in the use of colossal architectonic sculptures (Townsend 1992).

At Tula, however, iconographic expressions of agricultural, mythological and cosmological themes that characterized the symbolism of Classic cities, such as Teotihuacan, became minor interests (Townsend 1992: 47). It seems that Toltec imagery was mainly concerned with scenes of military conquest, processions of warriors and sacrifice, and with emblems of rank and authority. The use of signs and symbols in almost exclusively military contexts affirmed the new ethos of warrior nations whose interests lay in seeking wealth and nobility through conquest. This ideological shift is said to have been a characteristic of the transitional time between the Epiclassic to the early Postclassic period (Townsend 1992). Such ideological change has been discussed in several contexts: from the mythological point of view by Piña Chan (1972: 55-61), through a study of iconographic changes in Teotihuacan (Pasztesy 1974), and through analysis of the

climatic change that affected cave ritual in Teotihuacan (Heyden 1975: 143). In the time of the Mexica, militaristic characteristics and religious emphasis on warfare intensified; accordingly, visual expressions concerning war and sacrifice increased (Lint-Sagarena 2001: 71) (cf. Chapter 6).

Trade network

The influence of Tula reached the northernmost limits of present-day Mexico, never before affected, and so the Toltecs entered into direct contact with the cultures of the American Southwest (Jiménez Moreno 1966: 79). Therefore in the Toltec empire, cultural influences from the American Southwest were combined with others from Mesoamerica. The most important element in this newly expanded trading network was the import of turquoise. The Toltecs are thought to have secured turquoise from the Cerrillos region of New Mexico through the trading centre of Casas Grandes in northern Chihuahua (cf. Chapter 7).

The Mexica inherited the trade network developed by the Toltecs, which brought them turquoise minerals with which to adorn themselves and the statues of their deities (Miller & Taube 1993: 174). Toltec figures, especially warriors, are frequently represented wearing costume elements covered with turquoise mosaic, such as large back shields, pointed crowns, and pectorals in the form of stylized butterflies or dogs, all of which were part of the paraphernalia of the warriors of the highest rank and rulership in later Mexica society (cf. Chapter 7) (Figure 6.41, 7.7). Because it reinforced militaristic values and became part of solar-war symbolism, turquoise gained in importance in Mexica times.

2.2.3 Summary

Both Teotihuacan and Tula were part of a sacred and glorious past to the Mexica. Archaeological studies of the artifacts found in Mexica-related sites have shown that Mexica elites were aware of objects from Tula as well as those fashioned in Toltec styles (Diehl 1983: 168-9; Smith 1996: 37-8; Cobean & Mastache 2001:

273-4). As studied in the next section on Mexica history, after the long migration from Aztlan-Chicomoztoc-Colhuacan to the Central Valley, the Mexica aligned themselves with the Toltecs of Colhuacan, thereby acquiring rights to prestigious ancestors whose roots went back to Teotihuacan (Heyden 2000: 165). The Mexica obsession with traditions can be observed in many aspects of their society, as elaborated in the next section.

2.3 Late Postclassic Central Valley

In this section the historical and cultural background of the Central Valley during Mexica times is studied. First, Mexica history that recounts the Mexica's view of themselves is summarized. Second, Mexica cultural elements related to this thesis are outlined. Finally, the blending of cultural elements peculiar to the Mexica with elements rooted in earlier Mesoamerican cultures is discussed in order to attempt to arrive at a Mexica understanding of tradition.

2.3.1 History of the Mexica

Historical and mythical accounts of the Mexica's origins contain many supernatural sites, personages, and episodes. It is widely accepted that the Mexica used these stories of their migration from Aztlan to locate themselves historically and to establish their legitimacy among the peoples of the Central Valley (Lint-Sagarena 2001: 73; López Austin 2001: 68) (cf. Chapter 8). According to the legends, during their migration of two hundred years, their culture was already clearly Mesoamerican, with both Toltec and Chichimec components. Whereas many other migrating groups had no agriculture and lacked temples and idols, the Mexica practiced cultivation, built *chinampa* or garden plots in the marshland, fished, and hunted waterfowl (Berdan 2001: 61; P. Carrasco 2001: 297). The accounts report the steps guided by Huitzilopochtli in their migration, noting the years spent in each place and the celebration of 'the

Binding of Our Years' held every fifty-two years (Tezozómoc 1992: 3-68; P. Carrasco 2001: 297).

Mexica history is generally divided into three stages: a legendary period of migration (until 1250), a period of consolidation (1250-1428), and a period of expansion (1428-1521) (cf. Bray 1991: 17-23; Smith 1998: 38-58)³. In the following paragraphs the important factors related to the identity of the Mexica in each stage are highlighted.

Period of migration

Some ethnohistorical records state that the Mexica and other Nahua groups left Aztlan, their island home in the middle of a lake, in the year 'One Flint' or A.D. 1069 or 1168 (cf. Tira de la Peregrinación Mexica 1944: pl. 1; Códice Boturini 1952: 7-8; Tezozómoc 1992: 14). They crossed in their canoes to the shore, and in a cave in a mountain with a curved top, they discovered an effigy of Huitzilopochtli, which was to lead them in their travels. This mountain with a curved top is said to be a motif for Colhuacan or 'curved hill', which often appears in Mexica iconography as a place of emergence (Tira de la Peregrinación Mexica 1944: 6; Códice Boturini 1952: 7-8) (Figure 2.5a). Considering that Colhuacan means the place of the Colhuas, who were part of the descendants of the Toltec, a Toltec-related origin is also implied in such graphic expressions (cf. Matos Moctezuma 1988: 178)⁴. After leaving Aztlan, the migrants visited Chicomoztoc or 'place of seven caves', which is described as a womb-like cave in a mountain in the style of Colhuacan (Kirchhoff, et al. 1989: fol. 16r; Tezozómoc 1992: 16-7) (Figure 2.5b). As seen in later in Chapter 7, graphic motifs for Colhuacan are depicted on shields covered with turquoise mosaics attributed to the Mexica.

When the Mexica tribe, guided by Huitzilopochtli, arrived at Coatepec or 'the Hill of Serpent', part of the group determined that this must be the promised land in which to settle down. This decision infuriated Huitzilopochtli, and he killed the leaders of the offending faction overnight by heart excision (Tezozómoc 1992:

³ The year of the foundation of Tenochtitlan also varies depending on the sources.

⁴ Colhua literally means 'the curved hill', and Colhuacan means 'the place of the Colhuas or the people of the curved hill'.

33-36; Lint-Sagarena 2001: 73). This episode was later transformed into an important myth of the birth of Huitzilopochtli and his defeat of Coyolxauhqui, the leader of the offending group (Matos Moctezuma 1988: 39; Lint-Sagarena 2001: 73; Sahagún 1953-81: Bk 3, 1-5). Likewise, this mythic trope is repeated later at Tenochtitlan in the design of the Templo Mayor and in the placement of the stone sculpture of dismembered Coyolxauhqui at the base (Lint-Sagarena 2001: 73). The episode of Coatepec divides the legendary and mythic section from the more concrete historical section that describes the founding of Tenochtitlan (Lint-Sagarena 2001: 73).

Period of consolidation

The important aspect in this period of consolidation is the Mexica establishment of a capital by employing political intermarriage and other political interactions with people in the Central Valley in order to justify their place and reinforce their lineage.

This stage begins with the arrival of the Mexica in the Central Valley in about 1250 (cf. Smith 1998: 44). From about 1250 to 1298 they were the vassals of Azcapotzalco, the capital of the Tepaneca, the most powerful kingdom in the valley; they then served the Toltec-Colhua until 1323 (Tezozómoc 1992: 39-68; Boone 1994a: 46; Smith 1998: 44-5). Finally in the year 'Two Reed' or 1325 the Mexica found their promised land in Lake Texcoco. They had reached a small island where an eagle perched on a cactus grasping a serpent, as Huitzilopochtli foretold, and there they built their capital, Tenochtitlan, or 'the Place of the Prickly Pear Cactus' (Tezozómoc 1992: 69-70; Boone 1994a: 46). Three years later some of the Mexica founded a sister city, Tlatelolco, on the next island to the north (Boone 1994a). In the early years, Mexica of both Tenochtitlan and Tlatelolco served as mercenaries of the Tepanecs led by the ruler Tezozómoc (Boone 1994a: 46).

Continuing to consolidate power, the Mexica established their royal dynasty. The first king was Acamapichtli or 'Handful of Arrows' (1375-95), the son of a

Mexica nobleman and the Colhua ruler's daughter (Boone 1994a: 46)⁵. Thus, the Mexica officially joined in the Toltec royal bloodlines. Likewise, political relations with the Tepanecs were fortified by the accession of one of the sons of Tezozómoc to rulership in Tlatelolco. Acamapichtli's son Huitzilihuitl or 'Hummingbird Feather' (1396-1417) and grandson Chimalpopoca or 'Smoking Shield' (1417-1427), both of whom could claim Toltec ancestry, consolidated the Mexica's position in the Valley in the next fifty years. They guided the construction of the city, accomplished a number of local conquests on their own and chose wives politically (Boone 1994a).

Period of expansion

This stage covers the formation of 'the Aztec Triple Alliance' to the conquest by the Spaniards in 1521. It can be said that any material representations produced during this period attest the political and economic expansion of the Mexica, the justification of their power over the conquered regions, and the Mexica elite's self-differentiation from the ruling-class people of other regions by showing political and religious leadership.

With the escalation of hostilities between the Mexica and the Tepanecs, the fourth king Itzcoatl or 'Obsidian Serpent' (1427-40), the uncle of Chimalpopoca, formed an alliance so-called 'the Aztec Triple Alliance' with Texcoco and Tlacopan for the purpose of defeating the Tepanecs in 1428 (Boone 1994a: 49; Smith 1998: 50). This alliance greatly promoted the expansion of the Aztec empire. During his reign, Itzcoatl conquered most of the remaining cities of the Central Valley, including the rich *chinampa* areas of Xochimilco, Cuitlahuac and Mizquic (Boone 1994a: 49; Smith 1998: 50).

The Aztec empire continued increasing territory and gaining political power under the next kings Motecuhzoma Ilhuicamina (Motecuhzoma I) or 'Angry Lord, Archer in the sky' (1440-69), Tizoc or 'Chalk Leg' (1481-1486), Ahuitzotl or 'Water Beast' (1486-1502), and the last of the pre-Conquest rulers, or Motecuhzoma Xocoyotzin (Motecuhzoma II) or 'Angry Lord, The Younger' (1502-20). At the time of the Spanish arrival in 1519, the Aztec empire extended

⁵ As for the chronology of the rulers, I follow the chart given by López Luján (1994: 68).

from the Gulf of Mexico to the Pacific Ocean and from what is now north-central Mexico to Guatemala (Boone 1994a: 13; Pasztory 1983: 54) (Figure 2.3). From the capital of Tenochtitlan, the Mexica ruled over those areas by means of alliance, tribute and trade (Boone 1994a: 13; Smith 1992: 74-85).

This stage is significant for understanding the continuous amplification of the Templo Mayor, because the expansion of the size of the pyramid reflects and symbolizes the growing influence of the Aztec empire. Each successive phase of construction was marked by caches and deposits, collectively called 'offerings', before the new structures completely encased their predecessors (M. Miller 1986: 204; López Luján 1994: 240-85) (cf. Chapter 7). Likewise, during this period of expansion, religious rituals were performed on a large scale involving surrounding conquered cities, such as 'the Binding of Our Years', and thus served as political tools (cf. Chapter 8).

2.3.2 Cultural characteristics

In the following subsections four cultural elements are examined: the calendric system, art style, writing system and religion. Regarding calendric system, the Mexica basically inherited the Mesoamerican calendars, but the iconographic and ritual representations of the calendars can be seen as extensions of Central Mexican traditions. Positioning the Mexica iconographic style, generally called 'the Aztec art style', and the Aztec writing system in Mesoamerican iconographic traditions is a key element in understanding the basic nature of visual expressions including material culture and the codices or painted manuscripts that embody the Mexica experience of history and traditions. Characteristics of religion are also important in understanding the philosophical background of iconographic expression and the Mexica cosmivision. These four elements represent the Mexica way of demonstrating their identity and of justifying themselves as a successor of Mesoamerican traditions (cf. Chapters 6, 7, 8).

2.3.2.1 Calendars

Astronomical observation, one of the major and oldest Mesoamerican practices, enabled the development of accurate calendars. In Mexica society, every aspect of social, political, and economic life was determined by the two traditional calendars, the 260-day divinatory and 365-day solar calendars. The 260-day calendar was called *tonalpohualli* or ‘counting of the days’ and was formed by the combination of twenty-day signs, each representing divine power, with the numbers from one to thirteen. *Tonalpohualli* was described in painted books called *tonalamatl* and was employed in divination, naming a child, planting and harvesting, trade and commerce, marriage, ritual bathing, and eating of certain foods (Durán 1977: 397).

The 365-day calendar was called *xiuhpohualli* ‘counting of the years (= xihuitl)’. It consisted of eighteen months of twenty days called *veintenas* each with five remaining days *nemontemi*. *Nemontemi* were considered to be unlucky and dangerous, and during this period, people fasted and performed auto-sacrifice. Each month was presided over by one or two particular deities, and had its own festivals, many but not all of which were closely correlated to the agricultural cycle. (Townsend 1992: 127). The years were named after the ‘year bearer’, one of four day-names of the *tonalpohualli* that could begin a new year, with its accompanying number, according to the system of rotation (Townsend 1992). The possible year-names were Rabbit, Reed, Flint Knife, and House, and they were distinguished by their numbers, such as, One Rabbit, Two Reed, Three House, Four Flint, and so on, until the thirteen numbers and the four year-names began to repeat themselves every fifty-two years (13 x 4) (Townsend 1992; Sahagún 1953-81: Bk 7, The Calendar Wheel). These two calendars ran simultaneously and formed a larger unit, composed of fifty-two solar years or seventy-three *tonalpohualli* cycles, which was regarded as ‘one century’ and after which the cycle repeated.

Not only this calendar system itself but also the iconographic and ritual representations related to the calendars were part of Mesoamerican traditions. The glyphs for calendric signs are part of the writing system, which is studied in the next subsection. These glyphs differ from one culture to another, but the

Mexica signs are said to have been based on Epiclassic Xochicalco signs (Sáenz 1969: 13; López Luján 1995: 111-2) (cf. Chapter 6). According to Graulich (2001), the origin of the Mexica signs can be traced back to the iconography of Cacaxtla. However, the functions of the calendric signs in historical descriptions in the painted manuscripts seem to have been modified by the Mexica by simplifying the morphological forms of the signs and by placing them apart from the pictorial scenes describing historical events (cf. Chapter 6). Likewise, a ritual of the conclusion and beginning of the fifty-two-year cycle was a Central Mexican tradition and modified by the Mexica as a ceremony called Toxihmolpilia or 'Binding of Our Years', which was held on a large scale and involved all towns and villages (Sahagún 1953-81: Bk 7, 25-30) (cf. Chapter 8).

2.3.2.2 Aztec Writing system

The Aztec writing system was one of five Mesoamerican writing systems; the others are the Maya, Mixtec, Zapotec, and Epi-Olmec (Smith 1998: 248). Although each of these scripts expressed a different language and had its own patterns of writing, they shared common preoccupations with ruling dynasties, elite affairs, ritual, and calendars (Smith 1998: 248-9; cf. Coe & Van Stone 2001). Among these traditional writing systems, the Classic Maya writing was the most complete and capable of recording anything that could be said in their languages (Smith 1998: 249). Although many Mixtec codices recording history and rituals were produced and are still conserved today, compared with Classic Maya writing, Mixtec writing was limited in scope and capable of expressing only a narrow range of events (Smith 1998). The people in Central Mexico did not use 'script' writing as the Maya did; Central Mexican codices were 'painted' with a variety of colours rather than 'written'. The origins of Aztec writing may reach back to early systems of signs and symbols at Teotihuacan and Xochicalco, and also Mixtec influence can be considered because of stylistic and iconographic similarities between Mixtec and Aztec writing (Smith 1998).

The literal capability of Aztec writing was supported by the mixed use of pictures (graphic description) and three types of glyphs, namely pictographs, ideographs and phonetic glyphs (Smith 1998: 249-50). Pictographs are

depictions of objects and people, such as a rabbit on a hill meant the place name of Tochtepec or ‘On the hill of the rabbit’ (Smith 1998: 252). Ideographs are conventionalized representations of ideas or meanings, and their interpretation depends on a certain level of cultural understanding, because the way in which a concept is depicted is usually culturally specific (Smith 1998: 253). The example of the symbol of ‘burning temple’ meaning ‘military conquest’ is an ideograph. Phonetic glyphs represent words, syllables, or sounds, and many examples of Aztec phonetic writing employed the ‘rebus principle’, in which a word difficult to depict in writing was replaced by a word or words with the same sound (homonyms) that were easier to depict (Smith 1998). One of the iconographic representations of xihuitl, in the form of a turquoise stone, corresponds to this phonetic category and signifies ‘(duration of) one year’ (cf. Chapter 6).

In Prehispanic Central Mexican societies, writing or painting was the provenance of the elites and was called *tlilli tlapalli* or ‘the black, the red’ in Nahuatl. It has been interpreted that *tlilli tlapalli* symbolizes the presentation of and knowledge about things difficult to understand, and that it metaphorically implies that the wise man possesses ‘writing and wisdom’ (León Portilla 1990: 12). Thus, the codices or painted manuscripts are thought to be elite properties and well reflect elite cosmovision.

2.3.2.3 Aztec art style

The graphic expressions of writing systems are one of the representations of art styles. Therefore, the glyphs and pictorial descriptions of the Aztec writing system are depicted in the Aztec art style. The Aztec art style has been defined as a substyle of the Mixteca-Puebla style as regards in terms of iconographic representations in paintings and codices (Nicholson 1985; Smith 2001: 481). In other words, in terms of artistic expressions, the Mexica were strongly influenced by the Mixtecs, although politically the Mexica controlled the Mixtecs.

The art style of the Postclassic codices of Central Mexico is generally called the Mixteca-Puebla style. This distinctive painting style is supposed to have been established by the people of the Mixteca-Puebla region—northwestern

Oaxaca and southern Puebla—during the Epiclassic period by synthesizing earlier traditional symbols of Teotihuacan, Monte Albán, Classic Veracruz, and Xochicalco, and by developing them into a more elaborate style (Nicholson 1985: 73; Smith 2001: 481). During the Late Postclassic period murals and codices painted in the Mixteca-Puebla style were used throughout Mesoamerica, and these works have been grouped together as the ‘International style’ to distinguish them from the objects of the Mixteca-Puebla region proper (Smith 2001: 481).

One of the variants of this International style is the Aztec art style, which can be observed in codices and on sculptures and ceramics from the Central Valley and several provincial cities in the Aztec empire including Xilotepec, Tlappa, and Tochpan (Smith 2001: 481). The Aztec style seems to be a kind of synthesis of the Mixteca-Puebla style proper and the preceding Toltec tradition, known principally from relief carvings and mural paintings at Tula, Ixtapantongo and Chichén Itzá (Nicholson 1973: 73). The creative centres of this style are said to have been the imperial capitals of Tenochtitlan and Texcoco (Nicholson 1973: 74). One of the examples of the Aztec art style is the Codex Borbonicus, which depicts the descriptions of *tonalamatl* with the deities attributed to each day and the ritual scenes of *veintenas*, including the ceremony of ‘the Binding of Our Years’ celebrated in 1507 (Nicholson 1966b: 261; 1973: 75; Boone 1982: 156).

It is widely accepted that the basic features of the Aztec art style were established especially in the deity insignia (Nicholson 1973: 84). The examples of the diagnostic characteristics are: colour combinations of facial painting, colours and forms of nose and ear ornaments, types of masks, headdresses and hair ornaments, ornaments worn at the back of the head or neck, pectorals, shield motifs, devices carried on the backs of deities, objects held in deities’ hands, and *nahualli* or ‘disguise’ (transformer animal) appearing with deities (Nicholson 1973: 84-91). For example, Xiuhtecuhtli or the god of fire is often depicted with facial paintings of thin horizontal black lines at eye level and a blackened area from nose down (sometimes red around the mouth), blue nose ornament, a hair ornament in the form of a blue bird flying downward attached to the front of a band, a pectoral in the form of a stylized butterfly, a *xiuhcoatl* or a fire serpent (also his *nahualli*) on the back, and a shield with a quincross motif and turquoise

mosaics (cf. Chapter 6) (Figures 6.8, 6.9). Each attribute can be seen as a denominator to identify this supernatural figure (Nicholson 1973: 84). However, the combination of the attributes often varies, and the attributes of various deities sometimes appeared in a mixed way, depending on contexts that emphasize certain aspects of the deities depicted⁶. This variety of expressions may reflect the flexible idea of *teotl* or god, which is explained in the next subsection.

2.3.2.4 Religion

Mexica religion was polytheistic, based on the worship of a great number of gods and goddesses, some of whom, like Tlaloc, Tezcatlipoca and Quetzalcoatl, had long been known in the Central Valley (Bray 1991: 155). Others were adopted from conquered peoples, and by the reign of Motecuhzoma II, the imported gods had become so numerous that a special temple had to be built for them in the great ceremonial precinct (Bray 1991: 155; Townsend 1992: 108). The priests and philosophers tried to present these foreign deities as aspects of already existing gods and in this way to assimilate them into the national pantheon (Bray 1991: 155; Smith 1998: 210). Thus, this history of political conquest and of incorporation of gods from other regions made the Mexica pantheon complicated.

The Nahuatl term for deity is *teotl*, which also means ‘sacred, amazing and divine (power)’ (Siméon 1992: 490). Therefore, Mexica gods should be viewed as invisible spirits or forces whose roles, natures, and forms blended together (Smith 1998: 211). *Teotl* appears in Nahuatl texts in a variety of contexts. Sometimes it accompanies the names of nature deities, but it was also used in connection with human impersonators of divinities, as well as in association with sacred masks and related ceremonial objects, including sculptured effigies of wood, stone, or dough (Townsend 1992: 116). The word *teotl* may similarly be used to qualify almost anything mysterious, powerful, or beyond ordinary experience, such as animals of prey, a remote and awe-inspiring snowcapped mountain, a phenomenon of terrible power such as the sun or a bolt of lightning,

⁶ H. B. Nicholson (1971b) categorized the principal deities of the Mexica. As for the varied descriptions of one deity, for example, in pl. 28 of the Codex Borgia, five Tlalocs are depicted, each with different attributes according to the direction it represents (Figure 6.30).

or the life-giving earth, water, and maize, or even a great ruler at the time of his coronation (Townsend 1992). The application of *teotl* was not restricted to good or ethical things, for malign phenomena might also be designated by *teotl* (Townsend 1992). The diverse contexts of *teotl* suggest that the Mexica regarded the things of their world, both transitory and permanent, as inherently charged to a greater or lesser degree with vital force or power (Townsend 1992). This philosophy can be observed in the ceremony of Toxihmolpilia, in which old time—the time that had passed—was materialized as a bundle of sticks was buried in fire and at the same time reenergized by fire as a new sun (cf. Chapter 8). Thus, in Mexica thought, ultimately anything can be *teotl*, which explains why the attributes of the deities are not always consistent, and also why the native people sometimes conceived something non-material (to us), such as time, as a visible and palpable material.

2.3.3 Summary

As told in their own histories, the Mexica saw themselves as immigrants from outside the urbanized Central Valley, but their interest was always directed towards becoming part of the great cultures that flourished in the past by marrying into the lineages of the descendants of these great cultures and by adopting Mesoamerican institutions, such as calendars, iconography and aspects of religion. Their successful identification with the Mesoamerican past, specifically with the Central Mexican mythical and legendary past, manifests itself in their imitation of city plans and in the structure of their main pyramid, as well as in iconographic and ritual expressions.

The Mexica did not seek the roots of traditions in only one source, such as Teotihuacan or Toltec. They followed different traditions depending on the contexts of cultural elements. For example, the Mexica employed the calendric glyphs derived from Xochicalco, the so-called ‘Open Writing System’ of Teotihuacan, and the art style of the Mixteca-Puebla (Houston 2004; Lacadena & Wichmann: 2004). It can be said that the Mexica cultural elements were a mass

of different traditions. Moreover, this mixture of complex traditions can be seen in specific levels of each cultural element. For instance, although the Aztec art style is said to have originated in the Mixteca-Puebla style, the iconographic roots of motifs in Mexica iconography differ, even when these motifs compose a figure of the same divinity. In the case of Xiuhtecuhtli, his butterfly pectoral has a Toltec root but the iconographic root of *xiuhcoatl* or his *nahualli* can be traced far back to Teotihuacan (Chapter 6). Such diversity of roots in cultural elements is thought to reflect the difference in the nature of expressional media, which is discussed in the concluding chapter (Chapter 9). Thus, the Mexica employed traditional institutions but often modified them to suit their own interests.

2.4 Other geographic regions and ethnic groups related to this study

In Mexica culture and society, not only Central Mexican traditional elements but also material and conceptual influence via trading networks from other Mesoamerican areas and the cultures of the American Southwest to the north can be observed. In this section, the characteristics and influence of people from outside of the Central Valley, namely the Mixtecs of Oaxaca and the American Southwestern cultures are reviewed. The specific cultural influence of the Mixtecs has been already highlighted in the previous section, but in this section, the general characteristics of Mixtec culture and society and its relationship to the Mexica are reviewed.

2.4.1 Mixtecs

It is generally accepted that the Postclassic 'Mixtec' people indicate not only the speakers of the Mixtec language but also the non-Mixtec speakers, such as the Trique, Amuzgo, Chatino, Chocho, and Cuicatec, who were native to the Mixtec region and who actually made up the majority of the population of some Mixtec kingdoms (Monaghan 2001: 476; Paddock 1970: 200-1). The Mixtec region,

where the present Mixtec speakers live, is divided into three zones: the Mixteca Alta, a mountainous region in eastern Oaxaca; the Mixteca Baja, a dry region northwest of the Alta; and the Mixteca de la Costa, a low-lying, humid strip of land alongside the Pacific Ocean (Monaghan 2001) (Figure 2.6).

The origins of Mixtec language and civilization can be traced in the Mixteca Alta from as early as 1000 B.C., and subsequently, these people moved down into the Mixteca de la Costa and the Mixteca Baja areas (Monaghan 2001: 476). However, in the Postclassic period, the Mixtec kingdoms gained control over much of the western Valley of Oaxaca as well, and incorporated most of the Chocho, Chatino, Nahuatl, Amuzgo, and Trique-speaking regions of Oaxaca into their kingdoms, and also controlled the groups of Tlapanec speakers in Guerrero, as well as Popoloca and Mazatec speakers in Veracruz and Puebla (Monaghan 2001). This Mixtec ethnic invasion pushed down the Zapotec, who originally dominated the Valley of Oaxaca, to Tehuantepec in the south, and the Mixtec took over some Zapotec old towns, such as Monte Albán, Zaachila and Mitla (Paddock 1970: 200-25). The caves and tombs I take up in Chapter 7 of this thesis belong to the Postclassic Mixtec culture, but I call these regions 'Zapotec-Mixtec' because some of their locations, namely Cuilapan, Huitzo, Monte Albán, and Zaachila were originally under Zapotec control in Classic times.

The typical Postclassic Mixtec kingdom consisted of a single major site and its immediate surroundings (Monaghan 2001: 478). A kingdom was ruled by kings and queens of a particularly prestigious line, and they were also military leaders and able to form strategic alliances (Monaghan 2001). Major kingdoms at the time of the Spanish conquest included Coixtlahuaca, Yanhuitlan, Teposcolula, Tilantongo, Achiutla, Tlaxiaco, Teozacualco, and Tututepec on the coast (Monaghan 2001). Several of these were subordinate to the Aztec Triple Alliance, but in most cases subject kingdoms were free to rule themselves, and were required only to provide regular tribute payments and occasional military support in war (Monaghan 2001; López Austin & López Luján 2001: 255-6).

One of the reasons the Mexica were attracted to the Mixtec region was its rich resources and manufactured products of gold, greenstones, turquoise, cochineal, and blankets and other cotton goods (López Austin & López Luján 2001). In

fact the Mixtec artists produced delicate jewelry, like the pieces found in Tomb 7 at Monte Albán, as well as intricately carved bones, polychrome pottery, and illuminated manuscripts (Monaghan 2001: 478) (cf. Chapter 7). The artistic style associated with the Mixtecs has been classified as the Mixteca-Puebla style, to which Aztec art style belongs, as mentioned above (Monaghan 2001). Thus, Mixtec influence over the Mexica is mainly in its sophisticated art style, which sometimes makes it difficult to identify whether the provenance of artifacts without clear context is Mixtec or Aztec.

2.4.2 The American Southwest

The area known as the American Southwest is adjacent to the northern border of Mesoamerica and is often defined as extending from Las Vegas (Nevada) in the west to Las Vegas (New Mexico) in the east, and from Durango (in Northern Mexico) in the south to Durango (Colorado) in the north (Fagan 1995: 285) (Figure 2.7). Southwestern culture is defined in two ways: 1) by agriculture, a variety of farming artifacts and characteristic pottery styles, and also by villages composed of residential compounds and some public architecture; 2) by the absence of formal social stratification, large cities, writing, and major, monumental architecture on the scale of such great Mesoamerican urban centres as Teotihuacan or Tikal. The Southwestern people include Yuma, Pima, Papago, Pueblo, Hopi, Zuñi, Acoma, Laguna, Apache, and Navajo, many of whom share the same linguistic root 'Uto-Aztecan' with the Nahuas of the Central Valley of Mexico (Fagan 1995: 287-8; Manrique Castañeda 1995: 199; Dakin 2001: 364).

Despite the probable diffusion of domesticated plants, agriculture, and ceramics from Mesoamerica, over the centuries the societies of Southwest acquired their own characteristics (López Austin & López Luján 2001: 30). Great cultures such as the Anasazi, the Mogollon, and the Hohokam imprinted a particular pattern on the arid landscape by their systems for water and erosion control, and canals, terraces, dams, and ridges transformed the desert (López Austin & López Luján 2001: 30-1). Settlements with multifamily, multistory

dwelling arose in the valleys, the plateaus, and the cliffs, and also extensive roads linked the centres of power with their dependencies (López Austin & López Luján 2001: 31).

From A.D. 500, Southwestern societies increased interchange with distant Mesoamerica. The relationship between these two super-areas was fundamentally one of trade, as evidenced by the presence of copper bells, pyrite mosaics, and macaw skeletons in the Southwest and of the prized northern turquoise in Mesoamerica (López Austin & López Luján 2001: 31). Likewise, Mesoamerican religious traditions came to the Southwest along with trade, as shown by the proliferation of ritual mounds and ball courts (López Austin & López Luján 2001). Although Mesoamerican impact on the Southwest tends to be emphasized more often, in this thesis, Southwestern influence on Mesoamerican cultures, especially with respect to the trade of turquoise, is featured.

2.4.3 Summary

In this thesis, Mixtec-related subjects are taken up mainly in the contexts related to turquoise objects and iconographic expressions. Many sophisticated turquoise objects have been recovered from the Zapotec-Mixtec region, and their symbolism and functions are examined and compared with those of the Mexica in Chapter 7. Likewise, iconographic motifs depicted with turquoise mosaics on Mixtec objects (or objects in the Aztec-Mixtec style), such as masks and disks, are also studied from the Mixtec mythological point of view, which was often influenced by Central Mexican legends and myths (Chapter 7). Mixtec iconographic expressions are also referred to in my study of the iconographic representations of xihuitl, such as the trapeze-and-ray sign, as one of the artistic traditions that influenced Mexica iconography (Chapter 6).

Regarding the interrelationship between the Mexica and the American Southwest, I focus on the contexts related to turquoise objects. The history of trade in turquoise between Mesoamerica and the Southwest is crucial in

understanding the symbolic and functional values attached to turquoise by the Mexica (Chapter 7). Southwestern turquoise objects can also be compared to those manufactured in Mesoamerica in terms of manufacturing techniques, and in the context of mythological background (Chapter 7).

Chapter 3 Cognitive studies in Aztec research

A major concern of this study is the Mexica conceptual system, through which their experience was processed and categorized as part of their cosmivision. A conceptual system plays an important role in human cognition and cognitive archaeology, which attempts to take the mind into account, should be reviewed before a frame appropriate for my study is considered.

Cognitive archaeology is defined by Renfrew (1994: 3) as a study of past ways of thought as inferred from material remains. In Mesoamerican studies, Flannery and Marcus (1993, 1994) are among the few who declare their approach to the archaeological and ethnohistorical investigations of Zapotec culture in Mexico to be 'cognitive archaeology'. Flannery and Marcus (1993: 261) give a 'tentative' definition of cognitive archaeology as follows:

Cognitive archaeology is the study of all those aspects of ancient culture that are the product of the human mind: the perception, description, and classification of the universe (cosmology); the nature of the supernatural (religion); the principles, philosophies, ethics, and values by which human societies of the world, the supernatural, or human values are conveyed in art (iconography); and all other forms of human intellectual and symbolic behaviour that survive in the archaeological record.

This theoretical idea is similar to an anthropological cognitive approach that studies how people in social groups conceive of and think about the objects and events which make up their world (D'Andrade 1995: 1). In order to complement the ethnographic information of a living context that helps us to understand people's cultural knowledge in anthropology, the Direct Historical Approach has been subsequently incorporated as one of the methodological approaches of cognitive archaeology (Flannery & Marcus 1994: 55). The Direct Historical Approach is a way of working back in time from the known to the unknown, using both ethnographic and ethnohistorical data to interpret prehistoric remains (Flannery & Marcus 1994: 56). Thus, cognitive archaeology can be regarded as an approach that reveals functions, symbolism, and history of the past objects in the context from which the objects were recovered. In Aztec research, where ethnohistorical information is abundant, the majority of the Aztec-related topics

such as iconography, religion, cosmology and ideology, are well suited to a cognitive approach.

One of the widely accepted analytical methods in cognitive archaeology has been presented as contextual analysis by Hodder (1986, 1987, 1992). Contextual analysis studies archaeological objects by examining three types of meaning: function—the functions of the object in its social and physical environment; structure—the object’s place within a code, set or structure; and content—the historical content of the changing ideas and associations of the object itself (Hodder 1987: 1). As an example of contextual analysis, Hodder (1992: 30-41) takes up a case study of the Late Neolithic site of Orkney, and examines the structural relationships of the different spheres—settlement, burial and ritual sites—and the function of the site in comparison with other regions. This study displays the importance of the comparison of information from different spheres within the same cultural frame and of the identification of common structural schemes in different regions (Hodder 1992: 32). In terms of its comparative point of view that covers all three meanings, namely, function, structure and historical content, this analytical method seems quite useful for studies in cognitive archaeology that try to reconstruct past human thought.

Contextual analysis can locate the target object (or site) in a wide environmental and historical context. However, it does not deal with the dynamic aspects of cognition, namely, the dynamism of experience or the understanding and expression of the past people who are involved with the object or site. Since my major interest is in the human conceptual system, this lack of dynamism in analysis has to be complemented in a theoretical way.

In this chapter, first, the characteristics of Aztec research are outlined to clarify its possibilities and limitations. Second, the history of cognitive studies in Aztec research is reviewed to situate existing theoretical problems. Third, possible solutions that would free the contextual approach from structural-functional analysis are discussed from four points of view: material culture, metaphor, material symbolism, and history of the concept. Finally, as a summary, approaches appropriate for my research are discussed.

3.1 Nature of Aztec research

In Aztec research, studies employing either one or a combination of interpretive and functionalist approaches have been predominant (e.g. León-Portilla 1983, 1986, 1988, 1990, 1992; López Austin 1980, 1988, 1994, 1996). The most popular subjects have been iconography, religion, cosmovision and ideology shared especially among the Mexica elites, owing to the abundant ethnohistorical information left both by the Spaniards and natives, which tell us about gods, rituals, myth, sacred calendars, language, genealogy, history, political systems and so on. Unlike research on other Mesoamerican civilizations, such as that in the Maya or Oaxaca regions in which archaeology has always played a large part, Aztec field archaeological research has long been restricted, because the Mexica capital of Tenochtitlan and other Aztec towns around the former lake lie buried under the present capital of Mexico City, built by the Spaniards (cf. López Luján 1994: 117; Smith 1996: 23-30). The abundance of ethnohistorical written documents concerning the Central Mexican cultures and societies may also be another factor that has led specialists to put less importance on archaeology. Thus, the Direct Historical Approach based on documentary research has been employed as a major method to reconstruct the cosmovision of the Mexica.

An excavation project started in 1978 at the Templo Mayor, the main temple of the Aztec empire, has allowed new understanding of imperial rituals, tribute from distant lands, and the cosmic symbolism of the empire (Smith 1996: 26-7; Matos Moctezuma 1982, 1988; López Luján 1994). Thus, it has become possible to use both ethnohistorical information and archaeological evidence for the study of Mexica culture and society. The elite world-view still predominates, but recent advances in social archaeology and ethnohistory have made the archaeology of commoners a topic of active research (Smith 1996: 5, 26-30; cf. Smith, et al.: 1994; Evans 1991; Brumfiel 1991).

In my study, however, it should be mentioned that the context is largely that of the Mexica elite, because the systems and institutions to be analyzed, such as writing, iconography and rituals, were to a great extent—although not entirely—under elite control. Likewise, xihuitl in its turquoise manifestation was

a province of elites. Therefore, in terms of archaeology, the material remains recovered from the Templo Mayor are given special emphasis, along with ethnohistorical documents that recount the Mexica elites' cultural, social and political practices.

3.2 History of cognitive studies in Aztec research

The process of employing iconography, linguistics, and ethnohistorical information concerning religion, ritual and mythology for the interpretation of cosmovision was already systematized by a nineteenth-century-scholar Eduard Seler (1849-1922) in Mesoamerican research. Nicholson (1990: xiii) states that the study of complex religion and ritual of Mesoamerica can be divided into a pre- and post-Seler epoch. A majority of Seler's works range broadly over the Mesoamerican culture-historical map: linguistics, including extensive translations of native texts (mostly of Nahuatl); native history; descriptive archaeology; analyses of symbol-decorated artifacts and monuments; hieroglyphic writing systems; calendars; religion, ritual, and mythology; and many other related topics (Nicholson 1990). Seler was essentially an analyzer, describer, and illustrator of artifacts and ruins already known and accessible rather than an explorer of new materials (Nicholson 1990: xv). However, Seler's disciplined analytic method has been regarded as a great contribution to Mesoamerican research, and he was also the first to compare Maya and Central Mexican materials systematically (Nicholson 1992: xvi-xv, Miller & Taube 1993: 200). His influence has been lasting and pervasive both in European and Mexican schools. Some of his successors are Beyer, Caso, Krickeberg, Spranz, and Kirchhoff, all of whose works are mainly based on the interpretative analysis of buildings, artifacts, iconography, mythology and religion (Nicholson 1992: xv). Some examples of their studies are as follows: comparative analysis of the symbolisms of Mixtec and Aztec iconographic motifs (Beyer 1965a-g), comparative and historical studies of mainly Zapotec and Mixtec iconography (Caso 1967, 1969, 1988), a study of Mesoamerican cultures from cosmological and iconographic points of view

(Krickeberg 1993), analysis of the iconographic motifs related to the gods in the codices of the Borgia group (Spranz 1973), and a study of the definition of Mesoamerica through the analysis of shared cultural elements among the Mesoamerican cultures (Kirchhoff 1992).

After Seler's generation, regional excavations in Mexico—except in the Aztec region—increased, and inter-cultural and historical studies were subdivided into various specializations. Aztec research has been almost completely separated from studies on the Maya, Oaxaca, and other regions. With the increasing availability of ethnohistorical information and archaeological evidence during the late twentieth century, the research trend seems to have been headed towards more intensive analysis and interpretation of philosophy, cosmovision, and ideology in a particular cultural context. This trend has brought deep insight into the cognitive world of the Nahuas and the Mexica. Such works include an interpretation of the Nahua ideological system through the symbolism of the human body (López-Austin 1980); the symbolic interpretation of Nahua rulership (Gillespie 1989); the role of ritual warfare in ideology (Conrad & Demarest 1984, 1992; Hassig 1992), cosmovision and ideology based on astronomical and natural observation (Aguilera 1989b, Aveni 1989; Aveni, et al. 1988; Broda 1982, 1996; D. Carrasco 1989), and cosmovision represented in the offerings of the Templo Mayor (López Luján 1994). The general methods employed in these studies are hermeneutic ones using both philological and iconographic analyses in comparative contexts. Contextual analysis in a wider sense, which employs an analysis of functional, symbolic and historical meanings of the object, can be observed in almost all the studies. However, efforts have tended to result in a reconstruction of cosmovision, in which a structuralist interpretation, such as dualism from our modern point of view, sometimes predominates. Thus, past people's experiences that were expressed in concepts attached to material culture in historical (dynamic) and comparative cultural contexts have not been described in detail.

3.3 Cognitive studies related to my research

My study aims to elucidate the possible range of meanings of xihuitl and to examine how and why each meaning became integrated into one concept in the Mexica mind. Each meaning has its own metaphors (or extended meanings), and these metaphors are linked with other metaphors derived from other meanings in the same category, a process which exemplifies that the nature of the concept of xihuitl is dynamic (cf. Lakoff 1987: 104-9). Although it can be argued that the springboard or starting point of my analysis is the concept of xihuitl within the context of the Late Postclassic Mexica world—a world which can be described from a structural-functional point of view—the analysis necessitates exploration of the historical and cultural backgrounds of each metaphor that was part of the Mexica experience. My approach, therefore, requires a kind of analysis that can illuminate the dynamic aspect of meaning as well as integrate historical and comparative points of view. In this respect, Hodder's contextual analysis needs to be complemented with an approach that can cover not only the changing meanings of the object but also the dynamism of the meanings or concepts attached to the object.

The analysis of the concept of xihuitl through the Mexica conceptual system has not been discussed in Aztec cognitive research so far, which makes it difficult to draw from prior research for information to help me fine-tune my method. Furthermore, in addition to the discussion of the theoretical issues mentioned above, it is indispensable to deal with material data in a flexible way, because xihuitl contains both material (turquoise, grass) and non-material elements (preciousness, solar year, fire, and blue-green colour). In the following paragraphs, therefore, the theoretical problems of material culture theories that have restricted the holistic understanding of objects are examined. Then a few approaches used in preceding Aztec studies that focus on the dynamic aspects of cultural phenomena are examined in order to seek a synthetic analytical method that can reinforce the contextual analysis. These approaches are studies of metaphor, material symbolism, and history of the concept (not of the object).

Rethinking material culture

Material culture has been widely discussed from different approaches in many area, such as: the symbolic meanings and functions of artifacts in an archaeological context (Hodder 1992); precious objects representing political power in archaeology and anthropology (Clark 1986); the function of elite objects in the context of social evolution (Earl 1990); visual representations as devices to link rulers and divinity among the Classic Maya (Houston & Stuart 1996); objectification in cultural context in anthropology (Miller 1987); the social function of art as artifacts in anthropology (Gell 1998); political value and circulation of commodities in sociology (Appadurai 1986); and the relationship between words and things in theoretical semantics (Kay 1997). Basically, material culture theories deal with the functions and meanings of objects in human societies, as does contextual analysis.

Some theories, especially those presented by anthropologists and sociologists who investigate living societies and who can relatively easily observe the whole system surrounding the object, insist on the inseparability of subjectivity and objectivity in the relationship between physical object and attached value (cf. Appadurai 1986: 3; D. Miller 1987: Introduction). For example, concerning commodities, Appadurai (1986: 4) asserts that the economic object does not have an absolute value as a result of the demand for it, but the demand, as the basis of a real or imagined exchange, endows the object with value. Therefore, 'the mutual valuation of objects' derives from exchange itself (Appadurai 1986: 4).

In archaeological contexts where first-hand information on the social context in which the object was used is lacking, the analysis tends to be limited to the subjective (investigator's) symbolism and function attached to the object, as observed in Hodder's contextual analysis. Hides (1997: 13) criticizes Hodder's contextual analysis as 'problematic circularity', because 'the artifact's meaning is derived from its context, and its context is defined by those associated artifacts which give it meaning'. This circularity can be regarded as a problem deriving from structural-functional analysis that intends to generalize meanings and functions of the object beyond the context, and this problem can happen in an extreme case with very limited information.

In Aztec research in general, where ethnohistorical information based on both Nahuatl and Spanish accounts is abundant, we have an advantage and can overcome this problem of contextual analysis. However, approaches toward material culture in Aztec research so far have been clearly divided into two trends: the structural analysis of the meanings of objects, and the functional analysis of the social system reconstructed through the objects. Some examples of structural analysis are: on jade (Thouvenot 1982), on reeds and rushes (Heyden 1983), on obsidian (Heyden 1988) and on gold (Klein 1991). Some examples of functional analysis are: the production of elite objects as part of the economic system in the Mexica capital (Brumfiel 1990); the role of turquoise in the trading system between the Southwest and Mesoamerica (Weigand, Harbottle & Sayre 1977, Harbottle & Weigand 1992, Weigand & Harbottle 1993, Weigand 1997); Mexica long-distance trade via ceramics and obsidian (Smith 1990); relationships of production of tribute, political boundaries and trade, merchants and luxuries in Mexica tributary system (Broda 1976, Berdan 1987).

Structural analysis examines the relations between objects and their contexts in order to determine or arrive at an approximation, at least, of past people's way of thinking. Possibly because themes of studies are always based on our modern categorization of objects, such as, 'jade', 'obsidian' and 'gold', the analysis has tended to ignore and hence exclude other meanings attached to the objects, the very meanings which can speak to people's history of interactions with the objects. On the other hand, functional analysis examines the roles and functions of objects in past societies to understand social systems, such as trade and tribute. However, in such analysis, the whole meanings of the objects have not been taken into consideration. Consequently, in the picture of past social systems reconstructed by functional analysis, the historical background of people's experience of objects in social development is not included. Therefore, in order to evaluate the changing contexts of the material data, people's interaction with objects, and the abstract meanings embedded within the objects, I intend to integrate broader aspects of material culture theories, which I explain in the next chapter (Chapter 4).

Studies of metaphor

Following the theoretical problems of structural and functional analysis discussed above, it seems necessary to find a way to deal with the data from a holistic point of view. Therefore, I employ the concept of metaphor to account for the dimension of dynamism of both material and contexts.

Tilley (1999: 19) discusses the use of the concept of metaphor in archaeological interpretation by referring to the works of Lakoff (1987) and Lakoff and Johnson (1980) on metaphor. Tilley (1999: 4) defines metaphor as follows:

Metaphor involves a move from a whole to one of its parts to another whole which contains that part, or from a member to a general class and then back again to a member of that class. In the most general sense metaphor involves comprehending some entity from the point of view, or perspective, of another. In this sense all knowledge and all interpretation may be claimed to be metaphorical. It is an illustrative device in which a term from one level or frame of reference is used within a different level or referential frame. It involves a transfer of one term from one system or level of meaning to another.

Thus, every concept is potentially dynamic through the medium of its metaphors.

The dynamism of metaphors is not based on arbitrary control, but on the logical extensions deriving from conceptual systems shared among the members of a society. Knab's article (1986) is a good example of studies of metaphor in a Mesoamerican context. Using botanical metaphors employed in the Nahuatl language in a historical comparison between classic and modern Nahuatl, Knab discusses the ontological basis of metaphor in a society. Knab's (1986: 54) argument is as follows:

This metaphor (botanical metaphor) does in fact exist because it is a part of the everyday life and experience of Aztec culture. It is and has been transmitted from one generation to the next on the basis of everyday experience and, though experience at the individual level is subjective in nature, the commonalities of meaning within the culture that make everyday life coherent are the basis of intersubjective reality and culture itself.

Because metaphor is based on everyday experience and is non-arbitrary, metaphoric coherence is intimately linked to people's way of understanding their environment and history. In other words, metaphor is in a sense one of the

organizing principles of conceptual systems (Knab 1986).

Considering the nature of the dataset of my study, the representations and metaphors of *xihuitl* must not be regarded as discrete but as a dynamic whole. The idea of metaphor gives me the clue to seek my fundamental approach in an *enactive* view, which opposes traditional objectivist or subjectivist views, neither of which accounts theoretically for human experiences and interactions, as I discuss in Chapter 4.

Studies of material symbolism

Although material symbolism is not a popular subject matter in Aztec cognitive research, a few studies can be mentioned in relation to my study. It may be useful to review these studies because they employ a sort of contextual analysis covering the material, philological and iconographic contexts. Material symbolism can also be applicable to some analysis of visual representations, such as iconographic representations and turquoise objects, in my own research. Some examples of studies on material symbolism are Heyden (1983, 1988), Thouvenot (1982), Peterson (1988) and Klein (1991). Among them, Heyden's work (1983) is worth referring to, because she tries to include metaphoric extensions of the meanings and functions of the objects she discusses.

Heyden (1983) examines the Nahua symbolism of reeds and rushes, or *tollin* in Nahuatl. These are plants which had multiple functions, such as use for building material, rafts, mats, chairs, musical instruments and pipes. *Tollin* roots were also edible. These aquatic plants were plentiful in the Central Valley, and the word *tollin* forms part of the name of a number of cities such as Tollan, which is the Early Postclassic city of Tula. In the Nahua religion, certain gods were associated with reeds, and life itself became seen as a precious seed placed in a reed coffer by the supreme deity, Tezcatlipoca. Heyden concludes, 'because reeds and rushes played a leading role in the economy and were associated with creation and power, they also symbolized rulership' (Heyden 1983: 93).

This short article by Heyden displays all the functions and metaphors of reeds and rushes. Functions can be interpreted as people's interaction with these materials, and metaphors are derived from this human experience. Finally,

Heyden connects the central sense of these plants' 'creation and power' to ideological symbolism: for example, a reed mat was a visual metaphor for sovereignty. In Heyden's analysis, the correlation or the central sense found among functional and symbolic meanings plays an important role in final ideological interpretation.

Although this approach covers functional, symbolic, and historical meanings of the object, its point of view is different from that of contextual analysis proposed by Hodder, which basically studies the same type of objects—in many cases, categorized as 'same' by modern investigators—in diverse contexts in order to schematize a structure of the meanings attached to the object without considering potential flexibility of these meanings. In some contextual analyses, where plentiful enough data are obtained, interpretation can be sought more directly from the correlations found in the meanings. This type of analysis is similar to 'categorization theory', which derives from what is called the *enactive* approach. Categorization theory is discussed in Chapter 4.

Studies of history of the concept

By employing the term 'conceptualization' for the title of my study, I refer to the dynamic process of the establishment of the concept of xihuitl through the Mexica's cultural and historical experience. The nature of this process is similar to that of metaphors continually evolving based on everyday experience. A few examples of studies on conceptualization, exclusive to the Mexica context, are as follows: conceptualization of heterogeneous and multiple characteristics of Huitzilopochtli, the Mexica tribal deity, through Mexica history (Brotherston 1974; Boone 1989); and diverse and changing symbolism of Quetzalcoatl, the god of life and wind, in the Mexica religion (Florescano 1999). Likewise, a few studies of historical changes in the symbolisms and morphological forms of iconographic motifs have been carried out by Beyer (1965a-g) and Caso (1967).

Dealing with the historical process of a concept is a matter of 'subjectivity of the pasts', which is part of cognitive or interpretative archaeology (Hodder 1986: 95-101). This subjectivity of the pasts can be approached by considering the fact that every concept that forms—often unconsciously—the subjectivity has its

history (Hacking 2002: 37). Therefore, it is supposed that, by tracing the history of each concept that comprised the whole concept of xihuitl, the Mexica's subjectivity or conceptual system can be revealed. In order to minimize the gap between the natures of the Mexica people of the past and myself, I examine the xihuitl concept as a whole by analyzing the linguistic, visual and ritual expressions related to xihuitl, rather than separate the meanings or definitions of xihuitl given in our modern languages.

3.4 Summary

Due to the nature of the research environment in Aztec cognitive studies, in which structural and functional frameworks have predominated, trends are such that it is difficult to situate my research topic, which is inherently dynamic. However, there are some related approaches, though minor in the trend, which are of use: a theory of metaphor, contextual analysis in dynamic contexts, and a historical approach focusing on change in meanings. Although all are subject matters of cognitive archaeology, they need to be integrated in a consistent way. To refine my approach, I sought generalized theories in cognitive studies outside archaeology, especially in cognitive science by which cognitive archaeology was originally inspired (Hodder 1993: 254). Cognitive science covers the study of mind in its widest sense (Varela et al. 1991: 4). It is said that cognitive science has not yet been established as a mature science and is yet a loose affiliation of disciplines. Artificial intelligence is an important component, but cognitive science also includes linguistics, neuroscience, psychology, sometimes anthropology, and the philosophy of mind (Varela et al. 1991: 4-5).

Chapter 4 Theory and method

As discussed in the last chapter, I attempt a dynamic analysis of the Mexica conceptual system through which people sort out their experience (cf. Lakoff & Johnson 1980: 3). Specifically I employ an *enactive* approach, which takes a position between objective and subjective views in cognitive science (Varela, et al. 1991: 9, 172-80). Categorization theory, one of the theories related to the enactive approach, is also useful in understanding the metaphoric expansion of the category of xihuitl. Likewise, by applying the enactive approach, material culture can be examined in a flexible way in which native cognition can be considered.

In this chapter, I first explain the enactive approach. Second, two theories associated with the enactive approach are presented. One of them, categorization theory, is useful in revealing the metaphorically structured relations of representations of xihuitl. The other, I call, ‘material culture analysis in dynamic contexts’, which is a reconstruction of material culture approaches in an enactive way. Finally, methods of analysis for each dataset are mentioned.

4.1 Theoretical framework

The enactive approach explains people’s experience as a product of the interaction between people’s cognition and their surrounding environment. This approach has been developed in cognitive science by scholars in interdisciplinary fields, such as Rosch (1978), Lakoff and Johnson (1980), Lakoff (1987, 1988), Sweetser (1990), and Varela et al. (1991).

In order to understand this approach, it is indispensable to clarify the way ‘subjectivity’ and ‘objectivity’ are defined. In fact, all the theoretical problems described in the previous chapter are related to this problematic dichotomy. In the following sections, first, the problems derived from the separation of ‘subject’ from ‘object’ are discussed. Second, the enactive point of view proposed by Varela et al. (1991) is described. Finally, an enactive view applied to historical

change, a process-called 'evolution as natural drift', is examined.

4.1.1 Rethinking 'subjectivity vs. objectivity'

As discussed in the previous chapter, the problem of structural or functional analysis is that it does not deal adequately with the dynamism of the concepts. This problem is caused in part by the presupposition of a complete dichotomy of subject and object. In this dichotomic view, it is supposed that an object (e.g. manufactured product) always exists by itself, outside of any intention on the part of a subject (e.g. user of the object), and that the functions and/or structure of the object remain unchanged, regardless of the ways of consumption by the subject. In fact, however, we often witness the phenomenon of shifts in the original functions of the product which are modified with time by the change (expansion or reduction) in user groups. Sometimes the functions of the product can be completely re-arranged in a different social context, or by different groups of consumers.

For example, the sailor suit invented by the British navy in the seventeenth century was designed based on the particular working environment and assigned tasks for the sailors¹. However, from the beginning of the twentieth century, a set of middy blouse and skirt has been widely adopted as a school uniform for female students by many Japanese high schools, and nowadays the use of a sailor suit in Japan is normally restricted to school uniforms of young female students, ignoring the original functions designed for sailors². Thus, the way in which sailor suits function have been re-arranged by Japanese consumers in a Japanese social context, a fact which the original producers might never have imagined.

The dichotomy between subject and object can be extended to a wider context. It is generally supposed in archaeology that the physical environment (object) exists on its own, and that the only thing people (subject) can do is to adapt or

¹ Information cited from the website *Culture of middy blouse and skirt in Japan*, at <http://www.asahi-net.or.jp/~hn7y-mur/mimisuma/mimilink15link1.htm> (1999-2000).

² Information cited from the website *Culture of middy blouse and skirt in Japan*, at <http://www.asahi-net.or.jp/~hn7y-mur/mimisuma/mimilink15link1.htm> (1999-2000).

adjust to this environment. Hence people produce or consume based on what is out there. That is to say, people living near the mountains are to live by hunting or agriculture; those living by the sea are to live by fishing. However, sometimes human beings select different ways of life even in the same physical environment.

For example, in the same desert extending over the American states of New Mexico and Arizona at the time of European contact, there were two different groups among many others, who lived in very different ways. The Pueblos formed a number of towns called *pueblos* and practiced intensive agriculture; but the Navajos, immigrants from the north, were semi-sedentary people living partly on agriculture but also, by moving to areas distant from their fields, on hunting and trading (Eggan 1979: 224; Brugge 1983: 489). The important point here is that people's living environment is a cultural and historical product of their experience, and of the way they view the physical environment. In other words, the physical environment of the earth can exist on its own, but cannot become a living environment unless it is experienced by the people (cf. Varela, et al. 1991: 198-9). Therefore, the relationship between the object and the subject is inter-connected.

The importance of experience and perception can also be observed in my datasets. For example, xihuitl as 'turquoise' was, to the Mexica, a natural mineral obtained via long distance trade from far north. However, xihuitl does not exclusively indicate 'chemical turquoise', which we categorize scientifically according to its chemical components (Harbottle & Sayre 1977: 16; Pellant 1992: 124). Other minerals that have similar texture, appearance (colour) and hardness, such as azurite and malachite were also included in the category of xihuitl (Pellant 1992: 105, 159). Therefore, a natural mineral becomes xihuitl only when the Mexica recognize it and put it in their category of xihuitl. In addition, xihuitl was important to the Mexica elite not only because it was an exotic mineral, but also because it was treasured by earlier powerful Mesoamerican kingdoms, and it expressed part of their own cosmivision. Consequently, the symbolism attached to xihuitl became widened and varied in their linguistic, iconographic and material expressions. Interestingly, in the regions of the turquoise mines, people did not

value the mineral as much as the Mexica did, and also, the techniques of turquoise manufacture were not as sophisticated as in Central Mexico (see Chapter 7).

Thus, an object, whether physical environment or manufactured product, becomes objectified only when subjects recognize it and attach meanings to it. Any physical and/or psychological shift in subjects may change the value of the object. This flexible aspect of both object and subject is important in understanding the dynamism of cognition.

4.1.2 The enactive approach

The enactive approach is a way of thinking that recognizes a dichotomy of objectivity and subjectivity but emphasizes the interactions between them. The term 'enactive' is proposed by Varela et al. (1991: 9) for the purpose of emphasizing 'the growing conviction that cognition is not the representation of a pre-given world by a pre-given mind but is rather the enactment of a world and a mind on the basis of a history of the variety of actions which a being in the world performs'. In this approach, human cognition is considered to be an outcome of the interaction between objective environment, including physical surroundings and historical past, and subjective human experience of this physical and historical environment.

Varela et al. (1991: 172) criticize two extremists' notions of cognition as, 'recovery of a pre-given outer world' (realism or objectivist point of view), and 'projection of a pre-given inner world' (idealism or subjectivist point of view). Their intention is 'to bypass entirely this logical geography of inner versus outer by studying cognition not as recovery or projection but as *embodied action*' (Varela et al.: 1991). They explain the phrase 'embodied action' as follows (Varela et al. 1991: 172-3):

By using the term *embodied* we mean to highlight two points: first, that cognition depends upon the kinds of experience that come from having a body with various sensorimotor capacities, and second, that these individual sensorimotor capacities are themselves embedded in a more encompassing biological, psychological, and cultural context. By using the term *action*

we mean to emphasize once again that sensory and motor processes, perception and action, are fundamentally inseparable in lived cognition. Indeed, the two are not merely contingently linked in individuals; they have also evolved together [emphasis by Varela, et al.].

Embodied action can be interpreted as bodily expressions of one's perception in a local environment (one's immediate surrounding physical and cultural environment). Thus, human cognition is restricted by and expressed through the human biological capacities, cultural limitations, and other surrounding social factors.

As an example, we can observe the case of the painter, called Mr. I, who lost colour vision as a result of a car accident (Sacks & Wasserman 1987; Varela et al. 1991: 164). It is reported that because of the absence of colour, the overall character of Mr. I's experience changed dramatically; everything he saw 'had a distasteful, 'dirty' look, the whites glaring, yet discolored and off-white, the blacks cavernous—everything wrong, unnatural, stained and impure' (Sacks & Wasserman 1987: 26). Varela et al. (1991: 164) summarize the case as follows:

As a result, he found foods disgusting and sexual intercourse impossible. He could no longer visually imagine colours, nor could he dream in color. His appreciation of music was also impaired, for he could no longer experience musical tones by synesthetically transforming them into plays of colour. Eventually, this person seemed to forget completely his former world of color. His habits, behavior, and actions changed as he became progressively more of a 'night person'.

Varela et al. analyze this description and argue:

... our perceived world ... is constituted through complex and delicate patterns of sensorimotor activity. Our colored world is brought forth by complex processes of *structural coupling*. When these processes are altered, some forms of behavior are no longer possible. One's behavior changes as one learns to cope with new conditions and situations. And, as one's actions change, so too does one's sense of the world. If these changes are dramatic enough—as in Mr. I's loss of color—then a different perceived world will be enacted [*my emphasis*].

'Structural coupling' means structural interrelation occurring within cognition or embodied action (cf. Varela et al.: 1991: 151-7). Therefore, in an enactive view, although human cognition is processed through a conceptual system—which

consists of multiple levels of interconnected sensorimotor sub-network and is restricted biologically and culturally—at the same time, the conceptual system itself is not static but dynamic and changeable through the constant interaction between local environment (object) and subject (cf. Varela et al. 1991: 206).

4.1.3 Evolution as natural drift

The other important aspect of enactive cognition or ‘the biological counterpart of cognition as embodied action’ is ‘evolution as natural drift’, which can be contrasted with adaptationism or extreme objectivism (Varela et al. 1991: 193-214). The basic adaptationist view employs the concept of natural selection and ‘some form of design or construction that matches optimally (or at least very well) some physical situation’ (Varela et al. 1991: 186). On the other hand, ‘evolution as natural drift’, an alternative view, insists that environmental regularities (outcomes of evolution) are not pre-given but are rather enacted or brought forth by a history of structural coupling (Varela et al. 1991: 202).

In order to describe this concept, Varela et al. (1991: 201-2) take up an example of the relations or coevolution between the colours of flowers and the vision of honeybees sensitive toward ultraviolet light as follows:

On the one hand, flowers attract pollinators by their food content and so must be both conspicuous and yet different from flowers of other species. On the other hand, bees gather food from flowers and so need to recognize flowers from a distance. These two broad and reciprocal constraints appear to have shaped a history of coupling in which plant features and the sensorimotor capacities of bees coevolved. It is this coupling, then, that is responsible for both the ultraviolet vision of bees and the ultraviolet reflectance patterns of flowers.

Coevolution never stops, and ‘organisms have constructed environments that are the conditions for their further evolution and reconstruction of nature into new environments’ (Varela et al. 1991: 202)³. This form of coevolution leads to

³ Varela et al. cited this sentence from: Lewontin R. 1983. The organism as the subject and object of evolution. In *Scientia* 118: 63-82.

further changes in daily life and environment. Thus, the concept of 'evolution as natural drift' deals with the shifts that are produced through the interactions between subjects and objects.

4.1.4 Summary: theoretical framework

Varela et al. (1991: 205) summarize the definition of the enactive approach with 'evolution as natural drift' as follows:

... to situate cognition as embodied action within the context of evolution as natural drift provides a view of cognitive capacities as inextricably linked to histories that are lived, much like paths that exist only as they are laid down in walking. Consequently, cognition is no longer seen as problem solving on the basis of representations; instead, cognition in its most encompassing sense consists in the enactment or bringing forth of a world by a viable history of structural coupling.

In this definition, human cognition is always structured by history and environment. This notion reminds me of our custom whereby the name of a newly invented product is often drawn from an already established word that is adopted or re-arranged rather than created as a brand new word, as an adaptationist would do (see Chapter 1 for an example of 'mouse' as a computer's pointing device). In the process of such naming, however, it is not supposed that the re-use of the old name is always effective for similar devices subsequently introduced. For example, 'track pad' and 'track ball' are not called 'mouse', although they share the same functions as pointing devices. Varela et al. (1991: 214) explain this 'aboutness' of our cognition:

... our human embodiment and the world that is enacted by our history of coupling reflect only one of many possible evolutionary pathways. We are always constrained by the path we have laid down, but there is no ultimate ground to prescribe the steps that we take.

The enactive way of thinking, which does not restrict methodology, seems also applicable to any kind of study in social sciences and historical studies, including anthropology and archaeology, as long as there are enough data and

information in the subject field. Varela et al. (1991: 178-9) also suggest that one possible extension of the view of cognition as enaction is to the domain of cultural knowledge, such as folktales, names for fishes, or jokes in anthropology, because the knowledge does not preexist in any one place or form but is enacted in particular situations.

This enactive approach is appropriate for my study of the Nahuatl definitions of xihuitl. For example, ‘turquoise’, one of the definitions of xihuitl, was a mineral introduced into a Postclassic context in Mesoamerica. Therefore, ‘turquoise’ could have been added by the Mexica to an already existing category of xihuitl (see Chapters 5, 7). Such an application of an enactive approach to the analysis of a category is further explained by categorization theory, which is discussed in the next section.

4.2 Theories in enactive approach

Among the various studies that employ an enactive approach, I utilize categorization theory, which offers a suitable framework for understanding the structure of xihuitl definitions and iconographic representations. In this section, I first introduce categorization theory as discussed by Rosch (1978) and Lakoff (1987). Then three types of analyses developed from categorization theory are described. These are metaphor and definition (Lakoff and Johnson 1980), radial categories (Lakoff 1987) and historical change in semantics (Sweetser 1990). Second, an enactive approach is applied to analytical methods of material culture theories. With specific reference to my datasets, analytical concepts of ‘objectification’, ‘communication of meaning’, and ‘reception by others’ are synthesized.

4.2.1 Categorization theory

Although the enactive approach in particular was defined and discussed by Varela

et al. (1991), similar approaches have been developed in other fields of cognitive science. One of the theories in cognitive psychology from which the enactive approach was derived is categorization theory (Varela et al. 1991: 176-9).

From the time of Aristotle to the later work of Wittgenstein, categories were assumed to be abstract containers, with things either inside or outside the category (Lakoff 1987: 6). We categorize anything both concrete and abstract, including events, actions, emotions, spatial relationships, social relationships, governments, illnesses, and entities in both scientific and folk theories, such as electrons and colds (Lakoff 1987).

In a classical objectivist view, things are assumed to be in the same category if and only if they have certain properties in common, which means these shared properties are taken as defining the category (Lakoff 1987: 6; Lakoff & Johnson 1980: 122). However, empirically speaking, this kind of categorization does not accord with human experience. Categorization is primarily a means of comprehending the world, and it must serve that purpose in a sufficiently flexible way (Lakoff & Johnson 1980: 122). For example, speaking of the category of 'chair', not every member of 'chair' necessarily has four legs, seat and back, such as a deck chair or a beanbag chair, but these are chairs because these are pieces of furniture for a person to sit on (cf. Rosch 1978: 33; Lakoff & Johnson 1980: 122-3).

The enactive approach attempts to account for the interactional properties that characterize our concept of an object, and that form as a structured gestalt (a holistic structure) with dimensions that emerge naturally from our experience (Lakoff & Johnson 1980: 122). According to Lakoff (1987: 14), those who started to argue this new approach to categorization theory are Wittgenstein (1953), Austin (1961), Lounsbury (1964) and Zadeh (1965). Opposing the classical category, which has clear boundaries defined by common properties, Wittgenstein (1953) proposed the ideas of family resemblance, centrality, and gradience. Austin (1961) proposed that the relationships among meanings of words were both a crystallization of earlier ideas in lexicography and historical semantics, and a precursor of the contemporary view of polysemy as involving family resemblance among meanings. Lounsbury (1964) analyzed kinship

categories as an important link between the idea that a category can be generated by a generator plus rules and the other idea that a category has central members and sub-categories. Zadeh (1965) began the technical study of categories with fuzzy boundaries by conceiving of a theory of fuzzy sets as a generalization of standard set theory.

Rosch presents the first general perspective on the study of categorization. According to Rosch (1977, 1978), we categorize things in terms of prototypes, family resemblance, interactional properties, contrasting categories and 'basic-level' categories. In the following paragraphs, I explain these concepts using the example of the category of 'chair' presented by Lakoff and Johnson (1980: 122-3).

Prototype

A prototype is a representative member or a good example of the category. A prototypical chair normally has a well-defined back, seat, and four legs, such as a kitchen chair. At the same time, there are non-prototypical chairs, such as beanbag chairs, hanging chairs, swivel chairs, contour chairs, and barber chairs. We understand these non-prototypical chairs as being chairs, not just on their own terms, but by virtue of their relation to a prototypical chair as a piece of furniture to sit on (Lakoff & Johnson 1980: 122).

Family resemblances

Family resemblances are perceived similarities between prototype and non-prototypical members of categories (Lakoff 1987: 42). We understand non-prototypical chairs as being chairs not because they share some fixed set of defining properties with the prototype, but because they bear a sufficient family resemblance to the prototype. A beanbag chair may resemble a prototypical chair in a different way than a barber chair does. There is no fixed core of properties of prototypical chairs that are shared by both beanbag and barber chairs, but they are both chairs because each, in its different way, is sufficiently close to the prototype via interactional properties as mentioned below (Lakoff & Johnson 1980: 123).

Interactional properties

Interactional properties are prominent properties that count in determining sufficient family resemblance. Chairs share with stools and other kinds of seats the purposive property of allowing us to sit, but the range of motor activities (physical actions) permitted by chairs is usually different from stools and other seats (Lakoff & Johnson 1980: 123). Thus, the interactional properties relevant to our comprehension of chairs include perceptual properties (the way they look, feel, etc.), functional properties (allowing us to sit), motor-activity properties (what we do with our bodies in getting in and out of them and while we're in them), and purposive properties (relaxing, eating, writing letters, etc.) (Lakoff & Johnson 1980).

Contrasting categories

Categories occur in systems, and such systems include contrasting categories (Lakoff 1987: 52). The category of 'chair' can exist because there are contrasting categories of 'similar but not chairs'. Therefore, a category functions only in a relative context, in which contrasting categories always exist. Within the super-ordinate category of 'things to sit on', 'chair' contrasts with 'stool', 'sofa', 'bench' and so on. If one of these contrasting categories was not present, 'chair' would no doubt cover a very different range (Lakoff 1987).

'Basic-level' categories

'Basic-level' is regarded as a cognitively 'middle' in a general to specific hierarchy (Lakoff 1987: 13). Lakoff (1988: 133-4) explains the concept of 'basic-level' as follows:

The basic level is neither the highest nor the lowest level of categorization. It is somewhere in the middle. For example, *animal* is a super-ordinate category for *cat*, while *manx* is subordinate. The basic level is the level at which human beings interact with their environments most effectively and process and store and communicate information most efficiently. ... The basic level is also the level at which people categorize real world objects most accurately. Berlin, Breedlove, and Raven (1974) and Hunn (1977), in massive studies of Tzeltal plant and animal names, found that at the basic

level, folk terminology for plants and animals fit biological taxonomies almost perfectly⁴. At higher and lower levels, accuracy dipped sharply [emphasis by Lakoff].

For example, basic objects such as ‘chairs’ are at the most inclusive level at which there are attributes common to all or most members of the category (Rosch 1978: 31). Categories one level more abstract are super-ordinate categories (e.g. furniture) whose members share only a few attributes among each other. Categories below the basic-level are bundles of common and thus predictable attributes and functions, but contain many attributes that overlap with other subordinate contrasting categories (e.g. ‘kitchen chair’ shares most of its attributes with other kinds of chairs) (Rosch 1978). Basic-level categories are the most natural categories within which the members share the great part of their properties. Thus, it is supposed that the basic-level is the category which best reflects the structure of attributes perceived in the world (Rosch 1978).

Summary

In a category there is always a prototype of the members, and the degree of difference (or distance) of each member from the prototype varies. Given our bodies and our cognitive apparatus, the links relating the prototype and non-prototypes are interactional properties that arise from the result of our interactions as part of our physical and cultural environments (Lakoff 1987: 51). It is important to realize that these properties are not purely objective and ‘in the world’; rather, they have to do with the world as we interact with it—as we perceive it, image it, affect it with our bodies, and gain knowledge about it (Lakoff 1987). The existence of contrasting categories maximizes perceived similarities among category members and minimizes perceived similarities across contrasting categories (Lakoff 1987: 52). At the basic-level, it is assumed that categories are maximally distinct (Lakoff 1987). Furthermore, categories can be systematically extended in various ways for various purposes and also be

⁴ Berlin, Brent, Dennis E. Breedlove, & Peter H. Raven 1974. *Principles of Tzeltal Plant Classification*. New York: Academic Press
Hunn, Eugene S. 1977. *Tzeltal Folk Zoology: The Classification of Discontinuities in Nature*. New York: Academic Press

open-ended (Lakoff & Johnson 1980: 124).

As mentioned above, this flexibility of categorization manifests itself in many levels of our everyday life. In the following sections, as part of my studies related to the category of *xihuitl*, three types of categorization are highlighted, namely, linguistic definition, radial categories, and semantic changes.

4.2.1.1 Metaphor and definition

According to Lakoff and Johnson (1980: 3, 118), metaphor is pervasive in everyday life in language, thought, and action, and metaphor plays an essential role in characterizing the structure of our experience. The functions of metaphor characterize the enactive cognition, and the mechanism of categorization is often described as ‘metaphoric’ (cf. Lakoff & Johnson 1980: 122-4). In their study on metaphor, Lakoff and Johnson (1980: 117-9) explain ‘definition’ as a kind of categorization.

The act of defining starts from our need to grasp abstract concepts by means of other concepts that we understand in clearer terms (Lakoff & Johnson 1980: 115). As an example, Lakoff and Johnson (1980: 115-6) present the definition of ‘love’ as follows:

... if you look in a dictionary under ‘love’, you find entries that mention affection, fondness, devotion, infatuation, and even sexual desire, but there is no mention of the way in which we comprehend love by means of metaphors like LOVE IS A JOURNEY, LOVE IS MADNESS, LOVE IS WAR, etc. ... Hints of the existence of such general metaphors may be given in the secondary or tertiary senses of *other* words. For instance, a hint of the LOVE IS MADNESS metaphor may show up in a tertiary sense of the word ‘crazy’ (=‘immoderately fond, infatuated’), but this hint shows up as part of the definition of ‘crazy’ rather than as part of the definition of ‘love’ [emphasis by Lakoff & Johnson].

Definitions for a concept given in dictionaries are seen as characterizing the things that are inherent in the concept itself, such as, ‘fondness, affection, and sexual desire’, which is an objectivist view of categorization. However, we comprehend ‘love’, for the most part metaphorically based on other natural kinds of experience such as ‘journey’, ‘madness’, ‘war’, and so on. According to Lakoff and Johnson (1980: 117), natural kinds of experiences are a product of our

bodies (perceptual and motor apparatus, mental capacities, emotional makeup, etc.), our interactions with our physical environment (moving, manipulating objects, eating, etc.), and our interactions with other people within our culture (in terms of social, political, economic, and religious institutions). Because defining concepts (e.g. journey, madness, war) emerge from our interactions with one another and with the world, the concept they metaphorically define (e.g. love) is understood in terms of interactional properties (Lakoff & Johnson 1980: 119-20).

Thus, individual concepts are not defined in an isolated fashion or solely in terms of inherent properties. Instead, they are defined primarily in terms of their roles in natural kinds of experiences or interactional properties (Lakoff & Johnson 1980: 125). Likewise, a definition is not a matter of giving some fixed set of necessary and sufficient conditions for the application of a concept; instead, it is defined by prototypes and by types of relations to prototypes (Lakoff & Johnson 1980). Rather than being rigidly defined, concepts arising from our experience are open-ended, and metaphors are systematic devices for further defining a concept and for changing its range of applicability (Lakoff & Johnson 1980).

4.2.1.2 Radial categories

Radial categories consist of a central sense and extended senses from the central sense. In the radial categories the variants (category members) are not generated from the central type (prototype) by general rules but are instead extended by convention (Lakoff 1987: 91).

For example, Lakoff (1987: 104-9) takes up a case of the Japanese classifier 'hon'. Classifier languages are languages in which nouns are marked as being members of certain categories (Lakoff 1987: 92). In its most common use, 'hon' classifies long, thin objects: sticks, canes, pencils, candles, trees, ropes, hair, etc. 'Hon', however, can be extended to what are presumably less representative cases, such as: hits and pitches in baseball (straight trajectories, formed by the forceful motion of a solid object, associated with baseball bat, which is long, thin, and rigid); rolls of tape (which unrolled are long and thin); movies (they come in reels like rolls of tape); medical injections (done with a needle, which is long and thin); telephone calls (which come over wires and which are instances of the conduit

metaphor); letters (another instance of communication; moreover, in traditional Japan, letters were scrolls and hence sticklike) (Lakoff 1987: 104).

The relationship between the shape of the bat and the trajectory formed by the batted ball—between a long, thin thing and a trajectory—is a common relationship between image schemas (imaginative structuring and projection of our bodily experience) that forms the basis for the extension of a category from a central to a non-central case (Lakoff 1987: 105; Johnson 1987: xix). That is, there is an image schema transformation from ‘trajectory schema’ to ‘long, thin object schema’ (Lakoff 1987: 106). This image schema transformation is one of the many kinds of cognitive relationships that can form a basis for the extension of a category (Lakoff 1987).

In the case of a roll of tape, motivation for the extension of a category comes from ‘conventional mental images’ and metonymy (Lakoff 1987: 107). We have two conventional mental images of tape—when it is rolled up (not in use) and when it is unrolled (functioning). The image of the unrolled, functional part fits the long, thin object image schema associated with the central sense of ‘hon’ (Lakoff 1987: 108). The functional part of the conventional image is standing for the whole image, for the sake of categorization; here metonymy is involved (Lakoff 1987). Likewise, in the case of medical injections, the principal functional object (the needle) is long and thin; the needles can be classified with ‘hon’ and, by metonymy, so can the injections (Lakoff 1987).

In this way, extended senses of ‘hon’ are based on its central sense, but extended senses may themselves serve as the basis for further extensions via ‘category chaining’ (Lakoff 1987). Lakoff (1987: 108-9) explains the case of letters that are also classified with ‘hon’ as follows:

First, letters were originally in the form of scrolls, often wound around long thin wooden cylinders. They have been categorized with ‘hon’ ever since, and that image remains very much alive in Japanese culture through paintings and the tradition of calligraphy. Second, the conventional image of writing a letter involves the use of a pen, which plays a principal functional role and is also a long, thin object. Third, letters are a form of communication and therefore an instance of the conduit metaphor.

Then letters and telephone calls become intermediate steps in a ‘chain’

motivated by the conduit metaphor for communication (Lakoff 1987). Therefore, in the extended category of 'hon', radio and TV programs as instances of communication (by the conduit metaphor) are also included. Likewise, movies, as an instance of communication at a distance and with the conventional images associated with the movie reel, are also included.

Interestingly, the non-central cases of the 'hon' category vary in some cases from speaker to speaker (Lakoff 1987: 109). Every speaker of Japanese includes the central members, such as staffs and baseball bats; and many of the extensions, such as telephone conversations, home runs, or spools of thread have become conventionalized for speakers in general. However, some speakers do not include baseball pitches, for example. The variation in usage involves chaining that has not yet stabilized but which shows the same principles at work as in the stable conventionalized extensions (Lakoff 1987).

Thus, in the radial categories, the central model determines the possibilities for extensions, together with the possible relations between the central model and the extension models (Lakoff 1987: 91). The members of the category do not need to share the relevant common properties, as can be seen in the case of sticks and TV programs in the same 'hon' category. The extensions of a central model can be described as being motivated by the central model plus certain general principles of extension, such as image schema transformations, conventional mental images, metonymy and category-chaining (Lakoff 1987: 91-109). The other important characteristic is that the validity of usages in further extensions varies depending on the stability of the motivating process. According to Lakoff (1987: 107), motivation depends on whether extensions 'make sense' to speakers or not; in other words, each sensible extension of a category needs to be independently motivated, even with a slightly weakened criterion of adequacy.

4.2.1.3 Historical change in semantics

An example of metaphorical changes in a concept and of the flexibility of definitions is presented by Sweetser (1990). Sweetser (1990: 8-9) argues that historical changes of meaning of words in languages can be explained as metaphorical extensions from the concrete and bodily relevant senses of

categories and image schemas to more abstract meanings. For example, 'to see' has come to mean 'to understand' (Sweetser 1990: 32-4; Varela et al. 1991: 178).

In a historical case study of English and Indo-European sense-perception verbs, Sweetser (1990: 21) argues that deep and pervasive metaphorical connections link the vocabulary of physical perception and that of intellect and knowledge. For instance, vision verbs are connected with intellection, such as 'to see' and 'to understand' (Sweetser 1990: 38). Some examples of the etymology of vision verbs, which are associated with physical touching and manipulation, are as follows: 'behold' (catch sight of), 'perceive' (Latin *-cipio* 'seize', both general and visual meanings), 'scrutinize' (Latin *scrutari* 'pick through trash'), and 'examine' (Latin *ex + agmen-* 'pull out from a row') (Sweetser 1990: 32). The probable basis of these associations is explained to be the channeling and focusing ability connected with our visual sense (Sweetser 1990). Likewise, a visual domain vocabulary in modern English can be used to structure the description of intellectual processes; for example, just as a physical object can be opaque or transparent, an argument can be 'clear', 'opaque', 'transparent', or 'muddy' to the mental vision (Sweetser 1990: 32, 40).

Sweetser (1990: 45) studies how the vocabulary of physical perception shows systematic metaphorical connections with the vocabulary of internal self and internal sensations, and she concludes that these connections are not random correspondences but highly motivated links between parallel or analogous areas of physical and internal sensation. In her argument it is emphasized that the models of our internal world are not always consistent, and in particular that we have multiple, apparently inconsistent mappings of our physical selves onto our internal world, which necessitates historical semantic analysis (Sweetser 1990). As Sweetser (1990: 45-6) says: 'Through a historical analysis of 'routes' of semantic change, it is possible to elucidate synchronic semantic connections between lexical domains; similarly, synchronic connections may help clarify reasons for shifts of meaning in past linguistic history'.

The importance of her study is its emphasis on historical analysis by referring to the current semantic connections among concepts that form a certain kind of category. Therefore, the analysis of 'interactional properties' and/or

‘motivations for expansion’ can give an idea of the historical process of conceptualization of the categories.

4.2.1.4 Summary: categorization theory

The issues in categorization with which Rosch is primarily concerned have to do with explaining the categories found in a culture and coded by the language of that culture at a particular point in time (Rosch 1978: 28). This means that categorization theory deals only with structural aspects of categorization and does not deal with the process or development of categories. However, the concept of radial categories, which is based on categorization theory, explains the process of extensions of the categories (Lakoff 1987: 104-9). Likewise, Sweetser’s view (1990) of semantic change can offer an access to the historical aspects of changes in categories. In this sense, the studies of radial categories and semantic change complement the temporal aspect of an enactive approach, namely, ‘evolution as natural drift’.

As the framework for my research, the enactive approach and ‘evolution as natural drift’ serve to harmonize methodology with data, analysis and interpretation. For instance, my study concerns the linguistic definitions of *xihuitl* and the correlations among metaphors of each definition. Therefore, categorization theory is useful in identifying the correlations of definitions and metaphors of *xihuitl* by its prototypes, interactional properties and contrasting categories. Lakoff and Johnson’s view (1980) of metaphoric structure of definitions is helpful to elucidate the holistic image of *xihuitl*. In order to learn from where each metaphor and definition derived, how each related with other concepts, and in what way the whole concept expanded, Lakoff’s concept (1987) of radial categories is effective. Applying Sweetser’s historical method (1990), each major representation and concept extracted from the results of structural analysis can be traced back its extension to the central sense, and can be examined according to its historical process of conceptualization through Mexica cognition and history.

4.2.2 Material culture analysis in dynamic contexts

In this section, following the enactive approach, I attempt to integrate both subjective and objective views, as some material culturalists have argued (e.g. Appadurai 1986) (see Chapter 3). In order to shed light on the functional and structural dimensions of each representation in an enactive way, three concepts of material culture theory are employed: objectification (object as a cultural product through internalization of external environment), communication of meaning (subjective meaning and use of the object), and reception by ‘others’ (consumption of these meaning and usage by others). In the following subsections, each concept is summarized and a few examples of its application to my study are provided.

Objectification

Objectification is a concept that focuses on the inseparability of subjectivity and objectivity in material culture. The term ‘objectification’ is defined by D. Miller (1987: 12) as follows: ‘The term is used to describe a series of processes consisting of externalization (self-alienation) and sublation (reabsorption) through which the subject of such a process is created and developed’.

By examining Munn’s works (1971, 1973) on the iconography of a group of Australian aborigines and on the Melanesian kula exchange system, D. Miller (1987: 13) argues that the material ‘asserts the absolute necessity of culture for the establishment of all human relations, and discredits the idea that the relationship between people and the things they construct in the physical world is separable from some prior form of social relation’. According to D. Miller (1987: 60), culture is the process of this objectification, which portrays an image of an unfragmented consciousness. Therefore, the experienced historical and cultural factors are main concerns here, but not the symbolic interpretation of an object.

D. Miller’s concept can be applied in my study to examine, for example, the Mexica objectification of turquoise and specific iconographic representations which reflect the Mexica’s experience of inherited Mesoamerican cultures. In the case of turquoise objects, a few historical-cultural factors, such as the

turquoise trading system with the northern cultures established by the Toltecs (claimed as ancestors by the Mexica), the Mexica migration history from the north, and the gradual shift from earth-water cult symbolism to solar-warrior cult symbolism in the Central Valley can be considered the cultural background of the Mexica selection of turquoise, juxtaposing with traditional jade mined in the south of Mesoamerica (see Chapter 7). Likewise, each iconographic representation of xihuitl has a different background. For example, the quincross was a traditional Mesoamerican symbol intensively used by the Teotihuacanos, whose art style was often reproduced by the Mexica (cf. López-Luján 1989, Umberger 1987). However the conventionalized usage of the trapeze-and-ray sign as a year marker was peculiar to the Mixteca-Puebla style, to which the Aztec art style belongs (Langley 1986: 148) (cf. Chapter 6).

There are also a few Mexica inventions in iconography, such as the turquoise year sign and the Aztec year sign. However, they should not be regarded as accidental inventions but rather Mexica modifications of the morphological forms and symbolisms of the other Mesoamerican iconographic traditions (cf. Chapter 6). Hodder (1992: 14) explains historical extensions of the use of objects as follows:

Any use of an artifact depends on the previous uses and meanings of that artifact or of similar artifacts within a particular historical context. However fast that context is changing the meanings of artifacts at time *t* are not arbitrary because they are partly dependent on the meanings of artifacts at time *t-1*.

In other words, all the Mexica expressions were based on their way of understanding their pasts. Therefore, the analysis of objectification focuses on the ways the Mexica applied and transformed (or consumed) their historically-culturally inherited elements as part of their own cultural system.

Communication of meaning

In the stage of objectification, how historical and cultural factors were internalized in the Mexica use of each expression of xihuitl is examined. The stage of communication of meaning explores symbolism and functions attached to each representation in a specific context by relating and comparing it with those of

other objects. For this purpose, a contextual analysis modified in an enactive way is applied here. As mentioned in the foregoing discussion, Hodder's contextual analysis deals with three types of meaning of an object, which are function, symbolism and history (Hodder 1986, 1987). What makes this analysis enactive is my attempt to consider or to account for the surrounding contrasting categories that distinguish the xihuitl category. The matters discussed here are limited especially to the Mexica elite's subjective understanding of the objects.

For example, most of the turquoise objects buried in the offerings of the Templo Mayor have been found at the Huitzilopochtli (war and solar deity) side of the pyramid, which suggests, based on known caching practices, that turquoise was related to the concept of war, sacrifice and the solar cult. In this case, turquoise can be contrasted with jade, which traditionally represented both water and sun in Mesoamerica but was concentrated in the offerings of the Tlaloc (rain deity) side of the pyramid⁵. The location of each turquoise object and its relation to other objects within the same offering are also significant (cf. Chapter 7).

In addition to the archaeological data, ethnohistorical documents provide information on some uses of turquoise. According to Sahagún (1953-81: Bk 2, 164), some turquoise ornaments were worn by the Mexica rulers, but suburban rulers wore wooden imitations painted turquoise colour. In this case, our modern understanding of 'chemical turquoise' can be contrasted with the category of 'cultural turquoise' or the materials regarded as xihuitl by the Mexica. The same information can also be analyzed from a functional point of view; this restricted use of turquoise ornaments can be interpreted as a symbol of power and differentiation among Mexica elites. This restriction may have reflected elite manipulation of production and the tribute system of the turquoise objects (cf. Brumfiel 1990; Houston & Stuart 1996) (cf. Chapter 7).

The analytical concept of 'communication of meaning' is useful for elucidating Mexica symbolism and functions internalized through the objects as well as for locating the objects in a flexible and dynamic context.

⁵ There are actually two turquoise objects found from the Tlaloc side, which may represent the Tlaloc's relationship with fire (Graulich, personal communication 2007).

Reception by ‘others’

Whereas the last stage, communication of meaning, deals with the Mexica subjective intention, this stage discusses how the symbolism and intended meanings were consumed by those who directly or indirectly shared the Postclassic Mexica cosmivision. This can be considered, in a way, as others’ objectification of xihuitl through the interaction with the Postclassic Mexica.

I use the term ‘others’ referring to Gell’s term ‘recipient’. In his work on the function of ‘art’ as artifact in social context, Gell (1998: 24) explains the concept of ‘recipient’ as follows:

Artists do not (usually) make art objects for no reason, they make them in order that they should be seen by a public, and/or acquired by a patron. Just as any art object indexes its origins in the activity of an artist, it also indexes its reception by a public, the public it was primarily made ‘for’.
... an index has always to be seen in relation to some specific reception and this reception may be active or passive, and is likely to be diverse.

This means that recipients are not limited to those who the producers or users aim at but also to anyone who appreciates the objects in a wider context. However, the reception does not always fit with the producer’s or user’s intention. As Hodder (1992: 13) says: ‘the producer or user of an object is always to some degree uncertain about how the object will be given meaning by others’. This gap of production knowledge among different groups of people such as producer, trader, and consumer has been also discussed by Appadurai (1986: 42).

In my study, ‘others’ can be represented by the suburban elite subordinated to the Aztec empire (primary consumers), the coexisting American Southwestern people (miners of turquoise), the Mixtecs (producers of turquoise objects), as well as the Nahuas of the Colonial period (successors of the Postclassic Mexica culture). The suburban elite witnessed and experienced the use of turquoise restricted by the Mexica elite. Since Late Classic times, American Southwestern cultures were strongly influenced by the cultures that thrived in the Central Valley of Mexico via the trade of turquoise (Harbottle & Weigand 1992, etc), and Southwestern use and symbolism of turquoise, including linguistic usage (of the word *chalchihuitl* for turquoise) may reflect such interaction with the Central Valley (cf. Chapter 7). Although the Mixtecs were politically subordinated to

the Mexica, their art style and technique appear to have influenced Aztec style (cf. Nicholson 1966b, 1976; Pasztory 1983) (cf. Chapter 2). The Mixtecs were strongly influenced culturally by the Mexica but they still retained their own way of using turquoise, such as using turquoise objects in the context of caves, which can be contrasted with the Mexica use of turquoise in and around the capital. The Nahuas of the Colonial period consumed their own ancestors' cosmovision as well. Such Colonial reception can be especially observed in the changes in art style in the painted manuscripts. For example, the usage of the turquoise year sign for counting of years is exclusive to the Colonial Central Mexican codices.

Summary: material culture analysis

I have summarized material culture theories in an enactive way. The analytical concept of 'objectification' is used to investigate the historical and cultural factors experienced by the Mexica, the experience which led to their selection of turquoise and to the specific iconographic symbols to represent xihuitl. In the stage of 'communication of meaning', contextual analysis is employed to examine the xihuitl category in a dynamic context including contrasting categories and to elucidate xihuitl's symbolism and functions. Especially the outcomes of the analysis of 'objectification' and 'communication of meaning' are supposed to serve to reveal the Mexica conceptual system. Then, in 'reception by others', it is discussed how the Postclassic Mexica cosmovision was experienced by other contemporary cultures and by the Nahua successors in the later period. This analysis can locate the Mexica objectification or experience in a relative context.

This enactive approach is thought to provide a holistic view of xihuitl, and in order to cover both the material and non-material aspects of meanings, I include all the related expressions of xihuitl rather than analyze only one expression, such as material culture or ritual, by breaking up the concept. For the purpose of analyzing the concept as a whole, I examine linguistic, iconographic, material, and ritual expressions representing the concept of xihuitl. A variety of the levels of experience found in the representations of xihuitl is thought to reflect the difference in the nature of each expressional medium (cf. Chapter 9).

4.3 Method

In this section, I present the analytical method I use for each kind of expression by applying the theories and approaches discussed in foregoing sections. Four expressions representing xihuitl—linguistic, iconographic, material (turquoise objects), and ritual expressions—are to be examined, but the difference in the nature of each expression is considered. Due to differences in the process of analyses of each expression, different aspects of the foregoing theories and approaches are emphasized.

Especially for the data analyses in Chapters 5 to 8, the major sixteenth century written sources I refer to are modern editions, including widely accepted English translations of: Sahagún (1926, 1953-81, 1993), Durán (1977, 1984, 1994), *Historia de los mexicanos por sus Pinturas/Historia de México*, edited by Garibay (1985), Alva Ixtlilxóchitl (1985), Tezozómoc (1980, 1992), Torquemada (1976-83), *Códice Chimalpopoca* (1992, and Bierhorst 1992). The painted manuscripts I employ for my studies are listed in Chapter 6.

4.3.1 Linguistic expressions (Chapter 5)

Linguistic expressions include definitions and metaphors (extended senses) of xihuitl and their actual usages in linguistic contexts. Linguistically speaking, definitions and extended senses form the category of xihuitl, and so their structural correlations are analyzed employing categorization theory.

Particularly, the concepts of basic-level and contrasting categories are useful. It is interesting to note that xihuitl sometimes becomes basic-level (as ‘grass’), and sometimes not (as ‘turquoise’, ‘solar year’, ‘fire’). Xihuitl as grass is often used in the names of plants or of grass. This case stands in contrast to other general terms related to plants, such as *cuahuitl* (tree) and *xochitl* (flower). At the same time, xihuitl as turquoise maintains a complex relation with *chalchihuitl*. When *chalchihuitl* represents ‘greenstone’, xihuitl becomes its subordinate category, but when *chalchihuitl* represents ‘jade’, it becomes a counter-category to xihuitl. In

this way, *xihuitl* contains basic and non-basic-level definitions within itself, but even among seemingly different levels, there are still central senses, namely the concepts of ‘blue-green colour’ and ‘heat of fire’.

The notion of radial categories is also helpful in understanding the metaphoric structure of *xihuitl* definitions, because it seems that all definitions extend radially from either the basic-level sense of ‘grass’ or the central senses of ‘blue-green’ and ‘heat’ rather than correlate via interactional properties. For example, the concept of ‘preciousness’ seems extended from the value of ‘turquoise’, because *xihuitl* as ‘preciousness’ often appears together with *chalchihuitl* as ‘preciousness (like jade)’. ‘Turquoise’ is also connected to the central sense of ‘blue-green’; therefore, it is possible that ‘preciousness’ and ‘turquoise’ correlate via category chaining. Such extensions can be analyzed through individual linguistic usages in relation to their contexts.

Thus, by applying categorization theory and radial categories, the correlations among *xihuitl* definitions can be explained, and the *xihuitl* category itself can be distinguished via its contrasting categories. Then, by examining the motivations that connect definitions—or the attributes that promote extensions—, the historical process of expansion of the *xihuitl* category can be elucidated.

4.3.2 Iconographic expressions (Chapter 6)

Iconographic representations contain both characteristics of linguistic definitions and material expressions; they are ‘linguistic’ in terms of their functions as indicators (*ground*) of specific objects/notions and are also conveyers of meanings (*interpretant*) (Rochberg-Halton 1982: 459)⁶. Iconographic representations can also be often materialized in depictions on sculptures, codices, or mural paintings; but this does not mean they directly *index* specific aspects of the concept as the

⁶ Rochberg-Halton (1982: 459) explains Peirce’s point of view for definition of the sign: ‘...each sign consists of three elements: the *ground*, which stands for its *object*, to some other interpreting sign, the *interpretant*. ... The *ground*, or inherent quality of the sign, would come closest to Saussure’s signifier, the formal phonetic and graphic structure of the sign, and the *interpretant* would come closest to Saussure’s signified, i.e., the meaning conveyed by the structure’.

way ‘turquoise mineral’ does (cf. Peirce 1956: 102, 107-11)⁷. Iconographic signs only represent certain aspects of the concept, and some definitions and extended meanings are embedded or overlapped depending on contexts. For example, the trapeze-and-ray symbol represents ‘fire’ and ‘solar year’, and the turquoise glyph represents ‘solar year’ and ‘turquoise’.

As for the linguistic aspect of iconography, categorization theory serves effectively to analyze the structure of the variety of representations.

Interestingly, the iconographic representations also form a kind of radial category but very different from that of linguistic definitions, and the central senses are elements related to ‘solar cult’ and/or to ‘temporal cycle’. For example, both the phonetic glyph *xiuh* and the turquoise year sign appear to have been extended from the traditional quincross symbol via its morphological form representing ‘solar (temporal) cycle’.

As for the material aspect, material culture analysis reveals the Mexica ‘objectification’ of the Mesoamerican traditional art style. Xihuitl iconographic representations contain basically four types of symbols: the trapeze-and-ray sign, the quincross, the Aztec year sign, and the phonetic glyph *xiuh*. The first two had already been used by other Mesoamericans before the Mexica, but the other two were Mexica inventions. However, these inventions were not arbitrary but rather a sort of extension or modification that was based on the Mexica’s interactions with already existing iconographic traditions (objectification of the traditions). At the same time, the traditional symbols were also attached new meanings by the Mexica (communication of meaning). In this analysis, such changes in meanings and functions of the representations are examined together with their material context (sculpture, codices, etc.) and graphic context (with what symbols and figures xihuitl appears).

In this way, once the structure of the iconographic representations becomes clear, they can then be contrasted with the linguistic category, in order to describe the full range of Mexica experience and expression through the media of language and iconography.

⁷ Peirce (1956: 102) explains: ‘An Index is a sign which refers to the Object that it denotes by virtue of being really affected by the Object’.

4.3.3 Material expressions (Chapter 7)

‘Turquoise’ is one of the definitions of *xihuitl*, and it is the only physical object that *indexes* the concept. For the study of turquoise objects, I present all the objects attributed to Mesoamerican cultures stored in museums and/or published in catalogues.

Material culture analysis is employed to examine the correlations between local contexts (cave, tomb, offering, etc.) and types of turquoise object (mask, shield, knife, etc.) in the specific cultures (Toltec, Mixtec, Mexica, etc.). Each local context has its own functions and symbolism, and so does each type of object. For example, in Teotihuacan times, greenstone (jade) masks were placed on the face of the dead in the funeral context (cave or tomb). Considering the symbolism of greenstone as ‘life’ in afterlife (Sahagún 1953-81: Bk 3, 45), greenstone masks may have represented the same symbolism. Later, in Postclassic times, turquoise became consumed intensively in Central Mexico and the Mixtecs and the Mexica often used masks covered with turquoise mosaics for the same funeral purpose. This means that the funeral use of greenstone masks was objectified by the Mixtecs and Mexica. The symbolism and function of the greenstone masks were not changed but the material was replaced by turquoise. In other words, the older and already established meaning was attached to the new mineral of turquoise in this exclusive context of ‘mask + funeral’ (an example of ‘communication of meaning’). This shift of material may have been motivated by the blue-green colour of the stones.

My analysis focuses two aspects: on the Mesoamerican use of turquoise vs. Mexica use of turquoise, and on the category of *xihuitl* (as turquoise) vs. category of *chalchihuitl* (as jade, greenstone) in the Mexica context. After examining the correlations of contexts and types of objects in a broad Mesoamerican context, turquoise objects found exclusively in the offerings of the Templo Mayor (Mexica context) are studied in relation to the outcome of the analysis of the Mesoamerican context. What aspects of turquoise were experienced and how these aspects were consumed or objectified by the Mexica can be clarified.

Likewise, the category of meanings and functions of turquoise (*xihuitl*) can be

contrasted with that of jade and other greenstones (*chalchihuitl*) by employing categorization theory. This analysis reflects the Mexica's intention of differentiating turquoise from other traditional greenstones. For example, in Mesoamerican traditions, greenstones symbolized both 'water' and 'sun', but especially in the offerings of the Templo Mayor the symbolism of turquoise as 'sun' was emphasized.

With respect to 'grass', although it is also an *index* of the concept of xihuitl, it is almost impossible to analyze its material aspect because grass is perishable, and there exist no archaeological remains of grass. Thus, I examine only the meanings and functions of 'grass' in the aspects manifested in linguistic usage and ritual expressions.

4.3.4 Ritual expressions (Chapter 8)

Other major definitions of xihuitl, namely 'grass', 'solar year' and 'fire', are well represented in the Mexica ritual called Toxiuhmolpilia or 'the Binding of Our Years'. First, historical background of the ceremony is examined to shed light on the roots of the ceremony and its context limited to the Postclassic Central Mexico. Likewise, Mexica mythology related to the ceremony is reviewed to interpret the relationship between the concepts of 'solar year' and 'fire'. Mexica myths tell us that the sun was born from the sacred fire, and that the movement of the sun marked the beginning of the present world (Sahagún: Bk 7, 7-8; Códice Chimalpopoca 1992: 122). In other words, fire was considered to be the original form of the sun and time.

Second, the way the Mexica modified the original ceremony is studied and the ritual of Toxiuhmolpilia is examined from the viewpoint of material culture, namely the Mexica objectification of the traditional ceremony and symbolism and functions of the Mexica ceremony (communication of meaning) are analyzed. Toxiuhmolpilia was institutionalized as the ritual reset of the calendars every fifty-two years (or one 'century') during the Epiclassic period in Central Mexico. However, later, in the time of the Mexica, this ritual was accorded special

religious and political importance and was held on a large scale involving surrounding subject towns. In the ritual, 'grass' representing the past fifty-two 'solar years' was tied in a bundle and buried in 'fire' (or the original form of the sun and time). The ritual scene depicted on a rock carving in the Epiclassic site of Xochicalco and the ritual described in the Mexica Codex Borbonicus are compared in order to observe the Mexica consumption of this tradition (Sáenz 1967: 10-5; Codex Borbonicus: pls. 34, 36).

4.3.5 Conclusion (Chapter 9)

In the Conclusion (Chapter 9), the outcome of my analysis are discussed in terms of how the Mexica experienced the past Mesoamerican traditions, and how the Mexica reproduced tradition through the category of xihuitl. The major concern in this chapter is the difference in the nature of each medium that affects the range of meanings expressed in each medium as well as the degree of 'reception' of the Mexica representations of xihuitl 'by others'.

For example, the aspects accentuated in the symbolism of turquoise objects are the solar-war cult and the concept of sacrifice, while those in the symbolism of Toxiuhmolpilia are the concepts of 'fire' and 'life/soul'. Although all of these aspects form part of the metaphoric category of xihuitl, the degree of consumption or understanding of these aspects by 'others' seem different depending on the media, namely material or ritual. It is because the concepts related to turquoise objects that were the provenance of the elites are supposed to have been difficult to consume for common people due to the lack of a chance to interact with such elite material. Whereas the ceremony of Toxiuhmolpilia was a large-scale ritual in which the people from the surrounding towns had to participate, and thus the level of experience of this ceremony was more direct than that of turquoise objects.

Although the difference in the nature of the media affects the way of the consumption of the metaphoric symbolism and functions related to xihuitl both by the Mexica elites and other people, it is natural to think that the representations of

xihuitl in each medium function in a complementary or an interrelated manner to embody the concept of xihuitl as a whole. It is also supposed that what develops such embodiment of the concept is the Mexica conceptual system, which is discussed in Chapter 9.

Chapter 5 Linguistic expression: Definitions and functions of **xihuitl**

In the classic Nahuatl dictionaries, *xihuitl* is defined either as '(solar) year, comet, turquoise and grass' (Molina 1992: 159v), or as '(solar) year, comet, turquoise, grass, and leaf' (Siméon 1992: 770-1). *Xihuitl* can be used either as a single word or in compounds by connecting its stem *xiuh*, *xihu* or *xi* with other words, such as, *camoxihuitl* or 'fruit-producing plant', *teoxihuitl* or 'fine turquoise', *xihuitl uetzi* or 'a comet falls', and *toxiuhmolpillia* or '(the feast of) Binding of the Years'¹. Thus, *xihuitl* represents its different meanings depending on contexts.

So far, little effort has been made to look into this metaphoric coherence found in *xihuitl*, and the confusion of translation has been left undiscussed. For example, *xiuhcoatl* is normally translated as 'fire serpent', but sometimes 'turquoise serpent' (Sahagún 1953-81, Bk 1, 67). Likewise, *Xiuhtecuhtli* is generally regarded 'the god of fire', but sometimes 'Turquoise Lord' (Sahagún 1953-81: 29), 'the god of year' (Leon Vollemaere 1988: 28; López-Luján 1994: 187), 'the god of grass' (Heyden 1972: 5).

As Lakoff & Johnson (1980: 125) explain, individual senses are defined in terms of correlation with the prototypes of the same categories. However, the definitions of *xihuitl* do not seem to contain a prototype, a fact which suggests that this category can be radial. In a radial category, correlations have to be sought in the relationships via extensions from central senses (Lakoff 1987: 108).

In this chapter linguistic definitions and extended senses of *xihuitl* are to be analyzed in alphabetical scripts or speech of classic Nahuatl. If it is a case of modern language, all the senses may be included as the definitions under a single entry in a dictionary, but in the case of *xihuitl*, all the classic Nahuatl dictionaries except the Karttunen's were compiled during sixteenth to nineteenth centuries, long before the modern linguistic achievements. Considering the fact that its definitions vary depending on the dictionaries, I have decided to divide the

¹ In this chapter, Nahuatl words, other than 'xihuitl' and proper nouns, are italicized. 'Xihuitl' and the radical of 'xihuitl' in compounds are underlined.

extended senses from the basic definitions in order to elucidate the central senses and the correlations among the meanings related to xihuitl. For this purpose, I define the extended senses as the meanings often found in written expressions but not included in the definitions stated in the Nahuatl dictionary by Karttunen (1992), which is the only classic Nahuatl dictionary based on modern linguistic analysis. I use the term 'extended senses' here by following Lakoff's theory of radial category (Lakoff 1987). According to Lakoff (1987: 108), extended senses are based on the central sense of the original definition, but at the same time extended senses may themselves serve as the basis for further extensions via category chaining. In addition, the direction of extension tends to go from concrete basic-level objects to other things (Lakoff 1987: 106). I should note that since the term 'sense' has to be used both for 'extended sense', which is an extended 'meaning' of the word, and 'central sense', which is an 'attribute' of a meaning that motivates extension, in order to avoid confusion, sometimes I employ the term 'attribute' instead of 'central sense'.

In this chapter, first, the basic definitions which are stated in the dictionaries are grouped based on the modern grammatical analysis given by Karttunen (1992) and individually examined. Second, the extended senses extracted from the native usages of the written expressions are analyzed. Finally, the correlations among all the meanings are studied by employing categorization theory. This semantic structure of xihuitl is discussed in a wider context, namely by considering its possible contrasting categories. Also the literal functions or the ways that xihuitl comes to represent a particular sense depending on contexts are studied.

5.1 Basic definitions

The word xihuitl can be grammatically categorized into three groups in accordance with its pronunciation and grammatical usage. According to Karttunen (1992: 324), the three categories are; xihuitl as grass, greenstone, turquoise; as year; and as comet. Karttunen mentions that Carochi (1983)

distinguished the pronunciation of *xihuitl* as comet from that of the other definitions of *xihuitl* because the first 'i' of *xihuitl* as comet is pronounced longer, thus, it is a different word. Following this analysis, in this section I do not include comet in the basic definitions, but in the extended senses comet appears in relation to the sense of fire, and so I include it in the next section. In addition, in iconographic expressions the symbol of comet sometimes shares the same colour symbolism and the morphological form as serpent, especially with the fire sense (cf. Chapter 6).

Regarding the grammatical usage, Karttunen (1992), following Carochi (1983), distinguishes *xihuitl* as grass, greenstone, turquoise and as year in forming the abstract derivation; the former forms *xiuhyotl*, and the latter, *xiuhcayotl*. Abstract nouns are formed by suffixing *-yo-*, *-o-*, to the stem, to which the absolutive suffix *-tl* is added, and these abstract nouns express a quality or attribute that is sometimes independent in meaning from that of the noun from which they derive (Sullivan 1988: 18). In this case, *xiuhyotl* means 'grassiness, or regarding the grass or plants' (Karttunen 1992: 327; Siméon 1992: 769). And *xiuhcayotl* means, 'something about the current year, or speaking of what has already happened' (Siméon 1992). For example, in compounds, *noxiuhcayo* means 'my matter of the current year', and also when prefixed with number, it means 'a matter of a certain number of years', such as, *cexiuhcayotl* or 'a matter for one year' (Karttunen 1992, Siméon 1992).

It has been studied in a field of modern languages that sometimes derivative words take different forms of part-of-speech from the originals in order to emphasize different aspects of the original basic meanings (cf. Pinker 2000: 152-3, 160-1). *Xihuitl*'s grammatical difference in forming abstract derivations can be explained by saying that within the word exist a few central senses that cause such difference.

The correlation among the basic definitions of *xihuitl* is assumed as follows: first, the sense of grass is proposed as the original meaning of *xihuitl*, for grass must be one of the basic-level words; second, the turquoise (and greenstone) sense may have derived from the colour of grass; and third, solar year is connected with grass through the cycle of vegetation and the materiality of being able to be tied as

a bundle.

5.1.1 Xihuitl as grass, greenstone, turquoise

In the following subsections, the semantic structure of each group of xihuitl as grass, greenstone, turquoise and as year are examined, and then the correlation between the two groups will be discussed in the summary section.

5.1.1.1 Grass

Xihuitl as grass is proposed as the basic-level word, because in both classic and actual Nahuatl expressions xihuitl is used to indicate ‘grass’, ‘herbs’ or ‘plants’ in general. For example, in Chapter 7 of Book 11 of the Florentine Codex (Sahagún 1953-81) some four hundred plants are listed and explained, and xihuitl or its stem *xiuh* often appears to indicate herb, leaf, and part of the name of the plants, for example, ‘*xihuitl*’ or ‘it is an herb’, *ixiuhyo* or ‘its leaves’, and some plant names such as *camoxihuitl*, *nanahuaxihuitl*, *chapolxihuitl*, *cototzauhqui xihuitl*, *totoncaxihuitl*, *cococ xihuitl*, and *uitzocuitlapixihuitl*². Likewise, in the modern Nahuatl, xihuitl is still translated as ‘plant’ and ‘herb’: *in ce xihuitl* or ‘it is a plant (herb)’ (Instituto Nacional Indigenista 1994)³.

As the sense of grass, xihuitl is used to specify if each entry is a plant (herb), in terms of not kinds of ‘flower or *xochitl*’ nor ‘tree or *cuahuitl*’. Therefore, xihuitl as grass is supposed to be one of the basic-level terms that ‘are the most inclusive level of classification at which objects have numbers of attributes in common’ (Rosch 1978: 32). Especially for the biological categories, such as trees and plants, the basic-level is thought to correspond to the folk generic (Rosch 1978). As the basic-level objects are assumed to be relatively constant in

² In describing Nahuatl pronunciation in European alphabetical spelling, Sahagún often mixed different kind of notations, so in order to unify the spellings, following Siméon’s regulations, I always change some of Sahagún’s (and other chroniclers’) spellings, such as, *xiuitl*→*xihuitl*, *ixiuhio* or *jxiuhio*→*ixiuhyo*.

³ I also changed a notation of Instituto Nacional Indigenista to follow the Siméon’s: *se*→*ce*.

categorization, grass is most likely to be the oldest and central definition of xihuitl.

5.1.1.2 Turquoise and greenstone

Xihuitl as ‘turquoise’ in Mesoamerica does not correspond to the turquoise mineral in modern sense based on the chemical analysis. Xihuitl included other greenstones that have similar texture or colour to chemical turquoise (cf. Chapter 7). In order to elucidate the sense of turquoise, its colour and its category as greenstone become important factors.

The sense of turquoise including other greenstones is supposed to have been added in association with the colour of grass, the basic definition of xihuitl. It is said that around the precious greenstones herbs always grow fresh and green because herbs are the breath of greenstone (Sahagún 1953-81: Bk 11, 222). As for turquoise, Sahagún (1953-81: Bk 11, 223) states:

The name of this turquoise comes from the herb (xihuitl) which lies sprouting; because its appearance is [not highly colored,] not very herb-green, just a little dull; as if it were not highly estimable. It is really a little dark-surfaced.

In the illustrations describing turquoise, it always appears with plants (Sahagún 1953-81: Bk 11, vignette nos. 766-9) (Figure 5.1). There are a few stones that include xihuitl in their names, such as, *teoxihuitl* or ‘fine turquoise’, *xiuhtomolli* or ‘flat and round turquoise’, *xiuhmatlalitzli* or ‘turquoise-blue-obsidian (sapphire)’. Interestingly, in spite of its colour, ruby is called *tlapalteoxihuitl* or ‘red fine turquoise’ because ‘it is the same as the fine turquoise’ in terms of its value and rareness (Sahagún: Bk 11, 224).

It should be noted that, although so-called turquoise-blue and the green colour of grass are perceived as different colours in English, in Mesoamerican languages blue and green are often categorized under the same word (Galarza 1990: 43). For instance, the classic Nahuatl word *xoxouhqui* or blue-green, was used to describe the diurnal sky as well as grass. It is obvious, however, when one observes the painted manuscripts, that the Mesoamerican people distinguished blue and green as a different pigment and would consciously apply green or blue

on paintings depending on the context (Galarza 1990: 47). Xihuitl itself is not a basic colour term and just indicates the colour of grass or turquoise, as ‘turquoise’ in English does (cf. Berlin & Kay 1999). For example, *xiuhtototl* means ‘lovely cotinga or the bird with green (grass or turquoise-coloured) feathers’, and *xiuhzayolin*, ‘green (grass or turquoise-coloured) fly’ (Siméon 1992: 770; Karttunen 1992: 327). Therefore, the concept of blue-green can be both an attribute to cause semantic extension and an extended sense as colour, although blue-green is not included in the definitions.

Regarding the category of greenstone in general, the word *chalchihuitl* was normally employed, such as, *inin chalchihuitl ihiyo* or ‘(herbs are) the breath of the greenstone’, in the same citation from Sahagún mentioned above (1953-81: Bk 11, 222). *Chalchihuitl* can signify jade and also other wide range of greenstones depending on contexts. In explaining *chalchihuitl*, Sahagún (Bk 11, 223) says, ‘its name comes from nowhere’, the expression which implies that *chalchihuitl* was a basic-level and already institutionalized word to indicate jade and greenstone. Therefore, xihuitl as turquoise could be also included in the category of *chalchihuitl*. For example, in describing *xiuhtomolli* (or *xiuhtomoltetl* or fine turquoise), it is stated at the beginning, ‘*chalchihuitl*’, to mean ‘it is a (kind of) greenstone’ (Sahagún: Bk 11, 188).

Greenstones in general were regarded as precious stone belonging to the elites. The value of *chalchihuitl* is described as follows:

It is precious, good looking, noble. It is really the property of the noblemen. During past times, when someone wore it, even though in any manner, if his necklace or his bracelet were of greenstone, this showed that he was a noble-man, a beloved prince; wherefore he was rendered honor, beloved by all (Sahagún 1953-81: Bk 11, 223).

In comparison with this, *teoxihuitl* or fine turquoise seems to have been more important and divine, as described in the following way:

The name of this comes from *teotl* [god] and *xihuitl* [turquoise], which merely means that it is the property, the lot, of the god; and it means that it is much esteemed, because it does not appear anywhere very often. It seldom appears anywhere. This fine turquoise is much esteemed (Sahagún 1953-81: Bk 11, 224).

It is logical to think that jade represented the category of greenstones including turquoise and that sometimes formed a superordinate category to *xihuitl*, because jade had been treasured since Olmec times, long before turquoise was brought into Mesoamerica (cf. Chapter 7). On the other hand, *xihuitl* never indicates a category of greenstone in general as *chalchihuitl* does, and is only used alone to mean turquoise or in compounds to describe ‘something similar to turquoise’ or ‘something that shares the attributes of turquoise, such as preciousness and blue-green colour’.

5.1.2 *Xihuitl* as year

The year sense of *xihuitl* is supposed to have derived from both the cycle of vegetational life and the materiality of grass. Regarding ‘year’, the 365-day solar year should be emphasized, because the Nahuatl employed two different countings, which were the solar called *xiuhpohualli* and the ritual called *tonalpohualli* (cf. Chapter 2). Needless to say, *xiuhpohualli* is based on the annual cycle of the sun.

As this solar cycle brings the cycle of vegetational life, the senses of grass and year were explained to be closely connected (cf. Limón Olvera 2001a: pp. 87-8). At least three colonial chroniclers mentioned this semantic relationship. Muñoz Camargo (1984: 216) informs us that the year took its name from ‘grass’ because all the plants annually produce and become covered with leaves. Tezozómoc (1980: 123) expresses the same idea: ‘the year ordinary started in March when the plants re-sprout with new leaves; for this reason the year was called *xihuitl*, which is the name of green leaves’ (my translation). Serna (1953: 134) also associates the re-greening of the plants and the annual cycle by saying that the year is called *xihuitl*, which is of grass, and thus the whole year was counted from the beginning of the revival of the plants. Thus, the cycle of natural life overlapped with the movement of the sun. This idea reflects the Nahuatl belief, in which the sun was regarded the giver of life, as the Codex Telleriano Remensis (1995: 28) recorded, ‘all the things are produced by the sun’

(my translation) (cf. Limón Olvera 2001b: 409).

In Nahuatl thought, an attribute of grass represented the material aspect of time. The idea of the year as a grass bundle is explained by Durán (1971: 412-3):

We must understand that xihuitl means two things, 'year' or 'bouquet'. The word signifies both things. If one understands it to mean 'year', [*Xiutzitzquilo*] signifies Taking the Year in One's Hand, and if one understands 'bouquet', it means Taking the Bouquet in One's Hand. [...] Considering that the natives thought of the year as a series of many months and days, composed, like a bouquet, of many branches and leaves, it would be a proper metaphor to speak of Taking the Year in One's Hand.

Durán was a Spanish Friar who grew up among the native Nahuatl speakers, and thus he could correctly explain the nuance of xihuitl using a visual metaphor of 'a bouquet' as 'a bundle of years'. This metaphor is often embodied as a stone sculpture of 'the bundle of years' representing a bundle of fifty-two years, which was a great cycle or a 'century' in the Mesoamerican cultures (Figure 5.2). As Aveni (1989: 266) describes, Mexica time 'was a sequence of bundles that needed to be joined together in order to make a circle'.

Xihuitl as year is used to indicate both a particular year in combination with number and calendar sign and duration of time. For example, *Il acatl xihuitl; ipan toxiuh molpilli* or 'in the year 2 Reed, our years were tied', or *chicuexiuhitica* or 'every eight years' (Siméon 1992: 770-1; Jiménez Moreno 1974: 14).

The solar year sense also can be a basic-level as a unit of time, because *xiuhpohualli* or solar year is a basic temporal unit in the Mexica culture together with *tonalli* (or *ilhuitl*) or day, *tonalpohualli* or the 260-day ritual calendar and *xiuhmolpilli* or the 52-year calendar round (cf. Aveni 1989: 254). Therefore, the year may have been another basic and old definition of xihuitl. It is also possible to think, however, that, considering its direct extension from the attributes of grass, it could be a major extended sense of xihuitl as grass.

5.1.3 Summary

It can be concluded that the basic and oldest sense of *xihuitl* is/was grass, and that all the central senses were derived from the attributes of grass, such as the blue-green colour, the natural life cycle, and the materiality. In addition, grass and year can be defined as the basic-level words based on evaluation of the meaning in association with other words in the same category, i.e., in the category of vegetable world and in the category of the units of time. Although the grammatical formations of abstract nouns differentiated *xihuitl* as grass and turquoise and as year, it is natural to view both senses as extended from different attributes of grass.

There is another aspect of the semantic connection between the grass-turquoise sense and the solar year sense. In Mexica culture the solar year represented the movement of the sun that follows its path in the diurnal blue sky (cf. Limón Olvera 2001a: 88). The stem *xiuh* is used in compounds to convey the sense of greenness (and blueness) and to serve as a modifier for heat, indicating intensity, as white and blue do in English (Karttunen 1992: 324). The sense of blue-green comes from the colour of grass/turquoise as well as from that of the sky, and also it is highly possible that the sense of heat derives from the ‘solar year (= the movement of the sun)’ sense, because the sun produces heat. This idea is reflected in the Nahuatl expressions of describing the sun, such as, *xiuhpiltontli* or ‘the boy of year/turquoise’ and *xippili* or ‘turquoise prince’ (Siméon 1992: 769; Sahagún 1953-81: Bk 7, 1; Historia de México 1985: 121). Thus, all the senses of grass, turquoise and year share in common the attribute of heat. In other words, the attribute of heat can be another central sense of *xihuitl*.

5.2 Extended senses

In this section, the mechanism of extension of each extended sense is tracked from the basic definitions and central senses of *xihuitl*. Based on the careful examination of the Nahuatl original texts and their translation or notes from the

colonial accounts, it can be concluded that the extended senses of *xihuitl* are; ‘fire’, ‘red’, ‘preciousness’ and ‘soul or life’. Although the sense of ‘comet’ may have been pronounced in a different way, it is included here because its association with the sense of fire becomes prominent. In the following subsections, on the basis of the relation to the basic definitions, I divide, for the sake of convenience, the extended senses in two groups, namely, the group of fire, comet and red, related to the sense of year, and the other of preciousness, and soul or life, related to the sense of turquoise.

5.2.1 ‘Fire’, ‘comet’ and ‘red’

The origin of the relation of the fire sense with the original definitions can be traced back to the year, for the sun was regarded as the celestial fire by the Mexica (cf. Limón Olvera 2001a: 89). In Nahuatl the sun is called *quauhtlehuamitl* (‘eagle with the fiery arrows’), the word which represents the image of the sun as a celestial fire flying across the sky like an eagle (Sahagún: Bk 7, 1; Siméon 1992: 415). Likewise in the myths, fire often catalyzes the creation of the present sun (Sahagún: Bk 7, 1-7; Códice Chimalpopoca: 121-2; Historia de los mexicanos por sus pinturas: 35; Historia de México: 109). Then both attributes, the sun and the celestial fire, and the sense of fire become associated with the sense of comet. The fire sense also links with the sense of red via its colour.

Regarding the connection among the blue-green colour, solar movement (=year), and fire, Xiuhtecuhtli and Xiuhcoatl can be the good examples. Xiuhtecuhtli (*xihuitl* + *tecuhtli* or lord) can be translated as ‘the turquoise lord’ or ‘the god of year’ but often indicates ‘the god of fire’ in the Nahua religion. For the description of Xiuhtecuhtli, Sahagún (1953-81: Bk 1, 29) states:

Xiuhtecuhtli (Turquoise Lord), Ixcozauhqui (Yellow-faced One), and Cuezaltzin (Flaming one). This one was known as the fire or Ueue teotl (the Old God) and Tota (Our Father).

Xiuhtecuhtli was also called Teteo Innan Teteo Inta or ‘mother and father of the Gods’, and by this appellation he was often identified with the primordial dual

god Ometeotl who resides in the navel of the earth (Sahagún 1953-81: Bk 6: 88-9). Limón Olvera (2001b: 409) explains the characteristics of the god of fire as follows:

As the god of *axis mundi*, he could inhabit all three parts of the cosmos: sky (Ilhuicatl), earth (Tlalticpac), and underworld (Mictlan). From each of these cosmic locales, the fire god sent his sacred force cyclically to stimulate the regeneration of nature. In the sky, Ixcozauhqui was identified with the sun because both provided *tona*, the vital energy necessary to all life, especially to ripen plants. On earth, the fire god dwelt primarily in the central part (*tlalxicco*, 'navel') and at the four 'corners'. In the domestic sphere Chantico, the goddess of fire, was located at the hearth. The fire god Chicnauhyotecuhtli dwelt in Mictlan, the place of the dead, from which he sent the fire of regeneration to stimulate the growth of plants.

It is important to point out here that in the Nahuatl written expressions Xiuhtecuhtli was sometimes identified with the sun (Heyden 1972: 8; León Portilla 1990: 95-96). His aspect as the sun is supposed to reflect xihuitl's sense of year.

Likewise, Xiuhcoatl (*xihuitl* + *coatl* or snake) is translated as 'the Fire Serpent', whose tail is depicted in the form of solar ray and/or of grass in its visual representations. Xiuhcoatl was associated with three supreme deities, i.e., Xiuhtecuhtli, Tezcatlipoca and Huitzilopochtli. When Xiuhcoatl appears with Xiuhtecuhtli, it has a tail in the form of solar ray or solar ray with grass, and with Tezcatlipoca it carries a tail in the form of grass, and with Huitzilopochtli it takes form of a fire drill (cf. Codex Borbonicus p. 9, 20, 22, 34) (cf. Chapter 6). According to Beyer (1965a: 230-1), Xiuhtecuhtli personifies the blue diurnal sky and the sun as the celestial fire, and similarly, Xiuhcoatl represents the blue dome, in which the sun goes round (cf. Krickeberg 1993: 115; Miller & Taube 1993: 87-8). Also the sun itself was sometimes described as *xihuchimalli* or 'a round shield of turquoise' and also called Xiuhpiltontli or the boy of year/turquoise, and *xippili* or the turquoise lord, as mentioned above (Sahagún 1953-81: Bk 1, 81). In this way, the blueness representing the colour of the diurnal sky and of the intense heat of fire, together with the concept of fire was integrated in those supernatural figures.

In relation to this concept of celestial fire, the comet sense becomes manifest

(cf. Limón Olvera 2001a: 89). Comet was regarded as another celestial fire emerging from Xiuhcoatl created by Xiuhtecuhtli in Nahua mythology (*Historia de los mexicanos por sus pinturas* 1985: 69). In the written expressions, *xihuitl* as comet and fire was metaphorically used in the names of sickness and symptom which relate to inflammation and fever. For example, the inflammation caused by animal or insect bite was called *xihuitl tlachinoltotonqui*, which means ‘the burning comet’, because as the comet conserves heat within itself, so the inflammation contains fever (Serna 1953: 292; Heyden 1986: 36). Likewise, one of the illnesses that cause fever was called *notaxihuitl* or ‘My father, the comet/fire’ (Serna 1953). Also Heyden (1986) argues that the green colour was a metaphor for pain referring to ‘heat’ of fever and intensity of illness. Thus, this example of comet as a metaphor of heat shows the close relationship between *xihuitl* as comet and *xihuitl* as grass, turquoise and year, in spite of the difference of pronunciation pointed out by the colonial linguists.

The red colour seems associated with the colour of fire and the sun. The association of red with *xihuitl* is more obvious in the visual representations than the written expressions, but there are a few written descriptions about the redness of *xihuitl*. For instance, *xiuhtoctlaulli* (*xihuitl* + *toctli* or tender maize + *tlauilli* or maize grain) means ‘red maize’ (Siméon 1992: 770). Another example is the plant called *xiuhtecuzacatl* (Xiuhtecuhtli + *zacatl* or straw), which is described as ‘it is ruddy; hence is it called *xiuhtecuzacatl*’ (Sahagún 1953-81: Bk 11, 194). In this case red may represent the colour of flame, which is related to Xiuhtecuhtli. Limón Olvera (2001a: 91-2) explains the relationship between red and flame from the association of the bird called *cuezalin* whose name takes part of the word Cuezaltzin, another appellation of Xiuhtecuhtli. Cuezalin has red feathers called *cuezaltonameyutl* or ‘the solar ray’, and so Cuezaltzin can also mean ‘red feather’ (Limón Olvera 2001a, 2001b). Thus, red was regarded one of the colours of the sun and fire, as well as yellow, the colour which is incorporated in the word *Ixcozauhqui*, another appellation of Xiuhtecuhtli, and blue, the colour of intense heat.

Thus, the symbolism of the sun deriving from the sense of year plays an important role as the motivation for the further extensions of the senses of fire,

comet and red. Regarding the sense of comet, despite of a difference in pronunciation, *xihuitl* as comet shows the close relation to the sense of year. This close relation probably indicates that the category of comet can become part of the category of *xihuitl* as year and can also be a contrasting category to *xihuitl* as grass, turquoise and year, depending on contexts. As for the sense of red, it seems one of the furthest sense from the basic definitions, and thus its employment in the written expressions does not appear as often as other senses. This can be explained by Lakoff's (1987: 109) argument that some extended senses far from the central case may not yet have stabilized as the conventionalized use, although their chainings are logically based on the principles of extensions for the speakers.

5.2.2 'Preciousness' and 'soul or life'

Both of the senses of preciousness and soul or life are supposed to have derived from the attributes of what we call turquoise, one of the most treasured gemstones in the Mexica society. Likewise, the sense of vegetational cycle, which links the senses of grass and year, may affect the extension of the sense of life. Regarding the senses related to turquoise, Galarza (1990: 46) explains the possible translations on three levels: first, its primary material, which is turquoise; second, its colour, which is blue-green; and third, its symbolism as preciousness. For example, the possible translation of *xiuhacatl* (*xihuitl* + *acatl* or reed) can be 'reed of turquoise', 'blue reed', and 'precious reed' or the combination of all, depending on the context. This explanation matches Lakoff's (1987) definition of extension from basic-level to abstract concept.

Turquoise also connotes the sense of heat via its blue colour related to fire. The other extended sense, 'soul or life', frequently appears taking this heat sense of turquoise in the storytelling and ritualized speeches (cf. Sahagún 1953-81: Bk 6). According to Furst (1995: 182-3), the Mexica believed that the body was a collection of multiple rather than unitary souls. At death, its three animating forces split apart, each going its own direction—the *tonalli* descending to the

underworld, the *yolia* ascending to the heavens or staying with the physical remains in the grave, and the *ihiyotl* dissipating into the air (cf. López Austin 1988: 203-36; Furst 1995; D. Carrasco 1998: 53-5)⁴. The sense of soul is expressed in the word *teoxihuitl* (*teotl* or god + *xihuitl*) or ‘fine/divine turquoise’. Sahagún (1953-81: Bk 11, 224) states that *teoxihuitl* is called so because it is ‘*itonal in teotl*’ or ‘the soul of the god’. It is assumed that the notion of ‘soul’ connoted the warmth of life derived from the ‘fire or heat’; similarly, *tonalli* also means ‘day, warmth of the sun, summer’ (Karttunen 1992: 246; Furst 1995: 65; D. Carrasco 1998: 54). This idea of turquoise-warmth-soul reminds us of the Mexica funeral custom, in which *chalchihuitl* or a greenstone, representing the heart in the next life, was placed in the mouth of the dead (Sahagún 1953-81: Bk 3, 45).

Turquoise as a metaphor of ‘energy and purity of life’ can be found in numerous phrases in Book 6 of the Florentine Codex, the volume which deals with the prayers to the deities and discourse of the rulers. This metaphor is used for: 1) the water which the rain deity brings when the weather is dry; 2) new life, such as babies and small children; 3) pure or discretionary life; and 4) power and discourse of the rulers. For example, in the prayer to Tlaloc begging for rain at the end of the dry season, the priests prayed as follows (Sahagún: Bk 6, 36):

And the nourishment: there is no more of it; it is gone, it hath disappeared. ...That which fresheneth, that which is tender, that which sprouteth, that which blossometh; the plants—those which come from thee; thy flesh, they freshness, thy tenderness, [like] the precious greenstone, the bracelet, the precious turquoise, the precious thing; only the precious thing, the nourishment whereby the world remaineth alive, especially liveth, talketh, rejoiceth, laugheth.

In this prayer the juxtaposition of greenstone, bracelet and fine turquoise (*in chalchihuitl, in maquiztli, in teoxihuitl*) emphasizes the preciousness of water to bring forth the new life. This literary device of verbal couplets called parallelism functions both to drive home a message’s importance and to expand it in subtle

⁴ Regarding the composition of souls, I rely on the information originally studied by López Austin (1988) and later developed by Furst (1995) and D. Carrasco (1998). According to López Austin (1988: 18-23), the sources of the information are Sahagún’s and Molina’s writings and also complementary ethnographic reports.

ways (Read 1998: 179).

The similar parallelism of turquoise and other precious things to represent 'energy and life' can be observed in other rhetoric. When the midwife bathed a newly born baby, she called the baby 'precious necklace, precious feather, precious greenstone, precious bracelet, precious turquoise' (Sahagún 1953-81: Bk 6, 176). In the cult of Tlaloc, the rain deity, babies and young children were sacrificed in the water or in the caves, where the deity was believed to reside (Torquemada 1976-83: Vol.3, 180-2). Tlaloc was thought to require younger children, as they were like 'precious bracelets, like precious greenstones'. The dead children offered to the rain deities were believed to go to the paradise of Tlaloc and become 'as precious greenstones, as precious turquoises, as precious bracelets' (Sahagún 1953-81: Bk 6, 115). 'Living in purity' or leading a discretionary life was considered as 'a well-smoked, precious turquoise; as a round, reed-like, well formed, precious greenstone' (Sahagún 1953-81: Bk 6, 113, 217). Likewise, the metaphor of turquoise was also employed as a modifier of divine power. The new ruler was thought to serve as substitute of the deity and called 'the precious turquoise' (Sahagún 1953-81: Bk 6, 17). The discourse of the rulers was also considered to be 'precious turquoise', which means, 'perfectly formed speech' (Sahagún 1953-81: Bk 6, 191-2). In this kind of parallelism it seems that xihuitl plays a role of emphasizing the value of vital energy with other juxtaposed valuable things. This implies that xihuitl in parallelism indicates preciousness of the modified subject rather than a specific concept.

It is also logical to think that the sense of life derives from the concept of vegetational cycle of the sense of grass. Although there is no written example that shows the direct connection between the natural cycle and life, the relationship between the solar movement (=vegetational cycle) and the heat of the sun and fire can imply the energy of life (cf. Limón Olvera 2001a: 87).

In this way, the two attributes of the sense of turquoise, namely its value and colour, become important factors for the extensions. First, the value of turquoise directly links with the sense of preciousness via its value. Second, the blue-green colour connected to the fire sense implies the warmth of the soul and life. Likewise, the natural cycle, an attribute of grass, may also act as a

motivation for the extension of the sense of soul or life. However, the use of *xihuitl* as life or soul does not seem a stabilized sense, similar to the case of the sense of red, because *xihuitl* often needs to be juxtaposed with other similar valuable objects rather than directly indicating the sense of life or soul. In this case, *xihuitl* is equally paralleled with *chalchihuitl*, which sometimes forms a superordinate category to *xihuitl*.

5.3 Semantic structure and functions of *xihuitl*

In conclusion, the semantic structure of *xihuitl* as a whole is discussed based on the detailed analysis given above. Then the different levels of the literal functions of *xihuitl* are reviewed in relation to the contexts in which they are employed.

5.3.1 Semantic structure

The semantic structure of all the senses (definitions) and their attributes discussed above can be described in one schematic chart (Chart 1). It is obvious that the members (senses) of the *xihuitl* category do not share a relevant common property, a fact which indicates *xihuitl* has a radial category (cf. Lakoff 1987). Although the relationship appears more complex than radial, it seems that the central or representative image is 'grass'. What makes the structure complicated is the role of extended senses as motivations for further extensions via category chaining (cf. Lakoff 1987). Such category chaining suggests each of the senses forms its own category motivated by its attributes.

The basic sense 'grass' contains three attributes. Grass and turquoise are related via a colour image schema. Between grass and year, an interactional property as a material to be bundled and an image schema of cyclicity function. The senses of turquoise and year perform differently in forming grammatical derivations, but they are semantically related via the concept of heat: in the case of

turquoise the colour image schema leads to fire, and in the case of year, the sun, or the metonym of the solar movement, links to fire.

In the extended senses, each sense of turquoise and year seems to form its own extended category (cf. Lakoff 1987). That is, the category of year includes the sense of comet via the concept of celestial fire that is a conventional image of the sun, and the sense of red via the colour image schema that comes both from the sun and fire. The category of turquoise contains the sense of preciousness via the value or a conventional image of turquoise as a gemstone, and the sense of soul or life via the value of a conventional image of preciousness, via the warmth or an image schema of fire, and via the natural cycle or an image schema of the grass.

Moreover, as displayed in Charts 2 to 4, *xihuitl* flexibly forms different type of categories depending on contexts. First, *xihuitl* can be categorized in three groups, i.e., as grass and turquoise, as year, and as comet, in accordance with its grammatical usage and its pronunciation. Second, based on the semantic relationship, all the senses can be interrelated (Chart 2). Third, regarding the relationships between the categories of *xihuitl* as turquoise and *chalchihuitl*, *chalchihuitl* as greenstone in general can become superordinate to *xihuitl* as turquoise in terms of the category of stone, but in the parallelism *chalchihuitl* and *xihuitl* as preciousness can be contrasting categories (Chart 3). This context-dependent flexibility might be caused by the nature of classic Nahuatl as a verbal language without a script writing system. The classic Nahuatl expressions that were written in alphabets during colonial times are supposed to have been a record of speech. Therefore, the grammatical or pronunciation difference could be easily manipulated in an ambiguous way by the speakers.

5.3.2 Functional levels

The verbalism of Nahuatl language also affects the manners of employing the word to signify particular meaning. As analyzed in the previous sections, *xihuitl* often represents several senses at the same time in one context. Regarding the

levels of clarity of the senses, it is assumed that there are four functional levels in the use of *xihuitl*: 1) clearly representing one sense, 2) employing more than one sense in a mixed manner, 3) employing more than one sense depending on contexts, and 4) expressed by parallelism.

In the first level in which the sense is clearly defined, *xihuitl* is often used in the names indicating specific stones, plants, animals, rituals and other general terms (mainly nouns); for example, *xiuhtomolli* or ‘flat and round turquoise’, *camoxihuitl* or ‘fruit-producing plant’, *xihuitzilli* or ‘costa hummingbird’, *toxiuhmolpillia* or ‘the Binding of the Years’, and *xiuhtlapohualli* or the solar year calendar. In the second level, the senses are intentionally mixed to represent a holistic aspect of *xihuitl*, such as *Xiuhtecuhtli* or ‘the turquoise lord, the god of year, and the god of fire’. In the third level, the translation depends on the context as in the example given by Galarza (1990: 46); *xiuhacatl* can signify either ‘turquoise reed’, ‘blue reed’, ‘precious reed’ or the combination of all the senses. In the fourth level, the association with other juxtaposed words determines the sense of *xihuitl*, as in *chalchihuitl*, *in maquiztli*, *in teoxihuitl*. The ambiguity of the sense increases at most in the fourth level.

In determining which sense is being used, it may be necessary to consider the context in which the speech is performed. As Johansson (1993: 34-6) explains, the oral expression should be studied in conjunction with gesture or dance, music together with the phonetic value of Nahuatl. Especially in the case of parallelism, *xihuitl* often appears in the prayers to the gods and in the rulers’ formal speech, and in such occasions it is highly possible that the gesture and music were performed during the speech to convey the message efficiently. Likewise, for the Nahuatl speakers, the phonetic effects were often more important and more effective than the semantic value, via the paronomasia (Johansson 1993: 35). Paronomasia is a relation of phonetic similarities among the words (Johansson 1994: 314). It is highly possible that the senses of *xihuitl* as grass, turquoise and year overlaps with *xihuitl* as comet in a paronomastic way, even though it is difficult to observe such relation in Nahuatl texts recorded in alphabet. It might have been possible that the Nahuatl speakers intentionally enjoyed and exploited the ambiguity of pronunciation and grammatical differences existing among the

senses of xihuitl in order to convey the holistic idea.

Chart 1 Semantic structure of xihuitl

The words in square are the senses, and those in <> are attributes that promote extensions. Arrows indicate the directions of extension. Bold lines show the relationship among the basic definitions, including 'comet'. Blue-green can be both an attribute and a sense.

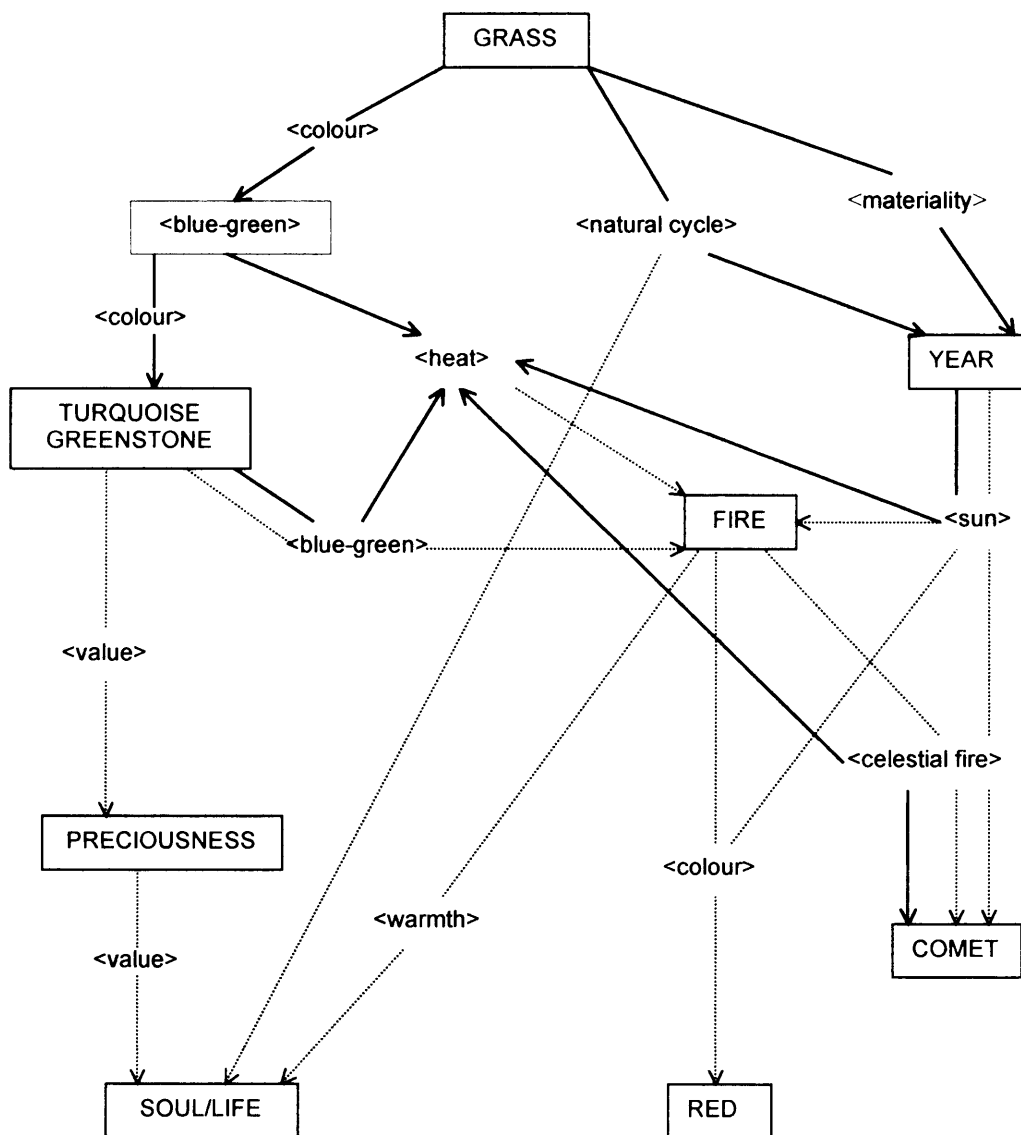


Chart 2 Categories of xihuitl based on grammatical and pronunciational differences

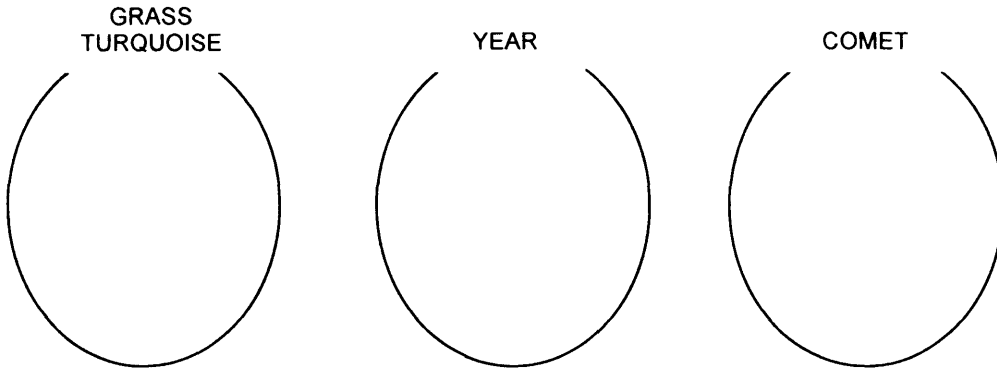


Chart 3 Relationship of the semantic categories of xihuitl

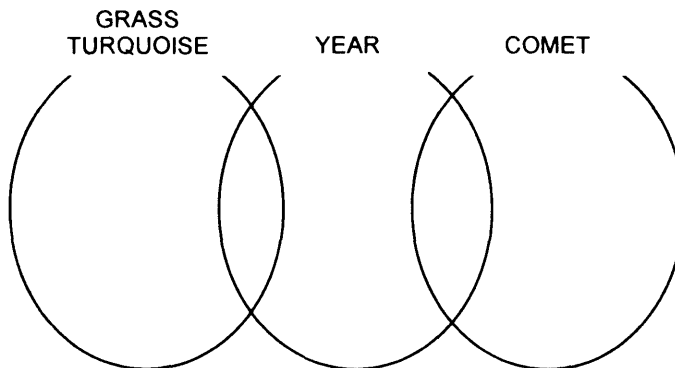
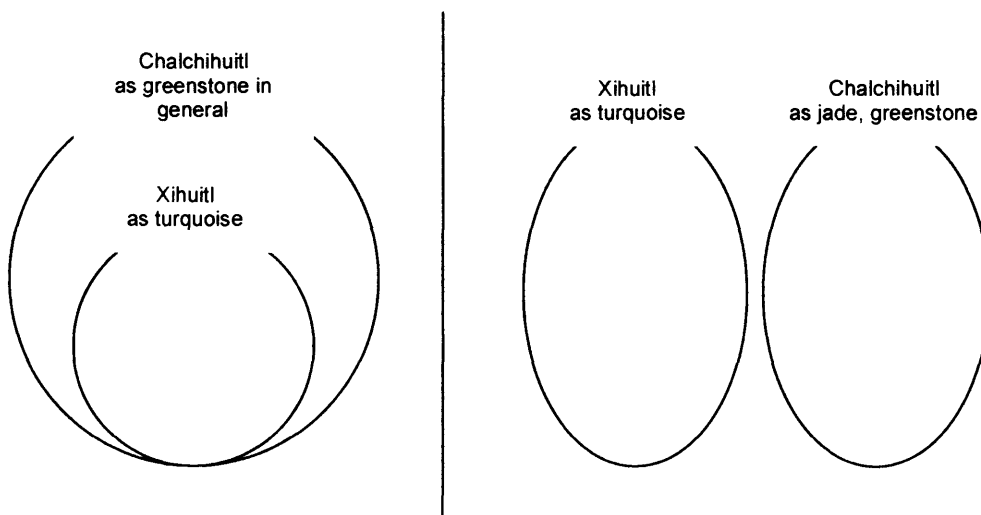


Chart 4 Xihuitl vs. Chalchihuitl



Chapter 6 Iconographic expressions: Iconographic representations and colour symbolism

The iconographic representations of xihuitl seem to compose different correlations from the category of linguistic definitions. The iconographic representations related to xihuitl can be grouped into four graphic symbols in this study: the trapeze-and-ray sign, the Aztec (square and turquoise) year signs, the quincross symbol, and the phonetic glyph 'xihuitl' (Figure 6.1). The first three symbols were inherited by the Mexica as part of Mesoamerican iconographic traditions, although the morphology, symbolism and functions attached by the Mexica were not exactly the same as in the precedent cultures. The phonetic glyph is assumed to have been a Mexica invention, because any symbols similar to this cannot be observed in the earlier cultures.

The association of each symbol with the concept of xihuitl can be explained in the following way. In the Postclassic Mixteca-Puebla art style a trapeze-and-ray sign, combined with calendric signs, was used as a year marker. Although in the Aztec art style, which is a substyle of the Mixteca-Puebla, the square year sign was employed as a year marker, the trapeze-and-ray sign may have a symbolic and phonetic association to xihuitl, because this sign forms part of Xiuhcoatl's (the fire serpent) body and tail. The basic graphic elements of the square year sign seem to have been taken from the calendric expressions of Epiclassic Xochicalco, which were also a variation of the trapeze-and-ray sign. As for the quincross symbol, which was also one of the traditional graphic symbols in Mesoamerica, it has been identified as turquoise, preciousness, fire, and water by several art historians through the analysis of the associations with other motifs in Classic Teotihuacan and Maya iconography (Thompson 1962: 66; Caso 1967: 145; Pasztory 1983: 85; von Winning 1987: Vol. II, 11; Taube 2000: 312-4). Although these associations do not constitute proof, but I include the quincross here because this symbol via its morphology may represent the temporal (solar) movement associated with the concept of year, which is one of the aspects of xihuitl. It is also possible to connect the quincross symbol morphologically to the phonetic glyph 'xihuitl', which was invented later in

Mexica times. Thus, the glyph's relationship with the word *xihuitl* comes firstly from its phonetic representation but also from its morphology and colour symbolism.

The four symbols, like the linguistic definitions, form an iconographic category of *xihuitl*. Each symbol has a few variations, like the extended senses of linguistic definitions. In the following sections, the iconographic characteristics, contexts, symbolism, and functions of each symbol are examined. As with the linguistic category, the correlations and central senses of the iconographic representations are also discussed. It should be noted that for my analysis of the Aztec style iconography, the painted manuscripts and other graphic sources (stone sculptures and relief) taken up here are limited to those assigned to the Mexica-Tenochtitlan or the surrounding areas during Mexica times or just after the Conquest in order to eliminate possible linguistic influences from other languages besides Nahuatl and not to stray from the Mexica elite view. The codices referred to as Aztec in style are the Borbonicus, Telleriano-Remensis, Vaticanus A, Mendoza, Matrícula de Tributos, Florentine Codex, Primeros Memoriales, and Magliabechiano. However, other styles of iconography, such as the Borgia group codices, are consulted for comparative purposes¹.

6.1 Trapeze-and-ray sign

The trapeze-and-ray sign consists of a pointed device identical to the Aztec solar ray sign and a squat form resembling a flattened 'O' (Miller & Taube 1993: 112). Its most consistent and conspicuous usage is as a year marker in pictorial manuscripts of the Mixteca-Puebla style, in which the sign takes the distinctive form of an inverted V interlaced with an oval ring, often referred to the A-O year sign (Langley 1986: 148) (Figures 6.2a, b). A different form, with an interlaced

¹ According to Nicholson (2001a: 99), the stylistic and iconographic similarities of Postclassic polychrome murals at the sites of Ocotelulco, Tlaxcala, and Tehuacán Viejo, Puebla, have provided support for a Puebla-Tlaxcala origin for the codices Borgia and Cospi; and a Gulf coast provenience for the Fejérváry-Mayer and Laud is widely accepted; but that of the Vaticanus B is still undecided.

trapeze-and-triangle and a ring element that rests on the year sign in square, appears in calendrical inscriptions on stone monuments from the Early Postclassic Central Mexican sites such as Tenango and Xochicalco (Langley 1986; Caso 1967: 162) (Figure 6.2c). The trapeze-and-ray sign can be also observed in other cultures of the Classic and Postclassic periods, and in fact is extremely varied in form and usage. In the following paragraphs, the iconographic origin and tradition of this sign are reviewed.

The earliest example of the trapeze-and-ray sign is said to be from the Preclassic Monte Alban I culture and to have been derived from the headdress of the Zapotec Rain God Cocijó (Caso 1967: 178; Langley 1986: 151). However, its iconographic tradition has been discussed by several art historians mainly through studies of Teotihuacan mural paintings and other Teotihuacan iconography (Caso 1966b, Pasztory 1974, Langley 1986, von Winning 1987, López Austin, et al. 1991). In Teotihuacan iconography, the use of the trapeze-and-ray sign as a year sign appearing with calendric numerals is limited to only three examples that are painted on the stuccoed shells and pottery vessels (Pasztory 1976: 124; von Winning 1987: Vol. II, 27) (Figure 3b). The most obvious relationship of this sign is with the large headdresses worn by important personages in Teotihuacan, among whom the strong association can be found with the water god (Pasztory 1976: 121) (Figure 6.3a). This sign was also commonly used during the Middle and Late Classic periods in the Maya area, usually without calendrical associations, as a costume accessory especially in headdresses, or as an abstract symbol, and the combination of the trapeze-and-ray sign with the Central Mexican water god can be observed also in the Maya sites, such as Copan (stela 6) and Yaxchilan (lintel 25) (Pasztory 1976: 122; Langley 1986: 148). Its use as a headdress decoration is also common in the Early Postclassic period at sites, such as Xochicalco, Xico, Cacaxtla and Tula (Langley 1986: 148).

The trapeze-and-ray sign in Teotihuacan is also studied in relation to other graphic elements that often appear with it. For example, the elements in the centre of the trapeze-and-ray sign in the Teotihuacan murals are usually limited to a feathered eye, a green (jade) medallion, a flower, the eye-of-the reptile glyph, the trilobed drop, or the four-way-hatching symbol (Pasztory 1976: 122). All of

these central elements are supposed to have had a general fertility and water association (Pasztory 1976: 123). On the other hand, the association of the sign with fire can also be observed. The analysis of the compound elements of the so-called 'Batres sculptures', which display flames coming out from the compound of trapeze with rectangular stick, implies that the trapeze-and-ray sign may have been related to the idea of fire drill (Langley 1986: 153) (Figure 6.4a). Likewise, the trapeze-and-ray can be seen as a tied knot of bundle of firewood or grass, which possibly suggests the bundle of years (Langley 1986: Taube 2000: 274-80) (Figure 6.4b). Thus, the trapeze-and-ray sign in Teotihuacan was used as a general symbol associated with water-fertility, fire and possibly the binding of the years depending on contexts.

In the Postclassic period, however, the trapeze-and-ray sign's functions as a year marker and as a decorative element of headdress became prominent especially in the Central Valley. In Late Postclassic Mexica iconography, its usage as a year marker seems to have been replaced by the square year sign, as seen later in this chapter, and the application of the trapeze-and-ray sign became limited to use either as a symbol of Xiuhtlācāli (the fire serpent) or as a decoration of the headdresses of water-fertility deities. Basically the Xiuhtlācāli tail takes the form of the trapeze-and-triangle (not interlaced), while the headdress decoration is in the form of the interlaced trapeze-and-ray (cf. Figures 6.1a, 6.5). The symbolism and function of the latter is thought to have been incorporated by the Mexica especially from the Huastec symbol attached to water-fertility deities, and its usage is only observed in ritual scenes of the sowing festival, depicted in the pages 30 and 31 of Codex Borbonicus (Graulich 1989: 46)². This ritual was dedicated to the goddess Toci, who possibly originated in the Huastec region (cf. Paszatory 1983: 218-9; Brown 1984). As it is recorded that this headdress decoration was called 'meyotl' or 'miotl(i)' and does not seem to have been related to the concept of xihuitl, I do not include this particular sign in this study (Margain Araujo 1945: 13; Seler 1963: Vol. I, 263; Sahagún 1953-81: Bk 2, 121)

² In the Codex Borgia (pls. 27, 28) and on the stone sculptures of Xochicalco and Tula, Tlaloc is often depicted carrying the trapeze-and-ray sign as headdress, but in Mexica iconography generally this sign is not attributed to Tlaloc and other water-fertility deities (cf. Figures 6.30, 6.35).

(Figure 6.5)³.

For the purpose of analyzing what the Mexica attribute to the trapeze-and-ray sign, I, first, discuss the visual characteristics, related contexts and symbolism of Xiuhcoatl. Then I consider the functions attributed by the Mexica to this sign.

6.1.1 Xiuhcoatl in the precedent cultures

In Mexica iconography, the trapeze-and-ray sign was identified with the segmented body and pointed tail of Xiuhcoatl or the fire serpent (Figures 6.1 a, 6.6). The iconographic origin of Xiuhcoatl have been discussed by several art historians: both Beyer (1965a: 231) and Krickeberg (1993: 136) say that Xiuhcoatl was derived from Quetzalcoatl; Nicholson (1973: 90-1) associates Xiuhcoatl with the Maya deity Itzamná; Miller & Taube (1993: 189) and Taube (2000) see the Teotihuacan War Serpent as a possible ancestral form of Xiuhcoatl, but some scholars see the relationship as unsupported. The iconographic characteristics of Xiuhcoatl are supposed to symbolize war and sacrifice, which were the indispensable rites in the solar cult, and Xiuhcoatl might have become established in its role as a divine creature associated with the solar cult only in Late Postclassic Mexica religion (cf. Gutiérrez Solana 1978; Miller & Taube 1993: 188-9; Taube 2000).

The iconographic representations of Xiuhcoatl can be found depicted both on sculptures and in painted manuscripts. In Mexica religion, Xiuhcoatl was described as *nahualli* or an alter ego of Xiuhtecuhtli or the god of fire, Tezcatlipoca or the creator deity and the first creator of fire, and Huitzilopochtli or the Mexica tribal deity and the god of war. Likewise, the representations of Xiuhcoatl appear with Coyolxauhqui or the moon goddess killed by Huitzilopochtli, and Chantico or the goddess of hearth. In addition, especially on sculptures, Xiuhcoatl was described with glyphs of specific dates as a

³ The Toci's headdress of meyotl is also seen as symbolizing the beginning of the year because the feast of Ochpaniztli marked the beginning of the year (Graulich, personal communication 2007).

commemoration of mythological and historical events.

The descriptions of Xiuhcoatl vary depending on contexts: for example, with the deities Xiuhtecuhtli and Tezcatlipoca, Xiuhcoatl is depicted as a serpent with segmented body and tail in the form of either trapeze-and-ray sign or grass; with Huitzilopochtli, it takes the form of a blue serpent staff with small circular decorations; with Coyolxauhqui and Chantico, it appears as nose and ear ornaments in the form of trapeze-and-ray sign. These graphic variations imply that each pattern of depiction emphasizes different aspects of Xiuhcoatl in accordance with divine figures that appear with it. In this subsection, Xiuhcoatl's basic iconographic characteristics and its variations in different contexts are analyzed, and through these analyses possible symbolism of Xiuhcoatl is extracted.

6.1.2 Iconographic characteristics

The representations of Xiuhcoatl vary depending on contexts, but there are some common iconographic denominators among them to identify this being. Gutiérrez Solana (1978, 1987) and Taube (2000) thoroughly studied iconographic traits of Xiuhcoatl. The major denominators of Xiuhcoatl are specified as a tail with a triangular segment at its end (sometimes with grass motif), a trapezoidally segmented body, and a snout that turns sharply backward and is decorated with circular ornaments (Gutiérrez Solana 1978, Taube 2000) (Figures 6.1a, 6.6).

The triangular tail can be a symbol of the solar ray as seen in the graphic description of the sun in Aztec style codices and sculptures (Beyer 1965a: 237; Gutiérrez Solana 1978: 10). This triangular tail together with the last segment of the body forms a variation of the trapeze-and-ray sign. This form of the tail can represent the concept of year as well as the phonetic aspect of xihuitl, and can also indicate the symbolic association with the solar cult (Miller & Taube 1993: 188) (cf. Figure 6.24). The Mexica were almost certainly aware of the Mixtec trapeze-and-ray year sign's widespread use as a year marker in Early Postclassic Central Mexican cultures, although the Mexica themselves used a different type of

year sign⁴. Considering the related divine figures, however, Xiuhcoatl and the solar movement seem to have a close relationship.

The other element of the tail that represents both phonetic and symbolic aspects of xihuitl is the grass. As mentioned before, the trapeze-and-ray sign can be regarded as a tied bundle of grass in Teotihuacan contexts. In the case of Xiuhcoatl, this bundle of pliable material is tipped with yellow beaded ends (Figure 6.6). Taube (2000: 275-81) argues that this grass may represent a specific plant called *yauhtli*, since the similar green and yellow plant material appears as a tied bundle in the toponymy for Yauhtepec or ‘*yauhtli* mountain’ in the Aztec Codex Mendoza (fol. 8r). *Yauhtli*, which is classified under the category of xihuitl as grass, is a type of sweet-scented marigold and was burned as incense (Sahagún 1953-81: Bk 11, 145-6; Siméon 1992: 164). Because the powder of *yauhtli* was believed to mitigate feeling and pain, it was thrown onto the face of victims before they were sacrificed in fire in the feast of Xocotlhuetzli dedicated to Xiuhtecuhtli (Sahagún 1953-81: Bk 2, 17, 115). Thus, the Xiuhcoatl’s tail in the form of *yauhtli* grass demonstrates the close association of Xiuhcoatl with the concepts of fire and sacrifice, as well as the phonetic aspect of xihuitl as grass.

The segmented body of Xiuhcoatl is interpreted to represent a caterpillar-like being, which implies the association of Xiuhcoatl with both butterfly symbolism and comets or meteors (Taube 2000: 282-301). By examining the iconographic characteristics of the Teotihuacan War Serpent, which is supposed to have been an ancestral form of Xiuhcoatl, Taube (2000) points out the existence of some butterfly attributes, such as, antennae, fangs, upwardly turned snout, and the feather-rimmed eyes. Likewise, the traits of Xiuhcoatl are often similar to the representation of a worm; for example, the toponymy glyph of Ocuilan or ‘the

⁴ Regarding the relationship between the form of trapeze-and-ray and the concept of year, Digby (1974: 271-2) assumes that this sign was employed as an instrument that combines ‘some of the properties of a sundial with those of an astrolabe’ and that models the daily and annual movement of the sun, but because of the lack of archaeological evidence, Aveni (1994: 20-1) doubts the credibility of this hypothesis. Likewise, according to Dr. Allan Mills of University of Leicester (personal communication), Digby’s hypothesis cannot work because the classic seasonal-hour sundials are not based on the equinoctial hour as Digby suggests.

place of *ocuilin* (worm)' is described as a caterpillar with a butterfly head, a bifurcated serpent tongue, fangs, and a segmented body that is virtually identical to that of Xiuhcoatl (Codex Mendoza, fols. 10v, 34r; Siméon 1992: 354; Taube 2000: 288) (Figure 6.7a). In addition, Xiuhcoatl sometimes appears with a butterfly wing or fire on its shoulder (Codex Borbonicus, pls.9, 20; Codex Telleriano-Remensis, fol. 24r; Taube 2000: 288) (Figure 6.8).

The butterfly was associated with the concept of warfare, soul and fire in Mexica thought. Sahagún (1953-81: Bk 3, 49; Bk 6, 162-3; Bk 10, 192) tells us that the souls of slain warriors were reborn as the *tonatiuh ilhuicac yauh* or supernatural butterflies or birds who accompany the rising diurnal sun to zenith (cf. Taube 2000: 287). Regarding the association of the soul and a winged being, Furst (1995: 38) also suggests that the structure of a human heart vaguely implies the shape of a bird or butterfly. Following this belief, the Mexica warriors as well as the solar deities were often depicted with the pectoral in form of butterfly (Figure 6.8). Likewise, in Late Postclassic Central Mexican iconography, the butterfly commonly designates flame called *tlachinolli*, possibly because the movement of its wings can be identified with raging flames (Beyer 1965d: 468; Taube 2000: 288) (Figure 6.6). For example, two Xiuhcoatl depicted on the Aztec Calendar Stone carry the symbol of *tlachinolli* in the form of a butterfly with antenna-like projections within each of the trapezoidal segments of the body (Figure 6.6).

It should also be noted that the Nahua regarded shooting stars and meteorites as caterpillars (Köhler 1989: 295; Taube 2000: 290). Sahagún (1953-81: Bk 11, 100) mentions that shooting stars were said to bring about the appearance of caterpillar or grub-like worms called *citalocuilin* (literally, 'star worm/caterpillar'). In another explanation of the shooting star, Sahagún (1953-81: Bk 7, 13) states:

It was said that the passing of a shooting star rose and fell neither without purpose nor in vain. It brought a worm to something. And of [the animal] wounded by a shooting star, they said: 'It hath been wounded by a shooting star; it hath received a worm'.

Examples of shooting stars or meteors depicted in the form of snake-like beings

with segmented bodies and butterfly heads can be seen in the codices Telleriano-Remensis (fol. 39v) and Vaticanus A (fol. 92v) (Figure 6.7b). A Nahua myth relates that Xiuhcoatl was created by the god of fire in the fifth sky, and that from Xiuhcoatl emerged comets and other luminous marks of the sky such as shooting stars and meteors (*Historia de los mexicanos por sus pinturas* or HMP 1985: 69). In addition, the circular ornaments frequently appearing on the snout and body of Xiuhcoatl are interpreted as stars or as constellation (Beyer 1965a: 232; Aguilera 1985: 72; Taube 2000: 291). These stars are also thought to characterize Xiuhcoatl as a celestial being that emits light in the sky.

In this way, the iconographic characteristics of Xiuhcoatl represent both phonetic and symbolic aspects of xihuitl. In my view, the tail in the form of the trapeze-and-ray sign not only phonetically represents both senses of solar attribute and grass of xihuitl, but also symbolizes the associations of Xiuhcoatl with solar movement, fire and sacrifice. Also its segmented body embodies the caterpillar-like creature related to butterflies, and with the circular ornaments, related to comet and meteors. In Mexica thought, the symbolism of butterflies, in terms of warfare, soul, and fire, relates Xiuhcoatl to the solar cult. Likewise, Xiuhcoatl as comet, shooting star or meteor, personifies the celestial fire.

6.1.3 Contexts

Xiuhcoatl takes different forms in accordance with the accompanying figures. The major figures that Xiuhcoatl appears with are Xiuhtecuhtli, Tezcatlipoca, Huitzilopochtli, and Coyolxauhqui (Chantico). Both Xiuhtecuhtli and Tezcatlipoca are among the traditional deities of the Central Mexico, whereas Huitzilopochtli and Coyolxauhqui play important roles only in the Mexica religion. Most of the cases in which Xiuhcoatl appears with these deities (with the exceptions of Coyolxauhqui and Chantico) are explicative depictions of the deities or their impersonators and the scenes of the so-called *trecena* or *veintena* sections in the codices. The *trecena* describes the patron deities of each of the twenty thirteen-day periods called *tonalpohualli* or 260-day ritual calendar, and

the *veintena* displays the ritual scenes of the twenty months—each consisting of eighteen days—called *xiuhpohualli* or the solar year calendar (Miller & Taube 1993: 50) (cf. Chapter 2). The depictions of Xiuhcoatl in the history sections of the codices are limited to the scenes recording the observation of comets (Codex Telleriano-Remensis: fols. 39v, 44r; Vaticanus A: fols. 92v). In the following paragraphs, the aspects of Xiuhcoatl emphasized in accordance with each deity and the possible functions when Xiuhcoatl appears alone on the sculptures are examined.

Xiuhtecuhtli

Xiuhtecuhtli represents the young aspect of Huehuetēotl or ‘the old god of fire’ who was, along with Tlaloc or the rain god, one of the oldest Mesoamerican deities (Sahagún 1953-81: Bk 1, 29; von Winning 1987: Vol. I, 132; Miller & Taube 1993: 87). Xiuhtecuhtli’s name is a compound of *xihuitl* and *tecuhlli* (lord), and literally means ‘the lord of fire’, ‘the lord of turquoise’, or ‘the lord of year’. Xiuhtecuhtli personifies the sun as a celestial fire in the diurnal blue sky, and is sometimes depicted with a pectoral in the form of a butterfly as an emblem of the solar deity (Figure 6.8). This deity was also related to the annual movement of the sun as well as the rituals of marking one-year, four-year, eight-year, and fifty-two-year or secular periods (López-Luján 1994: 187-8; Caso 1988: 39). For example, during Izcalli, the last month of the solar year, dedicated to Xiuhtecuhtli, he was worshipped as the lord of the year (Sahagún 1953-81: Bk 2, 33-4, 159-166). The rite for this month increased its importance every four years, probably due to the leap-year correction (Sahagún 1953-81: Bk 2, 33; cf. Castillo 1971)⁵. A great ceremony was held in Xiuhtecuhtli’s honor every eight years when the 584-day period of the planet Venus and the 365-day solar period complete a cycle (Caso 1988: 39). Also the New Fire Ceremony (Binding of the Years) took place every fifty-two years in the name of Xiuhtecuhtli to celebrate the completion of the great cycle produced by the

⁵ Some specialists, such as Castillo (1971) and (Aguilera 1989a), hold the view that a leap-year correction existed in the Prehispanic Nahua culture, but the existence of such a correction has not been universally accepted.

combination of the 260-day and 365-day periods. Thus, Xiuhtecuhtli had a close association with both the solar cult and the marking or reckoning of time.

Xiuhtecuhtli was also recognized as one of the personifications of the supreme deity Ometeotl, who was believed to dwell at the navel of the world and from there sustain all creation (cf. Sahagún 1953-81: Bk 6, 41-2, 88-9) (cf. Chapter 5). Xiuhtecuhtli as a representation of the supreme deity is graphically described in the first page of the Codex Fejérváry-Mayer (cf. López Luján 1994: 189) (Figure 6.9). In this figure he occupies the center of the universe and from him all the cosmic trees and birds, eight deities, all the calendar signs and days of the 260-day ritual calendar, are unfolded (León-Portilla 1985: 28).

Xiuhcoatl, as the alter ego of the deities called *xiuhcoanahualli*, appears on the back of Xiuhtecuhtli in the *trecena* and *veintena* sections and in the explanative section of the deities of the codices and on a few stone sculptures. In the codices the combinational figure of *xiuhcoanahualli* and Xiuhtecuhtli can be observed in the following examples: as a patron deity of the ninth (One Serpent) and twentieth (One Rabbit) days of the *trecena* sections of the codices Borbonicus (pls. 9, 20) and Telleriano-Remensis (ninth section is missing, fol. 24r); as a major patron deity, in the ritual descriptions of the month called Izcalli of the Borbonicus (pls. 23, 37) and Primeros Memoriales (fol. 253r); in the explanative descriptions of Xiuhtecuhtli in the Florentine Codex (Bk 1, pl. 13) and Primeros Memoriales (fol. 262v). Likewise, Xiuhtecuhtli with *xiuhcoanahualli* is depicted on the stone box (Figure 6.10). Only the two sides of the box have carved relief, one showing the figure, possibly Xiuhtecuhtli, drawing blood from his ear, and the other displaying the grass ball emblem. Because the relief refers to penitential rites, this box is supposed to have stored the instruments of autosacrifice (Paszory 1983: 246-7; Serra Puche & Castillo Mangas 1992: 213-4; Townsend 1979: 66-7). In addition, there is a stone sculpture of a standing male figure found in Coxcatlan, Puebla, with the relief of the interlaced trapeze-and-ray sign on his back (Figure 6.11). The interlaced style is different from the other graphic representations, possibly due to the regional difference, but it is interpreted that this figure represents Xiuhtecuhtli because the trapeze-and-ray sign symbolizes the tail of Xiuhcoatl (Paszory 1983: 212-5; Serra Puche &

Castillo Mangas 1992; 197-8). In all these graphic representations, the common characteristic is that *Xiuhcoatl* shows its tail in the form of the trapeze-and-ray sign.

The head, segmented body and pointed tail of *xiuhcoanahualli* are usually painted in red, with some exceptions: the Telleriano-Remensis (fol. 24r) shows *xiuhcoanahualli* in red and yellowish orange; in *Primeros Memoriales* and the Florentine Codex, *xiuhcoanahualli* is in yellowish orange with red lips and lower half of its face in black, the facial pattern which is identical to that of its owner *Xiuhtecuhtli*'s (regarding the yellow face, Sahagún 1953-81: Bk 1, 30).

Likewise, on the trapeze-and-ray sign depicted on the standing figure of *Coxcatlan*, some trace of red pigment can be still observed. The association of the colours red and blue to fire has already been established in the preceding linguistic analysis in Chapter 5; it is also claimed that yellow is another colour of fire (Sahagún 1953-81: Bk 2, 17). In addition, all the colours red, blue, yellow and green are employed to describe the solar disk in the codices (e.g. Codex Telleriano Remensis: fols. 12v, 20r, 31r 42v) (Figure 6.12).

Generally speaking, the major characteristics of *xiuhcoanahualli* accompanying *Xiuhtecuhtli* are the segmented body and pointed tail in the form of the trapeze-and-ray sign, although all the *xiuhcoanahualli* depicted in the Codex Borbonicus also carry green grass elements, related to fire and sacrifice, flanking the pointed tail. Likewise, those of the Codex Borbonicus display a butterfly wing-like flame on its shoulder. Thus, by accompanying *Xiuhtecuhtli*, *xiuhcoanahualli* is assumed to emphasize *Xiuhtecuhtli*'s aspects as fire and the sun as a celestial fire.

Tezcatlipoca

Tezcatlipoca is one of the major legendary personages of the Toltec dynasty, along with *Quetzalcoatl*, and as a deity he has innumerable titles and attributes such as the god of night and wizards, omnipresent god, true god (cf. Sahagún 1953-81: Bk 1; Bk 3; Bk 6). According to Miller & Taube (1993: 164), Doris Heyden counts three hundred and sixty different phrases for him only in Book 6 of the Florentine Codex. Tezcatlipoca in Nahuatl means 'smoking mirror', and

like Xiuhtecuhtli, Tezcatlipoca was considered to be a personification of the supreme deity, who manages life and destiny of all the creatures (cf. *Historia de mexicanos por sus pinturas* 1985: 23-4, 27-8; Miller & Taube 1993: 164-5; Olivier 2001: 217-9).

Considering the association of Tezcatlipoca with Xiuhcoatl, the aspects of this deity as the creator of fire and war in the myth of the creations of the Suns (or worlds) may be emphasized. *Historia de los mexicanos por sus pinturas* (HMP 1985: 32-3) tells us that, after the end of the Fourth Sun, Quetzalcoatl created the present human beings, and that Tezcatlipoca ignited a new fire with flints in the year 'Two Reed' in order to dedicate a feast using the fire to the gods (cf. *Códice Chimalpopoca* 1992a: 120). After the creation of fire, Tezcatlipoca created four hundred Chichimeca people and invented war in order to feed the sun with their hearts (HMP 1985: 33, 36-7). Thus, at the mythological level, war and sacrifice were already justified as instruments to support the solar cult.

Tezcatlipoca is documented by a remarkable assortment of iconographic representations (statue, bas-reliefs, ceramics, mural paintings, and codices) and some written sources in Spanish and Nahuatl, including myths, prayers, and descriptions of rituals (Olivier 2001: 217). The combination of Tezcatlipoca and *xiuhcoanahualli* appears as a minor deity mostly in the *veintena* sections, such as in the months of Toxcatl, Teotleco, Quecholli, Panquetzaliztli and Tititl of the *Codex Borbonicus* (pls. 26, 31, 33, 34, 36) and only in Teotleco in the *Telleriano-Remensis* (fol. 3v). In addition, Tezcatlipoca with *xiuhcoanahualli* is depicted with Quetzalcoatl in the scene of the creation myth of the *Borbonicus* (pl. 22), as mentioned above (Figure 6.13b). In all cases Xiuhcoatl is described as having the snout with circular ornaments and the tail of a bundle of grass but without the segmented body. In the descriptions of the *Telleriano-Remensis* and of the scene of the creation myth of the *Borbonicus*, Xiuhcoatl carries a black wing-like fan on its shoulder, possibly representing fire, as is also the case with Xiuhtecuhtli. Therefore, compared to Xiuhtecuhtli, the major distinction is the form of the tail. As this *yauhtli* grass represents fire and sacrifice, as discussed before, this type of Xiuhcoatl is assumed to manifest the aspects of the creator of fire and war/sacrifice of Tezcatlipoca.

Huitzilopochtli

Huitzilopochtli was the leader who guided the Mexica tribe during the legendary migration. Huitzilopochtli is also the principal deity of the Aztec empire and represents aspects of the war and solar deity (Boone 1989: 1). His name literally means ‘hummingbird on the left’, which signifies ‘reborn warrior from the south’, because the south is the left hand side of the world in Nahuatl, and hummingbirds as well as butterflies represent the souls of dead warriors who, in the afterlife, were believed to serve the sun during the day time (Sahagún 1953-81: Bk 1, 1 note 2; Bk 3, 49). Huitzilopochtli’s other name is Ilhuicatl Xoxouhqui or ‘the clear blue sky’ which represents his relation to the solar deity (Sahagún 1953-81: Bk 2, 179). According to Beyer (1965c: 376) and Caso (1988: 33), this name refers to the sun, the celestial fire, and the diurnal sky. Huitzilopochtli was also regarded as one of the four sons or manifestations of the supreme deity in the myth (HMP 1985: 23-4). Thus, in a way he is identical with Xiuhtecuhtli and Tezcatlipoca.

Xiuhcoatl acts as divine weapon in the myth of the birth of Huitzilopochtli and symbolizes Huitzilopochtli’s victory, or the victory of the Mexica over their enemies (Sahagún 1953-81: Bk 3, 1-5). The myth tells us that Huitzilopochtli was born fully armed and, with Xiuhcoatl, struck off his sister Coyolxauhqui’s head and dismembered her body. The right half (south side) of the Templo Mayor dedicated to Huitzilopochtli represents Coatepec or ‘the Hill of Serpent’, which is the name of the place where his birth took place, and at the foot of the temple the stone monument of dismembered Coyolxauhqui was laid down. Thus, the Temple Mayor at Tenochtitlan was the place to reproduce this particular myth (Matos Moctezuma 1987: 33, 57-8; Boone 1989: 2; Townsend 1992: 151; Smith 1998: 232).

The festival of Panquetzaliztli, in the fifteenth month of *veintena*, dedicated to Huitzilopochtli was considered to be the re-enactment of the very myth (Matos Moctezuma 1987: 33, 57-8). Sahagún (1953-81: Bk 2, 141-150) describes the festival in the following way. The captives representing Centzonhuitznahua, who were four hundred brothers of Huitzilopochtli and also typified his enemies, were slain at the top of the temple. Their bodies were rolled down the temple

steps to get mutilated by the priests at the bottom, which recalls the fate of Coyolxauhqui. Then Xiuhcoatl, a fire serpent made of paper and feathers was brought down to the ground from the top of the temple. The serpent looked like a burning torch, and the fire priest, who administrated the festival, raised it in dedication to the four directions. Townsend (1979: 70) interprets this act of the fire priest as follows:

Celestial luminosity, heat, and generative might of the sun are metaphorically represented by this dragon-like creature: through the east-west orientation of the pyramid, these powers are shown to originate in the direction of the sun's emergence and are brought down to the surface of the earth and presented to the four directions.

Townsend (1979: 69-70) emphasizes the downward movement of Xiuhcoatl in this rite, for it expresses the flow of energy or power from one place to the next. Xiuhcoatl, in this festival, should be seen as the symbol of the power of Huitzilopochtli, or the Mexica nation, spreading to all the directions from the capital, the center of the world (Townsend 1979). In fact, the cult of Huitzilopochtli, which was the cult of war and the sun, was considered as the state cult of the Aztec empire, which itself had gained intellectual and economic dominance, if not direct political control, over most of the peoples of Mesoamerica (Boone 1989: 1).

However, in spite of this clear focus on Huitzilopochtli at the Templo Mayor and his importance elsewhere in the Aztec empire, it is interesting to point out that not enough visual representations of Huitzilopochtli exist to reconstruct the image of this deity, in contrast with the case of Tezcatlipoca (Boone 1989: 2). Also, setting aside the hummingbird ornament, Huitzilopochtli's remaining visual characteristics are shared by other deities, such as Xiuhtecuhtli and Tezcatlipoca (Boone 1989: 5-9). Similarly, his *xiuhcoanahualli* takes different forms from those appearing with Xiuhtecuhtli and Tezcatlipoca, and sometimes two *xiuhcoanahuallis* appear at the same time (Figure 6.14a). Huitzilopochtli normally, in his portraits, carries Xiuhcoatl in his hand, in the form of a blue serpent staff with circular ornaments; for example, in the ritual scenes of Teotleco, Tititl and Panquetzalitzli in the Codex Borbonicus (pls. 31, 34, 36) (Figure 6.14b). Huitzilopochtli depicted in Primeros Memoriales (fol. 261r) has, on his back,

another type of *xiuhcoanahualli* in the form of the serpent head, which is painted in blue, red and green, with teeth-like ornaments along its snout, possibly corresponding to the circular ornaments of the other types of Xiuhcoatl. The Book 1 (pl. 1) of the Florentine Codex also displays the same type of Huitzilopochtli with both *xiuhcoanahualli* in the forms of a staff and the serpent head, but the colour is too shaded to be identified. Considering the fact that most cases of *xiuhcoanahualli* with Huitzilopochtli take the form of a blue serpent with circular ornaments, it is supposed that this Xiuhcoatl emphasizes Huitzilopochtli as the blue sky and the celestial fire, both implying the sun, rather than as the manifestation of fire as in the cases of Xiuhtecuhtli and Tezcatlipoca. In addition, it should not be forgotten that this blue serpent is a mythological weapon to kill enemies, and thus, Xiuhcoatl in the hand of Huitzilopochtli symbolizes war and victory.

Coyolxauhqui and Chantico

The Mexica goddess Coyolxauhqui is known in three different contexts: in legendary history, in mythology and in religious contexts. In legendary history, Coyolxauhqui takes the role of the leader of the rebellions against Huitzilopochtli during the migration. In the myth of the birth of Huitzilopochtli, she is a malevolent half-sister of Huitzilopochtli (Sahagún 1953-81: Bk 3, 1-5; Tezozómoc 1992: 34-5). In both stories Coyolxauhqui is killed and decapitated by Huitzilopochtli. Thus, in Mexica religion, as the one defeated by Huitzilopochtli or the sun, Coyolxauhqui was considered to be the moon that has to disappear when the sun rises (Milbrath 2001: 340).

As for the graphic representations of Coyolxauhqui, there are very few depictions of this goddess in the codices, but six stone sculptures have been recovered and four of them show representations of Xiuhcoatl (the other two are too fragmentary) (Figure 6.15). Five of them were found in and around the Templo Mayor, but the provenance of one, made of greenstone, is unknown (cf. Matos Moctezuma 1991). Two from the Templo Mayor are stone sculptures of Coyolxauhqui's decapitated head and two are carved reliefs of her dismembered body. All the representations of the goddess describe the scene of her death.

Both of the decapitated heads display ear ornaments in the form of the trapeze-and-ray sign, and one has a nose ornament of the same type (Figures 6.15a, b). It is reported that the ear lobes were part of the body from which the Mexica people shedded blood to offer it to the deities in the ritual of auto-sacrifice (e.g. Sahagún 1953-81: Bk 2, 35, 164, 204). Therefore, the ear ornaments in the form of the trapeze-and-ray representing the divine weapon of Huitzilopochtli may be a symbol of the victim dedicated to Huitzilopochtli. Likewise, the dismembered Coyolxauhqui carved on the circular monument wears ear ornaments in the same style, and one of the fragmentary pieces of the other monumental relief shows Xiuhcoatl, with a segmented body and tail in the form of the trapeze-and-ray, penetrating into the body of the goddess (Figures 6.15c, d). The latter relief clearly depicts the moment of the killing of Coyolxauhqui with his weapon Xiuhcoatl.

Chantico is originally the goddess of fire associated with the hearth and is also the patron deity of the Xochimilco lapidaries, but it is thought that Chantico may have been merged with Coyolxauhqui in Mexica religion as the nocturnal moonlight visualized as firelight (Sahagún 1953-81: Bk 9, 79; Quiñones Keber 1995: 186, 332; Milbrath 2001: 340). Chantico appears in the eighteenth *trecena* section (the Day One Wind) of the codices Telleriano-Remensis (fol. 21v) and Borbonicus (pl. 18), but the red ear ornament in the form of the trapeze-and-ray is displayed only in the Telleriano-Remensis (Figure 6.16). This ornament may represent both fire as an attribute of the goddess and also the weapon of Huitzilopochtli as a representative of Coyolxauhqui.

Because Huitzilopochtli's weapon is represented, the ornament may symbolize his victory over his sister. In other words, the victory of Huitzilopochtli is represented rather than a religious aspect of the goddess.

Sculptures of Xiuhcoatl

The sculptures of Xiuhcoatl are few, and in most cases the detailed contexts of the provenances are unknown. Moreover, the size, forms and styles vary in each case, a fact which makes it difficult to draw any common symbolism and functions.

There are at least five stone sculptures of Xiuhcoatl, a few more with reliefs of Xiuhcoatl with other religious or mythological figures. Two sculptures are colossal serpent heads; the one, with upturned snout with circular ornaments and a motif of the segmented body, and the other, also about the same size, but the upper part (snout) is destroyed, and both have been recovered from the former sacred precinct of Tenochtitlan (Pasztory 1983: 172-3; Taube 2000: 294) (Figure 6.17). The latter bears a day sign Four Reed on the back of its head, the date which can be interpreted as the most appropriate day for the drilling of new fire, and also as the day on which new fire was drilled in the 1507 year of Two Reed (Taube 2000: 294-5) (Figure 6.17c). There are two identical quartz-diorite sculptures of the coiled serpent possibly unearthed from near the centre of Tenochtitlan, one in the Museo Nacional de Antropología in Mexico (MNA) and the other in Dumbarton Oaks in Washington, showing the segmented body with pointed tail and grass (Heyden 1972: 7-8; Pasztory 1983: 252; Serra Puche & Castillo Mangas 1992: 198) (Figure 6.18). The relief under the coiled serpent in Washington displays the name glyph of the ruler Motecuhzoma II and the year sign Two Reed. This combination of the ruler and the year on the sculpture of Xiuhcoatl probably represents the New Fire Ceremony of 1507 (Pasztory 1983: 252). The last piece is a stone sculpture of Xiuhcoatl, stored in the British Museum in London, with upturned snout with circular ornaments, segmented body and the tail of the trapeze-and-ray sign, attributes similar to those depicted with Xiuhtecuhtli in the codices (Figure 6.1a). This Xiuhcoatl takes the downward position that may represent the celestial fire, such as bolt of lightning, striking earthwards from the sky (McEwan 1994: 11). This downward movement reminds us of the role of Xiuhcoatl representing the power and heat of the sun in the feast of Panquetzaliztli, mentioned before.

Another example showing the same downward movement of Xiuhcoatl is the round monumental relief of the Aztec Calendar Stone found in the sacred precinct of Tenochtitlan (Figures 6.6, 6.19). This round monumental sculpture has been studied by several specialists since its discovery in 1790 in the former sacred precinct of Tenochtitlan (Beyer 1965a, Navarrete & Heyden 1974, Townsend 1979, Caso 1988, Umberger 1988, Fradcourt 1998, Taube 2000). It has been

interpreted that all the iconographical motifs of this monumental sculpture refer to the sun, and the sculpture itself was a cult object dedicated to the sun (Townsend 1979: 63). The two Xiuhcoatl constitute the frame of the monument in the position of flowing down from the uppermost central day glyph 'Thirteen Reed'. The date Thirteen Reed is mythologically and historically important in terms of the foundation of the Mexica world, because this date is mentioned in at least two versions of the origin myth as the time of the present Sun's creation, and also because the date corresponds to the national independence of the Mexica, namely, the year of the fourth ruler Itzcoatl's accession to power (Townsend 1979: 70; HMP 1985: 35; *Historia de México* 1985: 109). Itzcoatl's reign directly connects to 'the beginning of an imperial vision, a time in which the Mexica began to conceive of themselves as great, and to create a sense of historical mission that propelled Tenochtitlan from the position of a back water tributary city to a position of unparalleled might in Mesoamerica' (Townsend 1979: 70) (cf. Chapter 2). Thus, the Xiuhcoatl flanking the date Thirteen Reed can be viewed as the embodiment of the solar power sustaining all the creatures as well as the Mexica national power flowing over the conquered cities.

It is noteworthy that two of the Xiuhcoatl sculptures show calendric dates that possibly refer to the ceremony of 'the Binding of Our Years' in 1507, which alludes to the connection of Xiuhcoatl to the mythological creation of fire (cf. Chapter 8). Likewise, by being described in downward movement, Xiuhcoatl may represent both the flow of energy from the celestial fire and the Mexica imperial power.

6.1.4 Symbolism

By associating with the three major deities, Xiuhtecuhtli, Tezcatlipoca and Huitzilopochtli, Xiuhcoatl may have been recognized as an embodiment of the divine power of the creator god residing at the center of the universe. In addition, this representation of the divine power via Xiuhcoatl seems to have overlapped with the Mexica political power emitted from the centre of the empire.

Each of the three deities discussed above is thought to have functioned to emphasize certain attributes of the supreme deity: Xiuhtecuhtli as fire and the sun; Huitzilopochtli as warrior and the diurnal sky; Tezcatlipoca as the creator of fire and of war/sacrifice. The role of Xiuhcoatl is to support and accentuate their functions. However, in the case of Coyolxauhqui, the representations of Xiuhcoatl emphasize not her function but the victory of Huitzilopochtli over his enemies.

Regarding the sculptures, it is difficult to generalize about how they may have functioned, because the contexts in which these sculptures were actually displayed in the sacred precinct are unknown. However, considering the monumental size of the two sculptures of Xiuhcoatl's head, the Aztec Calendar Stone, and some of the Coyolxauhqui sculptures, they may have been viewed by the public as the commemorations of important mythological and historical events and as the justification of the Mexica imperial expansion through warfare.

Reviewing all the representations of Xiuhcoatl, it can be said that the symbols peculiar to the Mexica style Xiuhcoatl are the trapeze-and-ray tail and the circular ornaments on the snout. The Mixteca-Puebla style codices Laud (pl. 17, 41) and Borgia (pl. 33, 34, 38, 46, 49) show similar fire serpents, with segmented body and flames, playing a role as an instrument for kindling fire or representing fire itself (Figure 6.20). It is clear from the Mixteca-Puebla contexts that these serpents do not represent the sun or other celestial aspects but only fire (Seler 1993: II, 9-83; Anders, et al. 1994a: 195, 25). As the Mexica creation myth tells us that the present sun was created from divine fire, Mexica artists may have invented Xiuhcoatl by combining the Mixtec fire serpent representing fire, the trapeze-and-ray sign representing both fire and solar ray, and the circular ornaments representing celestial fire in order to embody the divine and dynamic power of the sun (=the Mexica) in one figure (cf. Sahagún 1953-81: Bk 3, 3-9).

6.1.5 Summary

The Mexica usages of the trapeze-and-ray sign contained both the traditional and Mexica innovative elements. The elements derived from the traditions are the year-related symbol and the concept of fire. On the other hand, the most important innovation by the Mexica was the incorporation of the trapeze-and-ray sign into the figure of Xiuhcoatl, and the imposition of both religious and mythological symbols onto Xiuhcoatl as a divine being more than a fire serpent.

Moreover, it is assumed that the symbolism of the trapeze-and-ray sign had meaning for a wide audience. Although most of the codices were supposedly elite property, at least the *veintena* ritual sections of the codices may describe something close to the actual performances taken in the rituals. Especially, it is believed that the Codex Borbonicus describes the *veintena* rituals of the particular year, which is the year of the New Fire Ceremony, the year Two Reed (1507) (Anders, et al. 1991: 191). Therefore, *xiuhcoanahuallis* with the deities were possibly seen and understood by the public taking part in the rituals in the capital. Likewise, some monumental stone sculptures were likely produced for public as well as elite consumption. If so, it is possible that at least the people in the capital could easily associate the trapeze-and-ray sign with the word *xihuitl*, indirectly via the Xiuhcoatl representations. Then the elite idea of the trapeze-and-ray sign as a symbol of the solar cult, which equates to the state cult, may have been commonly shared by those who experienced life in Tenochtitlan. If so, the trapeze-and-ray sign concept had a different audience than the quincross symbol, discussed later in this chapter.

6.2 Aztec year signs

The calendric date sign is one of the old iconographic traditions in Mesoamerica. One of the oldest records of the date is the Zapotec monument Stela 12, which displays a headband containing a cross in the form of a diadem with year bearer dates (c. 500 B.C.) (Miller & Taube 1993: 192). The origin of the Aztec square

year sign may be traced back to the Epiclassic Xochicalco and Early Postclassic Toltec calendric glyph in rectangular cartouches with rounded corners and bar-and-dot (sometimes dot-only) numerals (Prem 2001: 346) (Figure 6.21). The Aztec year sign takes the form of a square frame with the number indicated by dots (1 to 13) and with one of four calendric glyphs 'Rabbit', 'Reed', 'Flint' and 'House' inside the frame (Figure 6.1c). The year sign is depicted mainly in the sections of historical accounts of the Aztec codices and on sculptures commemorating mythological and historical events.

There is another type of year sign in the Aztec writing system. It is the turquoise glyph, which was a Mexica invention, used especially in the early Colonial codices. It is assumed that the turquoise glyph was employed in order to represent the phonetic aspect of *xihuitl* (cf. Prem 2001: 346-7) (Figure 6.1d). This turquoise year sign, however, does not indicate the calendric year but duration of time, such as age and the ruling period of rulers. In the following subsections, iconographic roots, characteristics, symbolism and functions of each year sign are examined.

6.2.1 Square year sign

The Aztec square year sign is supposed to be a simplified form of the complex Xochicalco style. The iconography observed in Xochicalco is thought to be influenced by several different cultures such as, Teotihuacan, Zapotec, Huastec and Maya, and so the graphic symbols for the year are varied in its forms (López Luján 1995: 111-2) (Figure 6.21). Generally speaking, however, the year signs are composed of more elements than the simple combination of the square, year glyph and number; some appear with the trapeze-and-ray sign on the square, with a rope-like motif, and with anthropomorphic motifs, such as hand and face, and the bar indicating the number five is always described as a tied bundle (Figures 6.21b, 6.22). This elaborate and anthropomorphic style can be interpreted as the general Mesoamerican association of the year bearer with 'ruler', rather than just the year's name. Justeson & Kaufman (2001: 365) explain this concept as

follows:

Its designation as ‘year bearer’ is a Maya practice, based on a Mayan metaphor in which positions of political leadership are ‘borne’ by officeholders as loads are carried with a tumpline; the rope or tumpline symbol marking year bearers in calendrical notations at Xochicalco and in related writing elsewhere seems to be based on this Mayan metaphor. More direct terms for political power are reflected in Zapotec hieroglyphic writing, where a headdress that marks the written names of rulers or references to them also marks year bearers; it seems to represent the proto-Zapotec word **kokki* (‘lord’).

Thus, the concept of year (time) was identified with the political power carried with a rope that encloses and ties the year glyph. The square form of the Aztec year sign may have been derived from this image of enclosing rope.

Regarding the morphology of the Aztec square year sign, however, there is another possible interpretation relating to the tail of Xiuhtli. One of the year glyphs, One Rabbit, carved on a rock commemorating the first New Fire in Xochicalco is depicted in the enlarged trapezoidal square that interlaces with a flattened ray-like motif (cf. Sáenz 1967: 12-7) (Figure 6.23). Likewise, some year signs on stelae found in Tenango, a Central Mexican contemporary site to Xochicalco, depict an interlaced trapeze-and-ray sign which rests on a calendric glyph enclosed in a square (cf. Caso 1967: 162) (Figure 6.2c). Therefore, this type of square year sign may correspond to the last trapezoidal square of the body or the tail of Xiuhtli. The graphic association of the year sign and Xiuhtli has been pointed out by Miller & Taube (1993: 113) and Taube (2000: 279), and this alludes to the embodiment of Xiuhtli as the movement of the sun and the solar cult (Figure 6.24). Considering both interpretations, the square form for the year sign is thought to be a convenient way to represent the concept of political and religious power that affected mythological and historical events.

The simplification or schematization of the Aztec year sign can be explained by the difference in the functions of the writing systems. Aztec writing combines two independent but complementary systems called ‘narrative pictography’ and ‘hieroglyphic writing’ (Prem 2001: 346). Narrative pictography records information by the depiction of its content, and conveys only the skeleton of the information, avoiding details that might obscure the essence of

the message (Prem 2001). Hieroglyphic writing includes records of calendrical data, personal names, place-names, and a few other types of information, all of which show a higher level of standardization (Prem 2001). On the other hand, especially in Classic and Epiclassic sites such as Xochicalco, the two systems seem to have been mixed rather than complementary, and hieroglyphs themselves often play the anthropomorphic role in the context. For example, whereas the graphic representation of the New Fire in Xochicalco is depicted on calendric glyphs, as if the glyphs themselves were burning, in the Aztec codex Borbonicus (pl. 34) the New Fire Ceremony is described as a ritual scene conducted by the priests and other people, and the year sign is placed independently outside the scene (Figure 6.25). In order to limit its function as a glyph of a year sign, the Aztec square year sign is thought to have become simplified.

The square year sign is commonly depicted in the Aztec codices such as the Codices Borbonicus, Telleriano-Remensis, Vaticanus A, Magliabechiano, Tudela, Mendoza, and Aubin. All of them display the same form of the year sign excluding the Codex Magliabechiano, which shows dot numbers outside the square frame (Figure 6.26a). The day glyphs are normally depicted without the square frame, but sometimes appear with a frame, which causes confusion when the day overlaps with one of the year bearers.

All the codices demonstrate almost the same colour pattern, basically blue frame, red or yellowish orange background inside the frame, and blue glyph and dot numbers (Figure 6.1c). A few variations can be observed: the section dealing with historic events in the Borbonicus (e.g. pls. 34, 37, 38) show the year signs with the blue frame, coloured glyph with red, yellow, green and blue dots, and the background inside the frame is not painted (Figure 6.25); the Magliabechiano displays those with blue frame, dots and glyph, and yellowish orange background, but the dots are depicted outside the frame (Figure 6.26a); the Mendoza (e.g. fols. 2r-5v) contains the square year sign painted all in blue (Figure 6.26b); the sections narrating the legendary history in the Telleriano-Remensis (fols. 25r-28v) and in the Vaticanus A (fols. 66v-70v & 81r) present the year signs with red frame, unpainted background, and orange glyph and numbers (Figure 6.26c), while in the sections dealing with the history after the foundation of the

capital of Tenochtitlan, the year signs in both codices have the blue frame, glyph and numbers, and red background (Figure 6.26d). The codices Telleriano-Remensis and Vaticanus A are regarded as copies of several early pictorial manuscripts, and this difference in style between the sections is supposed to have been due to different manuscript sources (Quiñones Keber 1995: 123, 130). This colour combination can be explained associating with the colours of Xiuhcoatl, the sun, and also turquoise. All the colours red, yellowish orange, blue and green are the colours of Xiuhcoatl and the sun, as discussed in the last section. In addition, based on the phonetic association, blue as the colour of turquoise can be another analogy (Miller & Taube 1993: 192).

In this way the Aztec year sign can be seen to have been derived from the precedent Central Mexican cultures, but its forms, functions and symbolism were modified by the Mexica to suit the Mexica way of expression. This means that the concept of the political and religious power of the year bearer was a legacy of other cultures, but the association with the symbolism and colours of Xiuhcoatl, and the deliberate simplification of the year sign in order to fit it into their narrative pictography were Mexica innovations.

6.2.2 Turquoise year sign

Another year sign, the turquoise glyph, represents the countable aspect of year. This is one of the hieroglyphs believed to be originated by the Mexica based on the phonetic association (cf. Prem 1979, 2001). All of the turquoise glyphs are designed either as a series of blue dots or as a turquoise mosaic, and the form and colour of this glyph are often a copy of the representation of the turquoise mosaic objects depicted in the lists of regional tribute (e.g. *Matrícula de Tributos*: pl.30) (Figure 6.1d). Likewise, this glyph may be derived directly from the numerical dots in the square year sign. The turquoise year sign can be found only in the post Conquest Codices Mendoza (composed around 1541), Aubin (after 1560), and *Primeros Memoriales* (1558-60) (Baird 1993: 3; Anawalt 2001: 205; Leibsohn 2001b: 60-1). Therefore, it is possible that this particular type of year

sign could have been a post Conquest invention influenced by European contact.

The actual examples of the turquoise year sign are depicted in the following ways. In the Codex Mendoza (fols. 58r-61r, 71r), the turquoise year sign appears in the form of a series of blue dots in the ethnographic section in order to indicate people's ages; for example, in the form of three blue turquoise mosaic stones with banners (each banner representing 20) and extra dots to count an old person's age (Figure 6.27). In the same manner, the Aubin (pls. 139-157) displays a series of turquoise stones to show the duration of reign of each Mexica lord (Figure 6.1d). In *Primeros Memoriales*, the turquoise year sign takes a similar form to the phonetic glyph 'xihuitl', which is analyzed later in this chapter, and the Nahuatl annotation beside the illustration narrates *chicue xiuhtica* or 'every eight years' (Figure 6.28).

In pre-Conquest times the number of years of any given period does not seem to have considered to be important. Even in the post Conquest Codex Telleriano-Remensis, the duration of the ruling period of rulers was depicted as a list of the square year signs corresponding to reigning years instead of indicating the number of years by dots (fols. 29r-31r). This way of expression reinforces the concept of the power subsumed by the square year sign. Even though the custom of counting years was a European practice, the Mexica concept of year persisted as something divine and precious and was still expressed by the employment of the turquoise symbol, in addition to the phonetic association (cf. Berdan & Anawalt 1997: 154).

6.2.3 Summary

My analysis suggests that public understanding of the square year sign was widespread, whereas the meaning of the turquoise year sign was limited to the post-Conquest elite. Besides the codices, which were elite properties, the square year sign appears on monumental sculptures, such as the Aztec Calendar Stone, the stone bundle of the years, or the Teocalli de la Guerra Sagrada, which were likely displayed in public spaces. Considering the widespread Mesoamerican

custom of naming babies after the date of their birth, the calendric system must have been well understood by the local people in addition to the elite (cf. Miller & Taube 1993: 48-9). On the other hand, it seems that the turquoise year sign was still in the process of establishing its function only among those engaged in composing manuscripts during the early Colonial period.

However, this does not mean that the turquoise year sign was a totally new idea. The basic form, symbolism, and function of the turquoise glyph already existed as numerical dots in the square year sign. Likewise, the turquoise year sign was not an isolated invention, because it sometimes shares morphology with another Mexica invention related to *xihuitl*, which is the phonetic glyph 'xihuitl', possibly derived from the traditional graphic symbol of the quincross (see next section). It must not have been a difficult task to arrive at the idea of the turquoise glyph, at least among the composers of the manuscripts. Thus, the turquoise year sign is proposed as an example of a visual representation of an extended concept that emerged metaphorically from already established concepts.

6.3 Quincross

The quincross takes the form of a square that contains inside one central dot and four other dots, each attached to a corner of the square (Figure 6.1b). The quincross is another Mesoamerican traditional glyph and appears in Maya, Zapotec, Teotihuacan, Huastec, and Aztec (Mexica) iconography (cf. Thompson 1962, Caso 1967, Klein 1973, 1976, Pasztory 1983: 85; Langlely 1986: 279). In Maya iconography, the quincross (so-called *kan* cross) originally symbolizes the south, and was interchangeable with the glyph *Yax*, meaning 'new', 'blue-green' as well as 'south', and also with the glyph for 'completion', which was used to signify the end of a temporal cycle (Thompson 1971: 111-2, 252, 276; Klein 1973: 74). The *kan* cross also appears in the forehead of the Maya earth monster *Itzam Cab* in the sanctuary tablet of the Temple of the Foliated Cross at Palenque (Thompson 1971: 112, 145, 251-2; Klein 1973: 74; 1976: 195-6). In Zapotec iconography the quincross has been interpreted as a turquoise glyph and also

assumed to have been an important element of the symbol of the solar year (Caso 1967: 145; Thompson 1971: 252; Klein 1973: 74). In Teotihuacan, as the quincross often appears in the headdress of the earth and water deities, such as Tlaloc, and on the body of the feathered serpent, with water symbolism as its primary interpretation (Pasztor 1976: 136-7; von Winning 1987: Vol. I, 125; Vol. II, 11) (Figure 6.29). From the association of this glyph with Tlaloc, Caso (1988: 60; 1966a: 258) relates it to the south where his mythical realm Tlalocan was said to be located, and to the five world directions, as observed in the Codices Borgia (pls. 27, 28), Vaticanus B (pl. 69) and Laud (pl. 23) (Figure 6.30). Likewise, Séjourné (1956: 89-94) insists on its relation to the directional symbolism but also suggests the symbolism of fire as seen in the headband of the sculptures of the fire god found in Teotihuacan and Huastec region (see also, Taube 2000: 312-4). Thus, the quincross was another widely used symbol as well as the trapeze-and-ray sign.

In Mesoamerican cosmology in general, the set of five directions has been interpreted as the representation of the annual course of the sun, and by extension as the model of whole cosmos (cf. Villa Rojas 1988: 127-34; Markman and Markman 1992: 91, 162-9). For example, the first page of the Codex Fejérváry-Mayer displays the schematized cosmos and time (with calendric signs) in the native way with four eagles representing the sun at the corners and Xiuhtecuhtli, one of the solar deities, at the centre (Figure 6.9).

In Mexica iconography, the standardized use of the quincross can be found carved on the central part of the sculptures of Tlaloc-Tlaltecuhltli or the earth monster. Other examples are depicted on the sculptures of Rain Deity-Chacmool and on the sides of the stone boxes, as well as on the carvings of the solar disk. In the codices, a similar symbol appears as a design on the circular back shield carried by Huehuateotl-Xiuhtecuhtli. In the following subsections, the possible symbolism and functions of the quincross are studied in three contexts, namely, Tlaltecuhltli, other sculptures, and back shield. Then the relationship between the quincross and the word xihuitl is discussed. For the purpose of elucidating the general symbolism, sculptures without detailed context or information are not

included here⁶.

6.3.1 Tlaloc-Tlaltecuhтли

Tlaltecuhтли literally means ‘earth lord’. Most Mexica representations clearly depict this creature as female, often in a squat position, and the origin of this deity is unknown (Miller & Taube 1993: 167-8)⁷. In Mexica myths, Tlaltecuhтли is the ‘earth monster’ always desiring human blood and hearts to eat in order to bring necessary provision to human beings (*Historia de México* 1985: 108).

According to Nicholson (1967, 1972), there are three major types of the graphic representations of Tlaltecuhтли: 1) with gaping, teeth studded jaws facing upward; 2) with a human face rather than an open jaw, in the same upward (i.e. head thrown back) position, usually—but not invariably—that of the earth goddess with her typical facial decoration; 3) a ‘Tlalocoid’ image, in the same crouching position, arms upraised, but with the face (displaying some features resembling those of Tlaloc) not thrown back but in its ‘normal’ frontal position (cited from Baquedano 1993: 158) (Figure 6.31). The images of Tlaltecuhтли are usually carved on the bottom of the sculptures, where it makes contact with the earth (Miller & Taube 1993: 167). The first two types seem to show the dorsal view, while the third type faces front.

The quincross always appears in the centre of the body of the third type. So far nine examples of the third type have been found depicted on the sculptures of: Skeletal Goddess (MNA), Feathered Serpent (MNA), Colossal Coatlicue (MNA), Yollotlicue (MNA, no figure), and the others on reused monoliths (the three in Museo Templo Mayor, Mexico, or MTM, and the others in MNA) (cf. Pasztory 1988: 294) (Figures 6.31c, 6.32, 6.33). The first four examples were carved on the bases of the stone sculptures of the divine figures presumably because the

⁶ For example, I do not include the sculptures of the Man with Jaguar Helmet and the so-called Huehuetotl-Xiuhtecuhtli, both displaying the quincross on their leg decorations, because the identification of the figures is problematic and there are no comparative examples (cf. Pasztory 1983: 175-7; Antiquo Colegio de San Ildefonso 1995: 33).

⁷ There are three squat positions; one for fecundation, another for receiving fecundation

bases were intended to be in contact with the earth. The original placement of the other five examples is unknown because all were cut and reused as building material in the Colonial period.

The co-occurrence of the characteristics of Tlaloc in the third type with the quincross reminds us of the Teotihuacan Tlaloc. Pasztory (1988: 294) interprets the relationship of the first four sculptures in the following way, based on the premise that a major aim of the monuments made for the sacred precinct in Tenochtitlan was the validation of Mexica rule by references to Toltec and Teotihuacan traditions.

These Tlaloc-earth monster images represent more specifically the Toltec earth or antiquity prior to Mexica rule. These four sculptures all have features that link them to previous cultures. Umberger (1981) has shown that the greenstone skeletal goddess is a Mexica reinterpretation of a Teotihuacan sculpture⁸. The feathered serpent may be a reference to the Toltec deity Quetzalcoatl or could be a symbol for the surface of the earth. The human face with the symbols for warfare that emerge from the open maw of the serpent probably represents the Mexica era born from the Toltec past (Pasztory 1983: 161-2). Coatlicue and Yollotlicue are sculptures of female goddesses with death attributes. Coatlicue is generally believed to represent the mother of the Mexica patron and war god Huitzilopochtli (Fernández 1954). She too may have been thought of as an earth mother of Toltec origin.

Thus, the Tlaloc-Tlaltecuhтли figures on these monuments imply that the Mexica expressed their emergence from a Toltec past and validated their rule through the symbols of iconographic continuity (Pasztory 1983: 157-62; 1988: 294).

In the case of the Teotihuacan Tlaloc, the quincross is thought to be related to the symbolism of water and the five directions (=the solar movement). The third type shows the quincross enclosed in a disk with three ray-like motifs, and this combination of the motifs implies the solar disk, which can be derived from the idea of solar movement (Figure 6.31c). By its depiction on the base of sculptures facing the earth, the quincross may represent Tlalchitonatiuh or 'the sun near the earth', which indicates the setting sun in the west (Klein 1973: 73-4;

(dorsal figure), and the other for giving birth (Graulich, personal communication 2007).

⁸ Emily Good Umberger (1981) *Aztec Sculptures, Hieroglyphs, and History*. Doctoral dissertation, Department of Art History and Archaeology, Columbia University, New York.

Tozzer 1957: 116). The west was called *cihuatlampa*, the place where the women who died in childbirth lived in the afterlife (Sahagún 1953-81: Bk 6, 161-5). The women who died in childbirth were regarded as warriors and were thought to serve the sun from midday to sunset (those who died in war in the guise of hummingbirds or butterflies served the sun from the sunrise to midday) (Sahagún 1953-81: Bk 6, 163). Therefore, Tlalchitonatiuh may be related to the birth-giving position of Tlaltecuhli. If the four sculptures with Tlaloc-Tlaltecuhli relief represent the Mexica justification for their rulership, it is not surprising to have a solar disk as a symbol of the state cult in the centre.

This idea can be compared with the central motif of the other two types of Tlaltecuhli; the first type displays the symbol of *chalchihuitl* or jade, and the second type, the skull (Figures 6.31a, b). *Chalchihuitl* often represents the concept of precious water (=blood), and by extension, human sacrifice (Pasztor 1983: 236). The skull motif symbolizes death, but death was a prerequisite for rebirth, especially in the context of Tlaltecuhli, because the earth requires human hearts and blood in order to bring fertility (Klein 1973: 71). In addition, Tlaloc, as the rain deity who resides in the mountain caves, connotes both the celestial and terrestrial aspects, and also Tlaltecuhli is sometimes juxtaposed with the sun as the divine being that requires human sacrifice (Torquemada 1976-83: Vol. 3, 76-81; Sahagún 1953-81: Bk 6, 106, 203). Therefore, it is possible to think that the quincross also alludes to the concept of sacrifice required by both the earth and the sun.

Thus, the quincross depicted on the image of Tlaloc-Tlaltecuhli seems associated with the solar cult in terms of the motif of the solar disk and the concept of sacrifice. These two concepts can also be observed on other stone sculptures, as studied in the following subsections.

6.3.2 Other examples on sculptures

Besides the image of Tlaloc-Tlaltecuhli, the quincross appears on stone sculptures of the solar disk, the sacrificial vessel of Chacmool, and stone boxes.

All seem related to concepts of solar movement and sacrifice, but the aspect accentuated is dependent on the context. Since some sculptures still show some trace of pigment, colour symbolism is also discussed in this subsection.

The solar disks

Some of the monumental sculptures display an elaborated solar disk composed of some decorated rings. For example, on the Aztec Calendar Stone a total of eight triangular solar rays are projecting from the double rings: the inner ring contains twenty calendric signs, and the outer ring consists of a series of the quincross fringed with the motifs of feather (cf. Pasztory 1983: 169-71) (Figure 6.19).

Likewise, on the top of the Stone of Tizoc, a cylindrical stone whose sides display the scenes of the conquest by the Mexica seventh ruler Tizoc, a similar ornate solar disk with a ring of the quincross also fringed with feathers is depicted (Pasztory 19893: 147-50; Townsend 1979: 44-5) (Figure 6.34). Thus, it can be concluded that the ring of the quincross represents the sun, and that each quincross itself embodies the movement of the sun.

Sacrificial vessel

A series of quincross symbols is also depicted on the sacrificial vessel of the Rain Deity-Chacmool, found a few blocks south of the Templo Mayor (Figure 6.35). The chacmools originated in the Early Postclassic and known from Tula and Chichén Itzá; they take the form of a reclining figure holding a vessel for offerings on his chest (Miller & Taube 1993: 60). The Mexica chacmools represent the deity or impersonator of Tlaloc, but their iconographic details vary (Pasztory 1983: 173). As the Rain Deity-Chacmool displays some Toltec iconographic characteristics, such as, the trapeze-and-ray headdress and an image of Tlaloc-Tlaltecuhltli (without quincross) carved with aquatic motifs at the bottom, the figure is believed to represent a Mexica personage dressed in Toltec finery, offering Mexica sacrifices to the Toltec rain god Tlaloc, seated over the Toltec earth (Pasztory 1988: 295-6). Thus, by using the visual form of a Toltec type of sculpture, the image of the Rain-Deity Chacmool can reinforce the continuity of ritual practice (Pasztory 1988: 296).

Normally the Mexica sacrificial vessels have human hearts on the edge and a solar disk with a calendric glyph Four Movement in the centre and an earth monster on the bottom, all of the motifs that symbolize the mission of the Mexica warrior state in acquiring human sacrificial victims for the sun (Pasztory 1988: 195-6) (Figure 6.36). The vessel of the Rain Deity-Chacmool also shows human hearts on the edge, but there is an abstract facial emblem of Tlaloc inside the vessel instead of a solar disk (Pasztory 1988: 295). Therefore, a series of the quincross symbols depicted around the sacrificial vessel may serve to replace the solar disk. In this case, however, the concept of sacrifice may be included, as in the case of Tlaloc-Tlaltecuhтли, because the vessel itself received offering of sacrificial blood and hearts.

Stone boxes

The stone boxes have no precedents in pre-Mexica cultures and are thought to have been stone copies of wooden prototypes (Pasztory 1983: 247). These boxes have had quite varied functions: containers for the ashes of the aristocratic dead, hearts from ritual sacrifices, thorns used in drawing blood, or assorted offerings (Pasztory 1983). Likewise, the iconography of the boxes varies, but in most cases display a figure of Tlaltecuhтли at the bottom (Pasztory 1983).

At least three stone boxes show their sides covered with the quincross motifs, but without the Tlaltecuhтли figure at the bottom. Their provenances and other detailed information are unknown. Two of them bear some date glyphs. The first box has a lid ornamented with a glyph of the royal headdress, which is the name of Motecuhzoma II, inside and a date glyph Eleven Flint on the top, and a date glyph Five Serpent is depicted at the bottom of the inside of the box (Serra Puche & Castillo Mangas 1992: 209-10; Pasztory 1983: 247-8; Seler 1992: 100-1) (Figure 6.37). The date Eleven Flint corresponds to the year 1516, which was during his reign (1502-20 A.D.). Seler (1992: 98, 101) suggests that the other date Five Serpent is the fifth day of the first Tonalamatl section beginning with the day One Crocodile, the section which is presided by the pair of the creator deities Tonacateuhтли and Tonacacihuatl, and by extension the date designates the earth, similarly to the other boxes that display an image of Tlaltecuhтли at the

bottom. It is assumed that this box served for the ruler's personal use or funeral box, or to keep auto-sacrificial tools (Serra Puche & Castillo Mangas 1992; Seler 1992: Vol. III, 100-3). The sides of the box contain a total of eight quincross symbols fringed with the motifs of feather, the elements which are same as the solar rings studied above. Thus, regardless of the usage, the first box seems to commemorate the political and religious power of Motecuhzoma II, the idea which is represented by the whole cosmos consisting of the solar disk and the symbol related to the earth.

The second box lacks its lid, but each side of inside the box is decorated with a year bearer glyph, Four Rabbit, Four Reed, Four Flint, and Four House, representing the four directions (Baquedano 1992: 55) (Figure 6.38). There is another glyph One Crocodile inside at the bottom, the glyph which is assumed to imply the same function as the case of the first box. Same as the first box, the eight quincross symbols are fringed with the motifs of feather. This second box itself may have been a representation of the five directions (four calendric glyphs and the symbol of the earth at the bottom) marked by the solar movement.

The third box lacks its lid and does not show any glyphs (Boone 1992: 350) (Figure 6.39). On the sides it displays a total of sixteen quincross also fringed with the motifs of feather.

In this way, a series of quincross symbols on the stone boxes may have the same symbolism as the solar ring, namely, the sun and its movement. In addition, in combination with the calendric glyph representing the earth at the bottom, the box itself could embody the dynamic cosmos as a whole.

Colour symbolism

On the quincross decorations of the first stone box, the red and blue pigments are still observable: the frame and dots are painted in red and the background inside the frame is blue (Serra Puche and Castillo Mangas 1992: 209). Likewise, According to Sieck (1942), the colours of the quincross on the Aztec Calendar Stone can be reproduced to be red (frame and dots) and green (background). This combination of the colours are almost the reversal of the Teotihuacan quincross—green frame, blue dots and red background—, a fact which implies the

Mexica incorporated not only the morphology but also the traditional set of colours attached to the quincross (cf. Mural paintings of Tetitla, in de la Fuente 1995: 278-80). In addition, this combination can be compared with that of the Aztec square year sign usually painted in red and blue, the colours included in the linguistic senses of *xihuitl*.

6.3.3 Shield motif of Huehueteotl-Xiuhtecuhtli

In the codices several deities appear carrying a shield with quincross design: Huitzilopochtli, Otontecuhtli (the god of Otomí), Atlahua (the god of water), and Cinteotl (the god of maize) (Siméon 1992: 42, 365; as for the figures, Sahagún 1953-81: Bk 1; Primeros Memoriales: fols. 261r, 262r, 265r Codex Borbonicus: pls. 27, 36; Telleriano-Remensis: 25r, 27r, 27v, 28r, 28v). However, the shield of the quincross with the same colour combination is only attached to Huehueteotl-Xiuhtecuhtli. Huehueteotl, the old god of fire (one of the representations of Xiuhtecuhtli), with the back shield of the quincross has as a minor role in the *veintena* ritual scenes of the months of Toxcatl, Miccailhuitontli, and Tititl, in the Codex Borbonicus (pls. 26, 28, 36) (Figure 6.40). Similarly, in the vignette of Primeros Memoriales (262v), Xiuhtecuhtli carries the quincross shield with blue dots and yellowish orange background, in addition to *xiuhcoanahualli*. The corresponding vignette in the Florentine Codex displays Xiuhtecuhtli with the quincross shield with yellowish orange background, but the colour of the dots is too faded to identify. It is said that Huehueteotl-Xiuhtecuhtli carries the shield with pieces of turquoise and mirror-stone (Sahagún 1953-81: Bk 1, 30). Therefore, the blue dots and frame may be of turquoise mosaic, and the red background, of mirror-stone.

Taube (2000: 309-16) explains that the quincross is a symbol of fire as well as centrality, by referring to the divine hearth called *xiuhtetzaqualco* meaning 'turquoise enclosure'. It is told in the myth that the *xiuhtetzaqualco*, located in Teotihuacan, is the place from which the present sun was born (Sahagún 1953-81: Bk 1, 84). This turquoise enclosure is also identified with the place called

tlalxicco or ‘the navel of the earth’ where Huehuetēotl-Xiuhtecuhtli (as a supreme deity) resides (Sahagún 1953-81: Bk 6, 88-9). A possible graphic depiction of the *xiuhtetzaqualco* can be seen in the plate 46 of the Codex Borgia that describes the ritual of the drilling of new fire (Taube 2000: 316-7) (Figure 6.20b). Here the *xiuhtetzaqualco* is described as a burning anthropomorphic hearth rimmed by a turquoise mirror, all of which is surrounded by four fire serpents (Taube 2000: 316). The four serpents are assumed to represent the directional colours of blue, yellow, white, and red, and thus mark the central hearth as the *tlalxicco* world axis (Taube 2000: 317).

By extension, the four Xiuhcoatl occurring on the rim of Toltec-style back shields carried by the warrior figures probably also define the central pyrite mirror as the world centre (Taube 2000: 317) (Figure 6.41). Thus, it is assumed that, based on the concept of this Toltec back shield, the quincross shield of Huehuetēotl-Xiuhtecuhtli (as the fire god and the supreme deity) was designed to connote the symbolism of fire and the five directions as the embodiment of the whole cosmos, at the centre of which the sun was created. In this case, the four Xiuhcoatl are replaced by turquoise dots, possibly via phonetic association of the word *xihuitl*.

6.3.4 Summary

Although in traditional Mesoamerican iconography the quincross can symbolize south, water, fire, and the five directions, in Mexica graphic expression, the aspects associated with the sun, namely, fire and five directions, are most accentuated. The quincross symbols on the body of Tlaloc-Tlaltecuhltli and on the vessel of the Rain Deity-Chacmool represent the sacrificial aspect of the solar cult as well as the solar movement; a series of quincross symbols on the solar disk symbolizes the sun itself, and the quincross designs on the stone boxes possibly indicate similar solar symbolism but as part of the cosmos that consists of the sun

and the earth⁹. Likewise, the shield design of Hueheteotl-Xiuhtecuhtli represents the centre of the world where the sun was created.

It is possible that the quincross remained an elite and enigmatic symbol, but there were occasions in which the public witnessed the symbol and associated it with the word *xihuitl*. For example, the monumental sculptures, such as, the Aztec Calendar Stone and the Stone of Tizoc may have been observed by people in the capital, and the Rain Deity-Chacmool would have been used as a receptacle of the sacrificed heart and blood in ritual. Likewise, Hueheteotl-Xiuhtecuhtli with the quincross shield may have been witnessed in the *veintena* rituals repeatedly. The major difference from other symbols is its small size and the fact that its symbolism dependent on contexts; it does not form a divine image such as *Xiuhcoatl*, nor is it a glyph like the year signs. At least for those who understood the mythological associations, it should not have been difficult to read the quincross as *xihuitl* by relating it to the linguistic characteristics of *xihuitl*, namely, solar movement, fire, turquoise, and the set of colours.

6.4 Phonetic glyph ‘*xihuitl*’

The phonetic glyph ‘*xihuitl*’ indicates a glyph composed of five blue dots in the form of a quincross, but the four corner dots are attached to the central larger dot, in which appear two red ovals on both sides (Figure 6.1e). This glyph is clearly a Mexica invention, but a sign similar to the central portion, a dot with two ovals inside, was employed in Teotihuacan mural painting as an aquatic or marine symbol (A. Miller 1973: 165; Langley 1986: 271) (Figure 6.42). The combination of colours of this sign is blue ovals, red background and green ring, which is almost a reversal of the Mexica colour pattern, although the Mexica glyph does not distinguish the outer ring.

In Mexica iconography, this phonetic glyph appears only in the early Colonial codices as a phonetic glyph representing *xihuitl* and as a head ornament

⁹ It has also been pointed out that the quincross symbols on the solar disk symbolize 52 years (Graulich, personal communication 2007).

of the figures related to Quetzalcoatl. In the following subsections, the symbolism and functions of this glyph are examined in each context comparing with other similar glyphs.

6.4.1 Phonetic glyph

The phonetic glyph for xihuitl is employed only for place names in the Codex Mendoza (fol. 7v & 23r for Xiuhteppec; 13r & 38r for Xiuhhuacan; 20v for Tlazoxiuhco) (Figures 6.1e, 6.43). In these cases, the phonetic glyph does not represent the idea of the message to be expressed, but just conveys the verbal (pronunciational) form of the message (Prem 1979: 112). Therefore, which aspect of the concept of xihuitl is represented in this glyph cannot be analysed.

However, by comparing other similar phonetic glyphs, namely *chalchihuitl* (jade) and *tezcatl* (mirror stone=obsidian), it may be possible to examine its morphology and symbolism (as for obsidian, see Heyden 1988) (Figure 6.44). The glyphs for *chalchihuitl* and *tezcatl* take a quincross form similar to the xihuitl in the Codex Mendoza. *Chalchihuitl* has red and green colours fringed with a feather-like ring motif (fols. 3v, 4v, 6r, 7v, 17v, 41r, sometimes without four surrounding dots), and *tezcatl* uses black and red (fols. 20v, 27r, 29r, 42r). Both *chalchihuitl* and *tezcatl* glyphs seem to have been employed since before Mexica times and appear in the Mixteca-Puebla codices, such as the Borgia (pls. 10, 31, 34, 37, 38, 46, 49) and Laud (pl. 23). On Mexica sculptures, the glyph *chalchihuitl* is mainly attributed to the water-fertility deities and the sacrificial stones, and symbolizes the 'precious water', 'blood (human offering)' and by extension 'life' (Miller & Taube 1993: 101-2, Pasztory 1983: 234-40). Obsidian was regarded as a sacred stone and linked with the concept of divinity, and the glyph *tezcatl* often represents Tezcatlipoca and his smoking mirror (Heyden 1988: 222; Nicholson 1954: 167). Considering the common attribute of jade and obsidian as precious stones, the xihuitl quincross-type glyph as turquoise stone also symbolizes preciousness.

It should be noted that the turquoise year sign sometimes takes a form similar

to the phonetic glyph, possibly due to the phonetic association and also the concept of the solar movement embodied in quincross (cf. *Primeros Memoriales* fol. 254r) (Figure 6.28). Likewise, in the ethnographic and history section of the Aztec style codices, the *ilhuitl* (day or feast) glyph is described in the form of a quincross-type glyph, probably because of the association with the movement of the sun (*Codex Mendoza*: fol. 57r; *Telleriano-Remensis*: fols. 1v, 32v; *Vaticanus A*: fol. 46r). The *ilhuitl* glyph seems totally a Mexica invention, and cannot be observed in other codices (Figure 6.45). Thus, the concepts of preciousness and of precious stone embedded in the quincross-type glyph appear to have been incorporated by the Mexica from the precedent or coexisting cultures, whereas the incorporation of the concept of the quincross as solar movement belongs only to the Mexica.

6.4.2 Headband of Quetzalcoatl

The same phonetic glyph ‘xihuitl’ was also employed as a turquoise head ornament carried by figures related to Quetzalcoatl. The figures that appear with this ornament are the deities Quetzalcoatl, Ehecatl, and Xolotl, and their impersonators (Figure 6.46). Quetzalcoatl literally means ‘feathered serpent’, and its graphic representation first appeared carved on the Temple of Quetzalcoatl in Teotihuacan (c. third century A.D.) (Miller & Taube 1993: 141). It is interpreted that in Classic Mesoamerica, this entity is a synthesis of opposites, and that Quetzalcoatl combines the destructive and germinal powers of the earth (the serpent) with the fertile and ordering forces of the heavens (the bird) (Florescano 1999: 1). The feathered serpent and Tlaloc in the Ciudadela of Teotihuacan have also been interpreted as symbolizing heaven and earth and possibly the solar and telluric rulers, as in the Postclassic Central Mexican cultures (Graulich 2001: 24-5; 2002: 109). However, after the fall of the Classic kingdoms, in Postclassic cities such as, Xochicalco, El Tajin, Cacaxtla, Tula, and Chichén Itzá, the figure of the feathered serpent became associated with the political power instead of fertility and the renewal of vegetation, as is claimed for the Classic period

(Florescano 1999: 4-5). Especially in the Toltec city of Tula, Quetzalcoatl acts as a conquistador of vast provinces, a legendary founder of kingdoms and model of priestly virtues (Florescano 1999: 5). Then after the fall of Tula, the symbolism of the Quetzalcoatl figure became more complex, and its ancient meanings were constantly reinterpreted and incorporated into other traditions (Florescano 1999). For example, in Late Postclassic Central Mexican religion, the multiple and ubiquitous figure of Quetzalcoatl is assimilated with Ehecatl or the wind god, the rich symbolism of Venus, the dog deity Xolotl as his twin, the cults ritualizing the renewal of vegetation, and the myths of royalty and eternal life. Thus Quetzalcoatl blends with these diverse entities and changes his symbols and representations (Florescano 1999).

In the Mexica visual representation, the god and impersonator of Quetzalcoatl was decorated with several kinds of turquoise ornaments such as a serpent mask, spear thrower, back shield, and earplugs. (Sahagún 1953-81: Bk 12: 11-2). The headband is not included here, but it seems that turquoise objects are diagnostic ornaments of this deity. The figures related to Quetzalcoatl with turquoise headbands appear in the *trecena* section of the codices, presiding over the days One Jaguar (as Ehecatl), One Deer (as priest impersonator), and One Vulture (as Xolotl) (Borbonicus: pls. 3, 16; Telleriano-Remensis: fols. 8v, 10r, 19v; Vaticanus A: fols. 16r, 21r, 27r), and in the *veintena* section, these figures take minor parts in the rituals as, of the months Etzalcualiztli, Panquetzaliztli, and Tititl (Borbonicus: pls. 26, 27, 34, 36). Likewise, Quetzalcoatl with headband appears as the creator of the present human beings and as the god of time who presides, with Tezcatlipoca, over the second half of the fifty-two year cycle in plate 22 of the Borbonicus (Anders, et al. 1991: 188-9) (Figure 6.13a). The turquoise head ornament does not seem to emphasize any particular aspect of Quetzalcoatl. The figure of Quetzalcoatl with this head ornament cannot be found in other codices or on sculptures. However, from the sacred precinct, at least three wooden headbands in this style covered with turquoise mosaics (c. 5 cm, diameter) have been recovered (cf. García Moll, et al. 1990: 177; Baquedano 1992: 49) (Appendix 2-1.11.2, 3, 4). These turquoise ornaments might have been worn by the impersonators or the figures of Quetzalcoatl in the actual ritual

scenes.

In view of the limited number of representations, the turquoise head ornament is not believed to be an indispensable decorative element for Quetzalcoatl. However, considering its attribution to this divine figure in general terms, regardless of his aspects, this headband decoration may represent the basic and traditional aspect of Quetzalcoatl as water-fertility deity. From the most ancient times until the Mexica times, the meaning of the feathered serpent seems to have been associated with vegetal renewal, because the green plumes of the quetzal bird which covered the serpent's body were a symbolic representation of the time of year when the dry season was substituted by the greening of vegetation covering over the earth represented by the rough skin of the serpent (Florescano 1999: 147). In the case of the mural paintings of Cacaxtla, however, the feathered serpent is thought to symbolize the day and dry season (Graulich 2001: 21-2). This concept of temporal cycle may be reflected by the morphology of the glyph as quincross, as well as by the linguistic category of xihuitl that contains a sense of temporal cycle. In addition, the concept and colour of grass also match the linguistic concept of xihuitl.

6.4.3 Summary

The major difference of this phonetic glyph from the other symbols is that the others had already established their symbolic roles prior to Mexica times, and were incorporated later into Mexica graphic representations by re-arranging their symbolism and functions. The glyph 'xihuitl' was innovated based on the Nahuatl linguistic category of xihuitl by reinforcing the aspects of temporal cycle and turquoise through the form of the blue quincross. This phonetic glyph is the only graphic example that can directly and linguistically represent the whole concept of the word. For this reason, using the turquoise year sign in a form similar to the phonetic glyph becomes reasonable. However, the contexts where the phonetic glyph was employed seem limited to a few codices, and so it is supposed that this glyph was employed only among elites, and that its symbolic

and glyphic role in a wider context was not established.

6.5 Summary and discussion

In this summary section, the iconographic representations of xihuitl as a category are discussed according to the following two topics. First, the correlations among the representations are presented, and second, comparison is made with the linguistic category analysis of the previous chapter.

Correlations among the representations

The iconographic representations comprise two components, namely symbolism and morphology (Chart 1). The symbolism of each graphic representation corresponds to the senses of the linguistic category of xihuitl. The association of the symbolism and senses are; the solar/temporal cycle (square year sign, turquoise year sign, quincross, phonetic glyph), the sun itself (trapeze-and-ray, quincross), fire (trapeze-and-ray, quincross), war/sacrifice (trapeze-and-ray with grass on Xiuhcoatl, quincross), preciousness (phonetic glyph, turquoise year sign), turquoise (turquoise year sign, phonetic glyph), comet (Xiuhcoatl as a whole), and soul (Xiuhcoatl as a whole). The colour combination of blue, green, red and yellowish orange observed in all the iconographic representations also matches the colours connoted in the linguistic category. Because this iconographic category is composed on the basis of the phonetic association, the iconographic symbolism and linguistic senses do not differ in many ways. However, iconographic representations are mainly used in religious and political contexts, namely codices and sculptures, where the aspects related to the solar cult and to the temporal cycle marked by the authorized rituals seem strongly reinforced. Thus, these two concepts related to the solar cult and the temporal cycle become the central senses of the category of symbolism.

Based on the morphological traditions, the category of iconographic representations consists of two major symbols, namely the trapeze-and-ray sign and the quincross, both of which were traditional Mesoamerican symbols from the

Classic period. The trapeze-and-ray sign forms part of the body of Xiuhcoatl and became the base of the Aztec square year sign, and the blue dots of the square year sign became the turquoise year sign. From the quincross derived the phonetic glyph and a variation of (quincross-style) turquoise year sign, and the colour combination of the quincross may have influenced that of the phonetic glyph and the square year sign. The traditional two symbols act as central models, and all the morphological derivations can be interpreted as the image schema extensions. In addition, the symbols attributed exclusively to the Mexica are proposed to have been extended via category chaining. The quincross-style turquoise year sign in particular seems the newest and least-employed symbol; therefore its usage is assumed not to have been well stabilized.

Each of the categories of morphology and of symbolism can be divided into two major groups, but the members of each category differ slightly (Chart 1). The category of morphology mainly consists of the two traditional symbols, the trapeze-and-ray sign and the quincross. On the other hand, in terms of symbolism, the category is composed of: 1) one with the trapeze-and-ray sign, the quincross and Xiuhcoatl, all these of which contain symbolism related to the solar cult; 2) the other with the square year sign, the turquoise year sign, the phonetic glyph, and also the quincross, all of which are associated with the concept of temporal cycle. The quincross is included in both categories. This implies that the Mexica experienced and consumed the iconographic tradition of morphology and the tradition of symbolism in different ways. I propose that this difference is attributable to the influence of linguistic over iconographic symbolism. It is expectable that traditional or foreign graphic symbols would have shifted in some ways in form, function and symbolism during the process of integration into Mexica iconography. In this process, at least some of the graphic symbols changed based on linguistic categorization by the act of naming the symbols in Nahuatl. Thus, only part of the original symbolism survived or new symbolism was generated based on the Nahuatl linguistic associations.

Linguistic category vs. iconographic category

The major differences between the iconographic and linguistic categories are their

components, cultural-historical contexts, and functions. Regarding the components, the iconographic category consists of morphology and symbolism, whereas in the linguistic category only the senses become crucial factors for the categorization. The linguistic categories are always based on the phonetics (pronunciations). On the other hand, without any background context, the same iconographic representation can have several appellations depending on contexts; for example, the same sign can be called the trapeze-and-ray sign, Mixtec year sign, and the tail of Xiuhcoatl, and possibly 'xihuitl' and '*meyotl*' in Nahuatl language. If iconographic representations are grouped according to their appellations (pronunciations) as in the case of linguistic categorization, this iconographic category naturally covers various morphologies, and so their contexts that affect their symbolism should be carefully selected (e.g. in the case of graphic representations of xihuitl and *meyotl*, they look similar but their related divine figures are different).

In searching for the roots and the process of shifting, the iconographic tradition can be traced cross-culturally and diachronically, but especially when there are few written records as is the case with Nahuatl, tracing is very difficult in a linguistic environment that is limited to the cultures of those who speak the target language. Therefore the employment of pre-Mexica graphic symbols can be considered as the active objectification of traditions, but it is difficult to see such experience in the linguistic context. In other words, the cultural and historical context of the visual representations does not always correspond to that of the linguistic context.

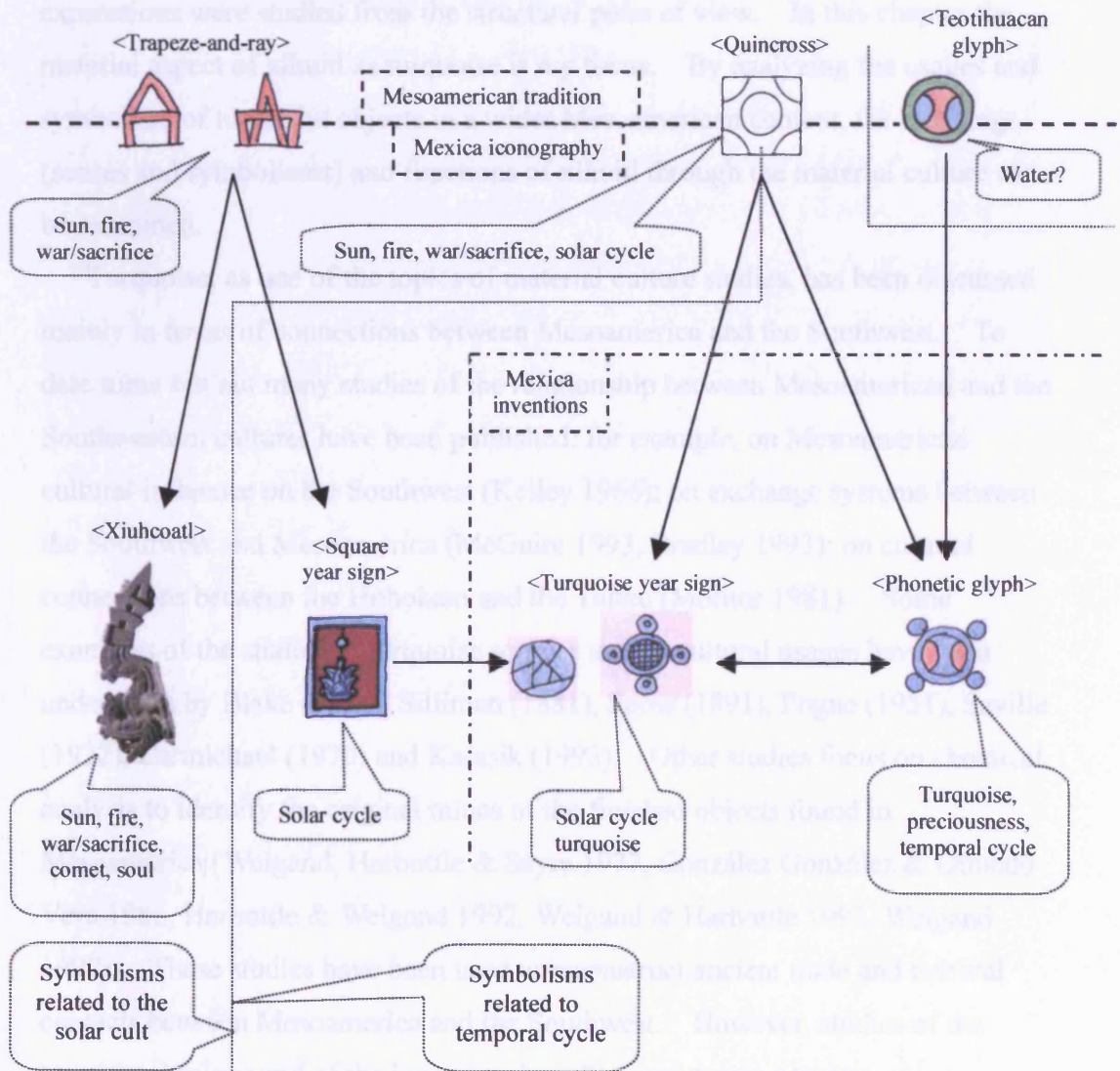
As for the functions, iconographic expression is, in a way, a (graphic) record, and thus the semantic relationship among different senses can be expressed precisely the way the Mexica wanted to express them (cf. Boone 1994b: 6). For example, the overlapped senses such as celestial fire and solar aspect, expressed in Xiuhcoatl, can be effectively and directly represented in the iconographic expression. Likewise, the colours and morphology of the iconographic representations often embody the combinations of the linguistic senses as a gestalt, such as the turquoise year sign (blue + turquoise + year + phonetics), trapeze-and-ray sign (red + fire + year + sun), and the quincross (red + blue +

solar movement + temporal cycle). In addition, depending on the contexts, the graphic images sometimes represent a concept beyond the linguistic category. For example, Xiuhcoatl depicted in downward movement can also embody the flow of political and religious energy. On the other hand, the linguistic senses can also function as a gestalt concept, in a different way, when the spoken language is accompanied by other performances such as music, dance and rituals (cf. Chapter 5). It is supposed that, as media of expression, language and visual representations function differently but can also be complementary in conveying messages.

However, the context-dependency and the metaphoric way of category expansion are the common characteristics of both expressions. Both the graphic symbols and the linguistic word of xihuitl, without any cultural and historical contexts, usually cannot indicate any specific symbolism or sense, because symbolism or sense emerges from the background cultural contexts as well as from other graphic motifs or linguistic phrases that appear with them. For example, the trapeze-and-ray sign on Xiuhcoatl can be called 'xihuitl', but a similar sign appearing in the headdress of the water-fertility deities becomes 'meyotl', belonging to a different category. Likewise, the way of expanding the categories is based on the metaphoric associations. For example, as mentioned before, in spite of the restricted employment of the turquoise year sign and the phonetic glyph only in the post-Conquest Mexica codices, their morphology and symbolism were not completely new inventions but derived from traditional symbols; it is also possible that their forms and symbolism were mutually influenced.

Language and visual representations function differently, which means that they can express different aspects of the same concept (Boone 1994b: 9-13). However, the metaphoric associations based on the human experience always play an important role in forming and expanding both linguistic and iconographic categories.

Chart 1 Category of the iconographic representations of xihuitl
 (Arrows indicate the directions of morphological and symbolic influence.)



Chapter 7 Material expression: Meanings and functions attached to turquoise

In the last two chapters the categories of xihuitl in linguistic and iconographic expressions were studied from the structural point of view. In this chapter the material aspect of xihuitl as turquoise is my focus. By analyzing the usages and symbolism of turquoise objects in a wider Mesoamerican context, the meanings (senses and symbolisms) and functions of xihuitl through the material culture can be examined.

Turquoise, as one of the topics of material culture studies, has been discussed mainly in terms of connections between Mesoamerica and the Southwest. To date some but not many studies of the relationship between Mesoamerican and the Southwestern cultures have been published: for example, on Mesoamerican cultural influence on the Southwest (Kelley 1966); on exchange systems between the Southwest and Mesoamerica (McGuire 1993, Bradley 1993); on cultural connections between the Hohokam and the Toltec (Molitor 1981). Some examples of the studies of turquoise sources and its cultural usages have been undertaken by Blake (1858), Silliman (1881), Snow (1891), Pogue (1951), Saville (1922), Carmichael (1970) and Karasik (1993). Other studies focus on chemical analysis to identify the original mines of the finished objects found in Mesoamerica (Weigand, Harbottle & Sayre 1977, González González & Olmedo Vera 1986, Harbottle & Weigand 1992, Weigand & Harbottle 1993, Weigand 1997). These studies have been used to reconstruct ancient trade and cultural contacts between Mesoamerica and the Southwest. However, studies of the cognitive background of the incorporation of turquoise into Mesoamerican cosmivision, or comparative studies of the use of jade and turquoise have not been undertaken.

This chapter covers the following three points: 1) where turquoise originates; 2) how it was brought to and used in Mesoamerica; 3) why the Mexica preferred turquoise to express their own cosmivision. This information will be presented in three sections. The first section comprises three topics regarding the cultural background: the sources of turquoise, the history of turquoise trade in

Mesoamerica and the Southwest, and the current state of surviving examples of Mesoamerican turquoise objects that can be employed for analysis. The second section examines the traditional Mesoamerican attitude toward turquoise. That is, this section analyzes turquoise objects produced in Mesoamerica, along with their contexts, functions and meanings in order to discern the cognition traditionally attached to turquoise in Mesoamerica. The meanings and functions of turquoise in the Southwest are also considered for comparative purposes. The third section deals with the Mexica use of turquoise by focusing on the turquoise objects recovered from the offerings of the Templo Mayor. These turquoise objects and their use are studied from three points of view: in contrast with the use of turquoise in other Mesoamerican cultures; in contrast with the concept of *chalchihuitl* (jade, greenstone) among the Mexica; and in terms of the state of conceptualization of turquoise among the Mexica elite and in other Mesoamerican regions. In this comparative way, the process by which the Mexica incorporated turquoise into the 'xihuitl' category is elucidated.

7.1 Turquoise in Mesoamerican history

In Prehispanic Mesoamerica turquoise along with jade was regarded as one of the most precious gemstones. Some jade mines existed in Guatemala (Bishop & Lange 1993), which is within the Mesoamerican cultural confine, and jade was treasured from the time of the Olmecs (1000 B.C.), the earliest civilization of Mesoamerica (Solís 1998: 15-29)¹. On the other hand, so far there are no reported turquoise mines in Prehispanic Mesoamerica (Harbottle & Weigand 1992: 56). Turquoise was first exploited and worked on a large scale from about A.D. 700 by the Classic Chalchihuites culture, which flourished in the present state of Zacatecas, Mexico, by importing the ore from the Cerrillos area in New Mexico. Although turquoise gained popularity among the Mesoamerican and

¹ Garber, et al. (1993: 214) report that from the Burial 40 of Chalcatzingo, Morelos (Middle Formative, 1500- B.C.) nearly 100 tiny turquoise mosaic fragments were recovered adjacent to the skull.

Southwestern cultures, especially from the Classic period onward, it is generally accepted that the consumption of turquoise reached its peak in the Postclassic Nahua culture of the Central Valley of Mexico (Harbottle & Weigand 1992, Karasik 1993, Weigand 1997) (Figure 7.1).

In this section, first, the known sources of turquoise in Prehispanic times are summarized. Second, the history of turquoise in Mesoamerica and the Southwest is studied, focusing on the economic and social relationships between the two areas. Finally, the surviving examples of turquoise objects found so far and attributed to the Prehispanic Mesoamerican cultures are reviewed in consideration of a possible sampling for this study.

7.1.1 Sources

In speaking of the ancient mines and the Prehispanic Mesoamerican uses of turquoise, Weigand, Harbottle and Sayre (1977: 16) differentiate 'chemical turquoise' from 'cultural turquoise'. Chemical turquoise is defined by chemical components of ore, and cultural turquoise or 'turquoises' includes, in addition to chemical turquoise, other copper-bearing blue and green minerals, such as malachite, azurite, and chrysocolla (cf. Pellant 1992). These copper-bearing minerals form in the altered and/or oxidized regions of copper deposits and often occur together (Pellant 1992: 105, 159). The ancient people treasured cultural turquoise as well as chemical turquoise, and it is assumed that the Nahuatl term 'xihuitl' as turquoise indicated 'cultural turquoise'. Thus, in this study, 'turquoise mosaics' cover 'mosaics of cultural turquoise' because these copper-bearing minerals were often employed together on the same object.

Chemical turquoise mines are concentrated in the so-called Southwestern region, which includes the present North American states of Arizona, California, Colorado, Nevada, New Mexico and Utah, and the Mexican states of Sonora, Coahuila, Chihuahua, Baja California, San Luis Potosí, and Zacatecas. Weigand and Harbottle (1993) analyzed more than 2,000 pieces found at twenty-eight archaeological sites in Mesoamerica and the Southwest and collected samples

from more than forty turquoise mining areas in the Southwest by conducting neutron-activation analysis, which specifies the compositional pattern of the mineral by bombarding a sample with a beam of neutrons. Although recent mining has frequently disturbed the direct evidence for ancient mining, they posit ancient extraction activities in thirty-one source areas in those states mentioned above (Weigand & Harbottle 1993: 163; Weigand 1997: 31)².

In some northern Mesoamerican sites, the remains of some ancient mines of cultural turquoise (excluding chemical turquoise) and of copper have been investigated, such as, Alta Vista, Concepción del Oro and Ameca. It is known that the Chalchihuites people of Alta Vista first started mining malachite, azurite, other minerals and copper nearby and later undertook importing chemical turquoise from the Cerrillos area in exchange for copper (Harbottle & Weigand 1992: 58). In these northern Mesoamerican areas adjacent to the Southwestern cultures, cultural turquoise was obtained more easily than jade, which was used in ancient times but procured from much farther south. Chemical turquoise became especially preferred by the northern Mesoamerican people, because 'it is a much easier stone to cut and shape' than jade (Weigand & Harbottle 1993: 161). In this way the use of cultural turquoise began in the area of the northern limits of Mesoamerica.

Although the mining forms varied from place to place, the basic mining techniques of these ores, including chemical turquoise, are thought to have originated in the Classic Alta Vista site (Weigand 1997: 32). Most of the raw turquoise mineral occurs in deposits of hard rock, and those deposits close to the surface were the first to be exploited by digging simple pits or quarries (Harbottle & Weigand 1992: 62). Then, when turquoise in these shallow deposits was

² The thirty-one turquoise sources are specified as follows: Sleeping Beauty, Bisbee, Mineral Park, Canyon Creek, Courtland/Gleeson, in Arizona; Azure/Tyrone, White Signal, Old Hachita, Jarilla Mountains, Cerrillos Mountains, in New Mexico; La Jara, Leadville, Villa Grove, in Colorado; Halloron Springs, Last Chance, Quartz Mountain, in California; Crescent Peak, Warm Springs, New Pass Range, Grass Valley, Crescent Valley, in Nevada; Cananeita, Campo Frio, Arroyo Cuitaca, Los Campito, El Verde, in Sonora; Beta Perea, Santa Rosa, in Coahuila; Salinas in San Luis Potosí; Mazapil, Mulatos, in Zacatecas (Weigand & Harbottle 1993: 162-3; Weigand 1997: 29). However, the turquoise minerals from Zacatecas, San Luis Potosí and Coahuila are of bad quality and were not exploited intensively (Weigand 1997: 29).

exhausted, actual mines were begun (Harbottle & Weigand 1992). The simple shaft-chamber mines were found in large numbers at the Hachita complex, in New Mexico, but there are some mines that expanded into huge open-faced pits, such as those at Mount Chalchihuitl in the Cerrillos area, Azure/Tyrone, and Old Hachita, all in New Mexico (Harbottle & Weigand 1992: 62).

The development of mining techniques did not occur alone but was promoted by the surrounding conditions. Ancient miners had to endure hard work by swinging stone mauls at the unyielding rock surface to extract the mineral. The work must have required 'a system of support from a sponsoring social and physical nexus that would motivate them to travel long distances, endure arduous treks and conditions, provision them and protect them from predation as far as possible, and offer the ceremonial context for the procurement activity' (Weigand & Harbottle 1993: 165). In other words, it is supposed that in those areas with expanded mines, both the demand for turquoise and for the collateral profits must have been satisfactory enough to establish a cultural-social-economic system that supported the miners. The people of the consuming areas also indirectly stimulated the development of such a system. It is interesting to point out that the major consumption of turquoise always took place in the areas far away from the actual mine, and the largest consumers were the Central Mexicans, far to the south of the mines. The historical process of this trading network that brought turquoise into Central Mexico is examined in the next subsection.

7.1.2 History of turquoise trade in the Southwest and Mesoamerica

The epicentre of consumption of turquoise changed locality over time (Figure 7.1). First, use of turquoise started in the middle Classic period in Alta Vista, Zacatecas, at the northern limit of Mesoamerica; then the centre moved to Chaco Canyon, New Mexico, during the end of Classic and the beginning of Postclassic. In the Early Postclassic the Toltec of Central Mexico established a trade route to the Southwest via La Quemada in Zacatecas, and Casas Grandes in Chihuahua. Finally, in the Late Postclassic the Mexica of Central Mexico, who became the

major consumer of turquoise throughout the history of Mesoamerica, gained power over most of Mesoamerica and controlled the trade system, which also triggered consumption in other regions such as Oaxaca, West Mexico, and Northern Mexico (Figure 7.2).

Classic period

The earliest evidence of turquoise in Mesoamerica was found in burials near Mezcala, Guerrero, dated to 600 B.C., and from shaft tombs near Teuchitlan in Jalisco, 300 B.C. (Weigand 1992: 58). However, the people in the Chalchihuites area of Zacatecas are believed to have been the first Mesoamericans to use large amounts of turquoise during the middle Classic period (100-900) (Weigand 1992). About A.D. 350 large scale mining operations for cinnabar, chert, hematite and blue-greenstones, such as, malachite and azurite began in this region (Weigand, Harbottle & Sayre 1977: 18). Then about A.D. 700 Alta Vista, the major centre of the Chalchihuites culture, started importing raw turquoise in large quantity. According to the outcome of the neutron-activation analysis, the minerals were brought mainly from the Cerrillos region (Weigand 1992: 58).

Alta Vista played four important roles in the early phase of turquoise consumption. First, it acted as the first exploiter of the Cerrillos mines. Weigand, Harbottle and Sayre (1977: 19) support this idea by saying:

Since no complex society was in or very near the Cerrillos zone at this time, it is possible that expeditions formed in Mesoamerica were responsible for the early patterns of exploitation of chemical turquoise from that region.

Also Chalchihuites mining technology seems to have been inherited by the later mines in the Southwest and Mesoamerica (Weigand 1997: 32). Second, Alta Vista functioned as the inventor of beveled-edge mosaic technology. By using this technology, objects covered with processed mosaics could be finished with a smooth surface, as can be seen on the Mixtec turquoise objects from the Postclassic Oaxaca region (e.g. Mixtec masks and shields, Appendix 2: 1.1, 1.3). The tesserae were glued onto the wooden base by a charcoal-chia seed oil mixture called *chaute* applied to their backs (Weigand 1997). Third, Alta Vista played a part in the distribution of turquoise to Central Mexico, especially to Teotihuacan,

the most influential state in Mesoamerica at this time, and after the fall of Teotihuacan, to Cholula, Xochicalco and Tajin (Weigand 1997: 32; Diehl 1983: 154). It is thought that Alta Vista took an intermediary position in the long distance trade of turquoise and other luxury rare resources between Central Mexico and the Southwest, and supported Teotihuacan's economic expansion (Weigand & Harbottle & Sayre: 18-19; Weigand 1997: 32). Fourth, Alta Vista established the ritual use of turquoise. Weigand (1992: 58) asserts that turquoise objects found in Alta Vista were primarily manufactured for ceremonial purposes because turquoise rings, beads, pendants and disk mosaics have been unearthed mainly from the prestige burials.

The associated people in the Chalchihuites' turquoise trade were the Hohokam of Arizona and Sonora, the Mogollon of New Mexico and Chihuahua, and the Anasazi of Arizona, New Mexico, Utah and Colorado (Weigand 1997: 29). It is supposed that there were at least eight sources of turquoise explored under the influence of the Chalchihuites, i.e., Cerrillos and Azure in New Mexico, Gleason/Courtland in Arizona, Halloran in California, Santa Rosa in Coahuila, Salinas in San Luis Potosí, and Mazapil and Mulatos in Zacatecas (Weigand 1997: 29). It is reported that more than 17,000 turquoise fragments have been recovered from workshop contexts at Alta Vista (Diehl 1983: 153).

Late Classic to Early Postclassic period

During the Late Classic to Early Postclassic (A.D. 900-1150), the regional integration in the Anasazi area arose. Chaco Canyon in the San Juan Basin of northwestern New Mexico became the centre of this culture and started to use and monopolize turquoise in large quantity (Weigand 1992: 58-9; Mathien 1993: 28; Fagan 1995: 325-6). They were the first Southwestern people who exploited turquoise mines. Although turquoise does not occur in this area, the Chaco people obtained access to and controlled the Cerrillos mines, about 100 miles to the east (Fagan 1995: 325-6). The great underground pit at Mount Chalchihuitl in Cerrillos was begun during this period (Weigand, Harbottle & Sayre 1977: 22). Especially during A.D. 975-1130, the ceremonial use of turquoise in Chaco Canyon increased, and archaeological finds of turquoise from this period are

estimated from 200,000 to 500,000 pieces (Weigand 1992: 59; 1997: 30). The amount of turquoise recovered from elaborate burials and *kivas* (ceremonial structures) attested the ceremonial use of turquoise on a large scale unprecedented in the Southwest. There are no such quantities of turquoise recovered from other Anasazi sites outside of Chaco Canyon during this period (Weigand 1992: 59; Mathien 1993: 45). By this time the beveled-edge technology had become widely known in the Southwest, and Chaco began to trade only processed turquoise mosaics in exchange for Mesoamerican high-status commodities such as macaws and copper bells (Weigand 1992: 52; Weigand & Harbottle 1993: 173). The presence of Cerrillos turquoise mosaics processed by the Chacoans have been confirmed from the objects found in Guasave in Sinaloa, Ixtlán del Río in Nayarit, Zacoalco and Las Cuevas in Jalisco (Weigand 1997: 30). Thus, Chaco Canyon assured the Southwestern procurement and distribution of turquoise (Weigand & Harbottle 1993: 173), and their control of turquoise lasted until the twelfth century. Concomitant with the Chaco expansion, the Toltec state of Tula (A.D. 900-1200) was established in the Central Valley of Mexico, and developed the trade network extending from the Southwest to southern Mesoamerica.

La Quemada, the fortress community that is located several hundred kilometers south of Alta Vista, took over the intermediary role which Alta Vista used to play in the trade connecting Chaco with Tula (Diehl 1983: 154). Diehl (1983) argues that La Quemada was built and occupied by both the Toltecs and the Caxcan Indians, allies of the Toltecs and part of the agricultural Chichimec group. The turquoise shields found at Chichén Itzá contain Cerrillos turquoise and exhibit Central Mexican art style, and thus serve as good examples of this long-distance trade network (Diehl 1983: 154; Kalasik 1993: 68, Weigand 1997: 30) (cf. Appendix 2: 1.3.28-31).

Whereas the Mesoamerican demand for turquoise as a precious material kept expanding with the rise of the Toltecs, there was a shift of consumers in the Southwest. Formerly, turquoise minerals were limited to religious occasions and to the ruling elites, but after the fall of Chaco, many of lower social status also started wearing turquoise jewelry. This increasing demand for turquoise both in Mesoamerica and the Southwest created pressure to open more sources during the

mid thirteenth century or the Late Postclassic (Weigand 1992: 60). Then Casas Grandes in Chihuahua (1060-1340) gained its control over turquoise manufacturing and trading. Casas Grandes exploited many new sources, such as those in the Mojave Desert in southern Nevada and in the southwesternmost part of New Mexico, Death Valley in California, Baja California, Colorado and Arkansas, as well as the old Cerrillos region (cf. Weigand 1992, 1997). Even after the fall of Chaco, Tula and La Quemada, all of which occurred around the mid-12th century, Casas Grandes survived and took the intermediary role. They handled a range of commodities (e.g. macaw feathers and copper artifacts) for trade into the Southwest and directed trade in turquoise, cotton and possibly copper ore from the Southwest down the coast into Mesoamerica (Weigand, Harbottle & Sayre 1977: 21-2; Karasik 1993: 67). Bradley (1993: 127) reports that a total of 5,895 pieces (1.2 kg) of turquoise were recovered from Casas Grandes, and that most of them were found in caches in architectural features instead of being associated with burials or stored in warehouses, which suggests that it was a rare mineral used primarily for socio-religious purposes.

Late Postclassic period

During the Late Postclassic, after the collapse of Casas Grandes, the Anasazi, along with their less organized southern neighbours, took the initiative in supplying turquoise to Mesoamerica (Weigand, Harbottle & Sayre 1977: 23). Another major source was the Mazapil-Concepción del Oro region of the Zacatecas-Coahuila border (Weigand, Harbottle & Sayre 1977). Sahagún (1953-81: Bk 11, 189) tells us that turquoise was brought from Quauhtemalla (Guatemala) and Xoconosco (in Chiapas) during Mexica times, but no turquoise mines have been reported from these regions. Also, this account does not match the distribution of tribute demands in turquoise, as mentioned in the text that follows (cf. Berdan 1987: 170).

In the Central Valley of Mexico, the Mexica capital of Tenochtitlan flourished and influenced all of Mesoamerica (1325-1521). The Mexica and other people of the Central Mexico became the largest consumers of turquoise in Mesoamerican history. The Mexica economy had three major distributive

systems of foreign luxuries: tribute, foreign trade by long distance merchants called *pochtecas*, and marketplace exchange (Berdan 1987: 177).

The trade network developed by the tribute system seems to have been independent of direct Mexica control. Smith (1998: 180-2) argues that the Mexica deliberately demanded non-local tribute not only 'to save themselves the trouble of obtaining distant goods' but also 'to stimulate trade and commerce throughout the empire' (cf. Berdan, et al. 2003: 105). Each province had to procure the assigned materials by developing its own trade network (Berdan 1987: 179). The *Matrícula de Tributos* (lams. 20, 30) and the *Codex Mendoza* (1997: fols. 39v-40r, 51v-52r) tells us that turquoise was offered to the capital as tribute from three provinces: Tochpan on the Huastecan coast of the Gulf of Mexico, Quiauhteopan and Yoaltepec in the south of Central Mexico (cf. Berdan 1987: 169-70; Weigand 1992: 60-1) (Figure 7.3). The turquoise tribute for each province is as follows: Quiauhteopan, one pan of small turquoise stones, annually; Yoaltepec, one package of turquoise stones and ten masks of turquoise, annually; Tochpan, a string of worked turquoise stones and two turquoise mosaic discs, annually (Berdan & Anawalt 1997: 90-4, 131-4). All the three provinces are thought to have been acting as intermediaries, because none of them had turquoise sources nearby (Weigand 1992: 60-1). Therefore, most of the turquoise carried from these areas was already processed (Weigand 1992: 60). The evidence of Huastecan pottery shards found at Mazapil-Concepción del Oro area implies that Tochpan and this mining area had a trading relationship and that some of Tochpan's turquoise could have come from the deposits of this area (Weigand, Harbottle & Sayre 1977: 23; Weigand 1992: 61). In order to obtain turquoise, Quiauhteopan and Yoaltepec allied themselves with the Tarascans of West Mexico, who were never subjugated by the powerful Mexica state. The Tarascan area is rich in metal mines and the people excelled in producing metal works, especially of copper. It is thought that they were the only Prehispanic group that was economically independent of the Mexica state by exploiting, producing and trading metals to other Mesoamerican regions and to the Southwest (Schöndube 1996: 18). The Tarascans militarily blocked Mexica access to the Southwest but indirectly supplied them with turquoise (Weigand 1992: 60;

Karasik 1993: 72).

The *pochtecas* were a group of hereditary merchants who organized expeditions to distant lands in search of valuable and exotic goods including turquoise (Sahagún 1953-81: Bk 9, 1-2; Diehl 1983: 114). They bought goods in one foreign community and resold them at a profit in another, much like modern independent merchant ships which buy and sell cargoes as they move from port to port (Diehl 1983: 114). The ethnohistorical sources tell us that the *pochtecas* served the Mexica state by trading in territories beyond the state's political and military control and by acting as spies and warriors or sometimes as diplomatic ambassadors (Sahagún 1953-81: Bk 9, 7-8, 17-9; Berdan 1987: 174).

Marketplaces were the other mechanism for access to the luxury goods, including turquoise, but the precious merchandise was destined to be collected by the exclusive elite. The luxury merchandise traded by the *pochtecas* was circulated in numerous marketplaces on their travel routes. However, the non-noble could not publicly display these treasures, and even though commoners of the province had a chance to acquire bits of exotic materials, they would trade them to merchants, artists, or other specialists for products more immediately consumable (Berdan 1987: 179). Likewise, in many cases, the luxury merchandise became the tribute payments of the local populace and finally reached the local or state elite, since the luxuries served essentially political, religious, and elite needs (Berdan 1987: 177-9).

Summary

In spite of the lack of the raw material, turquoise demands started in Mesoamerica, and the value of the mineral kept increasing toward the end of the Postclassic period especially in Central Mexico. On the other hand, turquoise was not treasured as highly in the Southwestern regions or the turquoise mining district as it was in Central America. Strong leadership of the Central Mexicans in turquoise trade and consumption is attested by the fact that the Nahuatl became the trading lingua franca throughout Mesoamerica and part of the Southwest during the fifteenth century (Dakin 2001: 364; Karasik 1993: 70). For example, Karasik (1993) mentions that the language the traders spoke at Acoma Pueblo in

the Southwest was Nahuatl.

Thus, by reviewing the history of turquoise trade, it becomes obvious that it was the Mesoamericans who were attracted by turquoise, and that among them the Postclassic Nahuas, including the Toltecs and Mexica, were the most attached to this mineral. This Mesoamerican interest in turquoise is reflected in the surviving turquoise objects from Mesoamerica, which are more elaborate and more sophisticated in design and technique than those of the Southwest.

7.1.3 Surviving examples of turquoise objects

Turquoise is a mineral that is not difficult to work and was normally processed for pendants, beads and mosaics in the Southwest and Mesoamerica (Weigand & Harbottle 1993: 161; Harbottle & Weigand 1992: 58). Most of the turquoise objects have been found as mosaic fragments or beads without their original perishable backings (mainly wooden) or strings, which makes it difficult to count and catalogue them. The turquoise objects kept in European museums were the first native Mexican turquoise objects that attracted the attention of specialists. From the beginning of the twentieth century, as more excavations in Mexico have been carried out, more objects have been unearthed. The major turquoise objects found in Mesoamerica represent masks, shields and knives covered with tiny turquoise tesserae. In the following paragraphs, I review the history of the cataloguing of turquoise objects, as well as my sampling strategy.

History of cataloguing

Many of the mosaic objects shipped to Europe by the Spaniards after the Conquest do not survive. It is difficult to date these objects kept in Europe and to identify them with the objects described in the sixteenth-century texts and the inventory lists. Some of the turquoise objects were known to be in collections as early as the sixteenth century, whereas others came to light in the nineteenth century (Pasztor 1983: 276). The objects which retain their original forms and are kept in museums have been catalogued by several scholars. In 1885 Pigorini

counted nineteen mosaic works, all of which were stored in European museums³. In 1895 Read catalogued twenty-two, and in 1903 Lehmann and Peñafiel added one more specimen in Vienna⁴.

The first complete catalogue including the objects excavated in Mexico accompanied by related ethnohistorical information was compiled by Saville (1922), just after the discovery of a set of turquoise masks and shields from a cave in the Mixtec region. He counted forty-five pieces including small fragments found in the Mixtec and Maya regions and said that twenty-three of them in Europe were probably sent by Cortés (1922: 47). After Saville, Mena (1927) counted fifty-three, including small fragments and pieces which have since been lost⁵. Then Toscano (1952) added ten more pieces, sixty-three in total. Since Toscano, so far a detailed report of turquoise objects has not been published⁶.

According to Weigand (1997: 27), more than a million pieces of turquoise, by counting every single fragment, have been archaeologically recovered from the Formative to Postclassic sites of Mesoamerica⁷. This includes the 17,000 pieces from Alta Vista reported by Diehl (1983: 153). Weigand's counting encompasses some complete mosaic objects from Mexico: for example, one mosaic shield is estimated to contain approximately 14,000 pieces of turquoise (Saville 1922: 72). On the one hand, therefore, it can be said that one million pieces of turquoise did not comprise numerous objects. On the other hand, considering the estimated number of 200,000 to 500,000 fragments that were recovered from the most productive period of Chaco Canyon located near the mineral mines, a million pieces from Mesoamerica are not a small amount, particularly in view of the physical distance from the turquoise-producing district (Weigand 1992: 59; 1997: 30).

³ Pigorini, Luigi (1885) *Gli antichi oggetti messicani incrostati di mosaico esistenti nel Museo Preistorico ed Etnografico de Roma*. Reale Accademia dei Lincei, Roma.

⁴ Read, Charles Hercules (1895) *An ancient Mexican head-piece coated with mosaic*. Westminster.

Antonio Peñafiel (1903) *Indumentaria antigua mexicana, Vestidos guerreros civiles de los mexicanos*. Mexico.

⁵ Mena, Ramón (1927) *Mosaicos mexicanos*. Forma, No. 4, vol. I. Mexico.

⁶ Carmichael (1970) wrote a book on turquoise mosaics in Mexico but it is dedicated exclusively to the nine pieces kept in the British Museum, London.

⁷ The way of the counting is explained in Harbottle & Weigand (1992: 57-8).

The recent archaeological project in the Templo Mayor, Mexico City, which took place from 1978 to the present, unearthed some minor turquoise objects, which we can find in the Recorded General Matrix, the enormous list of the findings from the offering caches, attached to the work of López-Luján (1994: 439-57). However, the turquoise pieces alone have not yet been catalogued and studied. The Museum of the Templo Mayor let me carry out an intensive investigation of the turquoise objects recovered from the offerings in their storerooms and archives, and I concluded that to date there are 165 entries of turquoise objects including fragments that have been recovered.

Some turquoise objects or fragments have been recovered in the excavations from the tombs and caves of the Oaxaca region (cf. Caso & Bernal 1952, Caso 1969); at Maya sites, such as Chichén Itzá (cf. Coggins & Shane III 1990); and in West and Northern Mexico. However, I repeat, the total number of the objects is unclear, because not all of them have been counted, recorded and catalogued.

Sampling and limitations

All the turquoise objects to which I refer in this study are currently stored in the museums in Mexico, the United States, and Europe. Most of the earliest collections not kept in Mexico were purchased and the contexts of the objects are not well documented⁸. All the collections in European museums were part of the loot sent by Hernan Cortés during the conquering period from 1518 to 1525 and later purchased by the museums. However, even the recently excavated objects do not offer detailed contextual information, because turquoise fragments are minor objects. For example, the American Museum of Natural History in New York does own some turquoise objects from Central Mexico but does not catalogue them, and the Smithsonian Institution has a list of fourteen entries but without detailed information. For reference, I attach a table of the number of the entries of turquoise objects attributed to the Central Valley, Mixtec-Zapotec region, Maya region, and West Mexico (386+ entries in total, Appendix 1), which is a list of the collections reported by the published catalogues and by personal

⁸ Personal communication with the American Museum of Natural History in New York and the Smithsonian Institution.

communication with and investigation in the museums⁹.

However, in this study, turquoise objects are investigated as one of the definitions of *xihuitl*. Although details of context and quantity would without doubt be valuable, for the purpose of analyzing the function and symbolism of turquoise in Mesoamerica, general context and category of object, such as knives from the offerings, shields and masks from the caves, and ornaments from the tombs, are considered sufficient. Because most of the fragments have lost their backings made of perishable material, and also because the retrievals and recordings of the excavations in earlier times, such as those of Saville (1922), cannot offer enough information, the number of the objects I can use for my structural and functional analyses is limited.

In this study I take up only the objects which retain their original condition and whose general contexts and probable functions can be suggested, such as ornaments, masks, shields and knives. Some of the objects from European museums are also included, because most of them are in good condition and at least their provenance is known to have been Postclassic Central Valley of Mexico.

The turquoise objects are supposed to have been produced for the Mexica elite by the Mixtec craftsmen living in the Central Valley, or received as tribute from the Zapotec-Mixtec and other regions (Pasztory 1983: 275; Townsend 1992: 185). Therefore, I also include objects from the contemporary Zapotec-Mixtec region (mainly caves and tombs). Likewise, some objects from the American Southwest, West and Northern Mexico are referred to for the comparative analysis of technique, function, symbolism and context. It should be noted that more turquoise objects than those I list in Appendix 1 must have been recovered from West Mexico, because this region played an important role in the long distance trade of turquoise, and also because the elite of this region are reported to have worn turquoise ornaments (cf. Craine & Reindorp 1970). Considering that the

⁹ Published catalogues include Saville (1922), Caso (1969), González González (1990), López Luján (1994), Royal Academy of Arts (2002). Personal communications include Museum of the Templo Mayor and National Museum of Anthropology, Mexico; American Museum of Natural History, New York; Smithsonian Institution; National Museum of Ethnographic Prehistory, Rome.

West Mexican turquoise objects are relatively limited to small ornaments, such as ear and lip ornaments, and are not as sophisticated in terms of manufacturing technique and symbolism as those found in the Central and Mixtec regions, the objects listed in Appendix 1 are regarded as sufficient for my comparative analysis in this study.

The ethnohistorical documents also provide information on how the turquoise objects were used by Postclassic people. It is inferred from Sahagún and other chroniclers' accounts that mosaic objects were used mainly in rituals and for elite ornaments, and that their use was exclusive to the rulers, priests and nobles on certain occasions. Likewise, all the turquoise objects that have been archaeologically excavated from primary contexts are from elite contexts, such as the offerings of the Templo Mayor and the elite tombs in Oaxaca. Therefore, the information given by written accounts and archaeological remains should be considered complementary.

In Appendix 1, I divide the objects first into three major groups of bead objects, mosaic objects, and others (fragments), and then divide the mosaic objects into thirteen groups, namely, mask, skull mask, shield/disk, wooden board, knife handle, flint, deity/animal figure, pectoral, small disk, ear ornaments, labrets, other mosaic ornaments and other mosaic objects. The detailed information of each item is stated in Appendix 2, excluding the items from the offerings of the Templo Mayor, which are listed in Appendices 3, 4 and 5. The objects and contexts show some clear relationships, which are discussed in the next section.

7.2 Use of turquoise in Mesoamerica

Turquoise ores were processed either as small beads or mosaics in Prehispanic Mesoamerica. Beads were used for ornaments such as necklaces, bracelets and pendants, and mosaics were applied to cover the surfaces of many kinds of objects, such as earplugs, labrets, masks, disks, knives, deity or animal figures, and wooden tablets. The objects made in Postclassic Central Valley and in the Mixtec regions, especially—masks, disks, knives and wooden tablets—display

patterns or designs made of turquoise mosaics of different tones of colour.

These objects covered with mosaics compose the majority (40%) of the turquoise objects found in Mesoamerica¹⁰. Taking into account the tesserae that have lost their original backing materials, more than 80% of the turquoise objects may have been mosaic objects. Likewise, small pieces of stone were sometimes processed as pendants, and some tiny fragments can be seen scattered in the offerings of the Templo Mayor.

The types of objects and the contexts show clear correlations, which may tell us the particular functions of certain types and turquoise symbolism attached to them. From Appendix 1 it is clear that the major turquoise objects are masks, disks (shields), and bead ornaments. Masks are closely related to caves and tombs; eighteen of the twenty-six masks have been found in caves mainly in the Zapotec-Mixtec region and four in Mixtec tombs. A total of twenty-four of the thirty-four shields have been recovered from the caves in the Zapotec-Mixtec region. The four shields cached in the buildings of the Postclassic Maya site of Chichén Itzá and the one from Tula show the close relationship of the two Postclassic areas (cf. Diehl 1983, Kalasik 1993, Weigand 1997). Likewise, many bead ornaments (57/68) have been recovered from Mixtec elite tombs. On the other hand, the major turquoise objects from the Mexica Templo Mayor offerings are flints (12/12) and small disks (16/23), which may reflect a turquoise symbolism unique to the Mexica.

In the following sections, the relationship between certain types of turquoise objects and their contexts is examined in order to understand Mesoamerican symbolism and the functions of turquoise. I exclude the Mexica buried offerings, which are studied in the next section 7.3. First, general characteristics of the major contexts from which the turquoise objects have been recovered, namely caves, tombs and offerings, are reviewed. Second, major turquoise objects—masks, shields/disks, and bead ornaments—in relation to their contexts are discussed. In addition, other mosaic objects kept in museums and without contextual information are referred to for the purpose of interpreting general

¹⁰ Total of mosaic objects = 156 entries (40%); beads = 68 (18%); fragments including tesserae without backings = 162 (42%).

characteristics of the mosaic objects. Finally, in the summary section, based on the inferred symbolism and functions of turquoise, the following two points are examined in order to shed light on the possible state of the process of objectification of turquoise in the Postclassic Mesoamerica: 1) regional differences in the manufacturing technique of turquoise objects; 2) the role of turquoise in mythology.

7.2.1 Contexts

Statistically speaking, the major contexts related to non-Mexica turquoise objects in Mesoamerica are caves and tombs. A total of 148 (67%) of 221 turquoise objects, except those from the Templo Mayor offerings, have been found in the contexts of caves and tombs. Whereas caves were generally used for a wide range of purposes, the caves from which turquoise objects have been recovered often share with tombs a context as burial sites dedicated to the consecrated dead. As for non-Mexica tombs with turquoise objects, their contexts are exclusive to the Postclassic Mixtec elite culture.

Offerings can be also included as one of the major contexts for the following two reasons: 1) four shields, one of the major turquoise objects, were recovered from an offering context at Tula and Chichén Itzá; 2) offerings are the major context for the Mexica turquoise objects, which are discussed intensively in the next section 7.3. As observed later, offerings also share with caves the context of oblation to the supernatural beings.

In the following subsections, first the general and regional functions of caves in Mesoamerica are summarized, and then the characteristics of tombs, especially in the Zapotec-Mixtec region, are outlined. Finally, the practice of offering or cache deposition in Mesoamerica is studied. In this way, common Mesoamerican contexts related to the turquoise objects can be highlighted.

7.2.1.1 Caves

Caves are regarded as a sacred place used for burials, ancestor veneration and religious practice in Mesoamerican cultures. However, most of the cave sites lack archaeological data and contextual information, and some of them still continue to be used and venerated by the local people, a condition which makes it difficult to see the Prehispanic context, function and meaning of a particular object in relation with the other objects (Saville 1922: 64; González Licón and Márquez Morfín 1994: 233)¹¹. The following paragraphs deal with the Mesoamerican category of caves, and the historical and regional employments of caves in relation to the turquoise objects.

Physical description and general functions

The category of caves in Mesoamerica apply to holes or cavities that penetrate the earth, including grottoes, cenotes (natural sinkholes in the Maya lowlands), sinkholes, springs, places where rivers emerge from or disappear into the earth, and crevices (Brady 2001: 99). Because of their ambivalent locations connecting the human world and the underworld (or the world of the dead), generally caves symbolize both creation and death in Mesoamerican cultures and are used as a place for religious rituals, pilgrimage and burials (Heyden 1981: 14-28; Brady 2001: 99-101). Because many of the caves contain water sources, the Mesoamerican people believe that caves are the sources of rain and crops, which turns caves into the ritual or pilgrimage place for rain and fertility cult (Heyden 1981: 19-20; Bassie-Sweet 1996: 155; Brady 2001: 99-100). The sense of fertility links to the concept of emergence, and caves often represent a womb from which particular groups of people emerged (Sahagún 1953-81: Bk 6, 118-9; Heyden 1981: 12-3; Brady 2001: 99). In this way caves are also related to ancestor veneration. Derived from the association of caves with the underworld

¹¹ González Licón and Márquez Morfín (1994: 233) mention that the actual inhabitants of Oaxaca still conserve some rituals related to the caves. Also Saville (1922: 64) believes that the worn condition of the objects found in the Mixtec cave imply their use even after the Conquest. Likewise, numerous caves in the Hill of the Star in the Mexico City, where the New Fire Ceremony used to be celebrated, are still visited by the local people for feasts and rituals (personal communication with the Museo del Cerro de la Estrella).

and ancestors, the souls of the dead are believed to enter a cave on their journey to the world of the dead (Sahagún: Bk 6, 136-7; Bassie-Sweet 1996: 156-77; Brady 2001: 100). The use of caves as ossuaries appears to be common throughout Honduras up to the border of Guatemala, in the western Guatemala highlands and Chiapas, Belize, Maya lowlands, Oaxaca, West Mexico and Northern Mexico (Brady 2001: 100).

Historical and regional employment of caves

Ritual use of caves is thought to have started as early as the Olmec times (Miller & Taube 1993: 56-7; Brady 2001: 100). Miller and Taube (1993: 56) suggest that some isolated caves of Oxtotitlan, Juxtlahuaca, and others of highland Guerrero were pilgrimage sites, because the entrances and walls of the caves are adorned by paintings in Olmec style. In Olmec art the quatrefoil frequently symbolizes a cave, such as rock carvings at Chalcatzingo which depict a monstrous face with the open mouth in quatrefoil and with maize foliage sprouting from the corners (Miller & Taube 1993: 57). This representation of a cave with maize foliage is possibly related to the concept of fertility (cf. Bassie-Sweet 1996: 109-10).

Ritual use of caves became common from the Classic period onward. Brady (2001: 100) mentions that the public architecture constructed in connection with caves seem pan-Mesoamerican, such as the Pyramid of the Sun at Teotihuacan, Osario at Chichén Itzá, and some architecture of the Maya site Dos Pilas. For example, the cave at Teotihuacan, found in 1971 lying under the Pyramid of the Sun, consists of the chambers in the form of a quatrefoil. Heyden (1981) thinks that this cave acted as a pilgrimage site as well as the place for water-fertility cult. As for the ritual use of caves, Torquemada (1976: Bk 3, 180-1), a seventeenth century friar, tells us that, in the Postclassic Nahua culture, children offered to the rain deity Tlaloc were taken into the cave alive, and that the entrance of the cave was sealed until the next year. The cave underneath the Pyramid of the Sun is supposed to have been used for such ritual, because some skeletons of children were found there (Heyden 1975: 141; 1981: 20).

Heyden (1971: 143-4) comments that in the Early Postclassic the cave may

have been sealed and to some extent forgotten. The cause of this abandonment is thought to be a change in the focus of religion around this period, in which the water-earth deities, so essential to an agricultural society, may have been replaced by gods related to trade, tribute, and perhaps, war (Jiménez Moreno 1970: 57; Piña Chan 1972: 55-61; Heyden 1975, 1981; Pasztory 1976: 254-7). No turquoise objects have been reported from the cave of Teotihuacan so far. However, a Teotihuacan-style greenstone mask, dated to the Classic Teotihuacan (A.D. 300-550), covered with turquoise mosaics was recovered from a cave in Guerrero (Appendix 2: 1.1.1).

In Classic Maya art, caves are also depicted in the form of a quatrefoil, following the Olmec art style. The quatrefoil opening of the Cauac monster represents mountains and their associated caves, and the cave passageways were illustrated as serpents through which the sun was thought to travel on its nightly journey under the earth (Bassie-Sweet 1996: 61, 110). Bassie-Sweet (1996: 61-2) describes the world of the Postclassic Quiche and Yucatec Maya people to be a flat square disk floating on the sea. Caves were located at each corner of the square, and a mythological mountain and cave, where the ancestors and certain deities lived, was centred at the cardinal midpoint on each side. The midpoint caves were also recognized to be the source of rain, corn, and lightning (Bassie-Sweet 1996: 155). Thus, the cave among the Maya was the doorway to the world of the supernatural beings and ancestors. Brady (2001: 101) reports that cave burial was also practiced in the Maya area, which was possibly associated with ancestor veneration. One wooden mask has been found in a Postclassic Maya cave in Naco, Honduras. The form of the mask displays the characteristics of the Central Mexican deity Ehecatl-Quetzalcoatl, who is associated with wind and rain. This mask might indicate the existence of ritual related to a certain type of religious practice in the cave.

In the Postclassic Zapotec-Mixtec region of Puebla and Oaxaca, many caves with archaeological remains related to burials and to certain kinds of ritual have been found (Figure 7.4)¹². These caves generally contain petroglyphs (animals,

¹² Most of the caves and tombs I take up in this study belong to the Postclassic Mixtec culture, but I call the regions 'Zapotec-Mixtec' because some of their locations, namely,

human figures, geometric designs and handprints), burials, offerings and other archaeological and ethnographical objects, such as colorful feathers, maguey spines (for autosacrifice), obsidian knives, ceramic pottery, greenstone beads, shells, coral, and bones of fish and animals (González Licón 1990: 200-1).

Turquoise objects are also abundant in the caves of this area. In the present state of Puebla, from a cave in Acatlan eight masks, eight shields and two earplugs, all covered with turquoise mosaics, were found¹³. From the caves in the Tehuacan Valley, one mask and six shields were recovered. A cave in Santa Ana Teloxtoc contained three masks. Likewise, in La Cañada region in Oaxaca, located between the Tehuacan and Oaxaca valleys, a few caves such as Cheve and Ejutla were discovered with archaeological materials, including turquoise objects (cf. González Licón 1990, 1994). According to González Licón (1990: 202), one mask and three shields were found in Cheve, and the mask was very similar in style to the two masks found in Ejutla. The details of each object and context are mentioned later, but based on ethnohistorical information on the use of turquoise masks, these burials may be related to elite funeral contexts.

Summary: caves

Thus, from Olmec times, caves in Mesoamerica have been the place or portal connecting the human world and the world of the spirit. Caves are used as the place of multi-functions, such as graves, ancestor veneration, pilgrimage, water-fertility related cults, and other rituals. The caves in the Zapotec-Mixtec region show close connections with turquoise objects especially in an elite funeral context. Likewise, a mask from Guerrero was reportedly found in a funeral context and the other from Naco may be evidence of the ritual practice of the water-related cult.

Cuilapan, Huitzo, Monte Albán, and Zaachila were originally under the Zapotec control. (cf. Chapter 2)

¹³ Although Saville (1922) does not mention the location of the cave, Toscano (1952: 494) indicates this cave is in Acatlan, Puebla.

7.2.1.2 Tombs

In contrast with the caves mentioned above, tombs indicate man-made buildings for the exclusive purpose of burying the dead. Tombs can be defined as room-like chambers large enough to hold the remains of one or more individuals and their accompanying grave goods, generally found underground, beneath floors of buildings, or encased within large, masonry-faced substructures, including pyramids (Andrews 2001: 244). Most tombs were constructed specifically as mortuary structures, but some were rooms originally built for other purposes and later used as tombs (Andrews 2001: 244). Throughout most of Mesoamerica, the bodies of nobles were buried in tombs with luxury objects (Miller & Taube 1993: 171). In the following paragraphs, the general characteristics of tombs in Mesoamerica are summarized, and then Mixtec elite tombs, from which a number of turquoise objects have been recovered, are examined.

Physical descriptions and regional differences

The burial practices and the structures of tombs varied considerably in different Mesoamerican cultures. These include simple burials in a shallow, hole in the ground, elaborately constructed and decorated stone masonry tombs; and also burials in vaults, crypts, cists, urns, caves, and graves (Andrews 2001: 244). Some of the early tombs are at Olmec sites such as La Venta, in West Mexico and in the Maya highlands of Guatemala (Andrews 2001). On the other hand, no tombs have been confirmed from Teotihuacan, the largest Classic city, and from Tula, one of the influential Postclassic cities, both in Central Mexico (Andrews 2001: 245). In contrast, tomb burials especially during Classic to Postclassic periods appear to have been fairly common at sites in the Valley of Oaxaca, where more than one hundred tombs were excavated at Monte Albán before 1950, and many more found in later years (Andrews 2001).

For example, at Monte Albán, the Classic Zapotec capital, the Zapotec buried their dead elite in tombs created at the centers of their patios in underground chambers connected by a single flight of stairs (Miller & Taube 1993: 171-2). However, as the Mixtec took over political power in the Valley of Oaxaca during

the Late Postclassic period, they sometimes occupied the Zapotec old towns and reused the Zapotec tombs for their own elite (Paddock 1970: 200-25; Bernal 1970: 345-66; cf. Caso 1969). In Monte Albán, seven tombs (4% of the total), seventeen burials, and twenty-one offerings were rearranged by the Mixtec, a fact attested by the ceramic dating and the Mixtec art style of the grave goods (Bernal 1970: 359-61; A. Miller 1995: 157). The Mixtec moved or discarded the bones of the primary burial and buried their own dead elite in the old tombs together with new luxurious offerings, including gold and turquoise objects.

The tombs that contained turquoise objects were concentrated in the Zapotec-Mixtec region. A total of ninety-four items were recovered from Tomb 7 of Monte Albán, and eight from other tombs in the same region. From the quality of the grave goods and their art style typical of Postclassic Mixtec craftsmanship, these tombs seem to belong to the Mixtec elite.

Summary: tombs

Although burials in tombs are characteristic of all Mesoamerican cultures, the number of turquoise objects found in tombs is greater in the Zapotec-Mixtec region. Archaeologically speaking, the best example is Tomb 7 of Monte Albán, and the major turquoise objects recovered from Tomb 7 are bead and mosaic ornaments, which possibly show the wealth and power of the buried persons. However, four masks from the other Mixtec elite tombs may be key objects that are important in understanding the context and use of the other fifteen masks found in caves in the same region.

7.2.1.3 Offerings

Mesoamerican offerings can be defined as the material expressions of rites of sacrifice or oblation made by the faithful with the purpose of establishing a communication and exchange with the supernatural (López Luján 2001: 403). The sixteenth-century historical sources report that the majority of Mesoamerican offerings consisted of foodstuffs and other perishable items such as seeds, pulque, cacao, human and quail blood, aromatic resins, tobacco, flowers, feathers, rubber, and bark paper (López Luján 2001). Other far less common rites of oblation

were so-called 'buried offerings' or the interment of gifts including not only perishable objects but also an enormous variety of raw materials, biological organisms, sacrificed human beings, and manufactured items including semi-precious and finished objects of ceramic, stone, metal, shell, bone, textile, wood, and ornaments, vessels, divine images, and instruments of sacrifice and autosacrifice (López Luján 2001: 403-4). Turquoise objects were included in such buried offerings, although they were minor objects. The following paragraphs review the history and physical characteristics of buried offerings in Mesoamerica.

History and physical description of buried offerings

The practice of buried offerings has a long history in Mesoamerica. The oldest buried offerings date to the early Formative period (2500-1200 B.C.) and generally consist of anthropomorphic figurines and ceramic vessels deposited in the construction fill of the village dwellings (López Luján 2001: 403). A sharp increase in the quantity and quality of gifts offered to the supernatural can be observed in the middle Formative (1200-400 B.C.) (López Luján 2001). However, the richest and most complex offerings have been found in the urban centres of the great states of the Classic (A.D. 200-900) and Postclassic (A.D. 900-1521) periods, a few examples of which are Chichén Itzá, Tula and Tenochtitlan (López Luján 2001).

The buried offerings were made on special occasions in life and society: the construction, renovation, consecration, and closure of important buildings; the inauguration and reutilization of important sculptural monuments; the end of great cycles of time; the rites of passage of sovereigns and other distinguished persons; military victories; economic and social crises; and natural catastrophes (López Luján 2001: 403). The places where offerings are deposited are always associated with liminal areas where it was possible to establish communication with the supernatural, for example; unusual geographical features (mountaintops, caves, springs, cenotes, whirlpools), elements organizing urban space (plazas, avenues, aqueducts), religious edifices (temples, shrines, ball courts), monumental sculpture (stelae, altars, benches), and habitations (palaces, urban residences, rural

dwellings) (López Luján 2001: 403).

As for the offerings buried in the buildings, they were usually placed on the centre line, the corners, or along the principal axes of buildings, and were also commonly deposited at the entrance, the centre, and the doorways of rooms, as well as the foot of stairways and the apex of pyramids (López Luján 2001: 403). The positions of the offerings represented the different occasions in which the oblation occurred: construction offerings were incorporated directly into the foundations or the nucleus of a building and covered with tons of filler material; inauguration offerings were deposited in vessels created just before the consecration of the monument; offerings made while the building was functioning were introduced into cavities dug into the floor, and sealed with a stone slab or a patch of stucco; and closure offerings were placed on floors, stairways, or altars, and then buried by new construction (López Luján 2001).

Turquoise objects have been found in the offerings of Tula, Chichén Itzá and Tenochtitlan. In Tula, one turquoise shield was recovered from the offering buried under the floor of the centre of the Burned Palace. Most of the recorded turquoise from the Maya area belongs to the recovered offerings from the Sacred Cenote and pyramids of Chichén Itzá in the Yucatan peninsula. Some small turquoise objects were found in the Cenote, and four shields very similar in design to the Tula shield came from offerings in a vessel, a box and a throne buried in different structures (Appendix 2: 1.3.28-31, 1.12.2-5). The objects from the offerings of the Templo Mayor are discussed in the section 7.3.

Summary: offerings

It seems difficult to distinguish offerings from other deposits buried intentionally, such as, refuse dumps, storage spaces, and graves. López Luján (2001: 403) says that they can be distinguished only by a detailed record of the buried materials along with their contexts. In the case of the Templo Mayor offerings, some buried gifts clearly represent the Mexica cosmovision through their locations and compositions (see section 7.3). However, especially the offerings made not in buildings but in geographical features, such as caves, make it difficult to judge the context only by the recovered materials, and in such cases, related

information recorded in ethnohistorical documents can be helpful in reconstructing their possible symbolism.

7.2.2 Mosaic Objects

Mosaic works indicate a picture, pattern or object produced by arranging usually small pieces of stone, glass, and or shell. A tessera refers to one of the small pieces that make up a mosaic. One of the examples of the earliest mosaic works is an Olmec stone mosaic mask, made of large rectangular serpentine slabs, and buried under colored clays and adobe bricks at La Venta (M. Miller 1986: 24-5). This mask is thought to represent a cleft-headed monster and to form part of the architecture (M. Miller 1986). Another well-known example is a Zapotec bat mask (28 x 17.2 cm) consisting of twenty-five relatively large pieces of jade, possibly used as pectoral or belt, found offered to the dead ruler buried under the Great Plaza of the Early Classic Monte Albán (M. Miller 1986: 53). However, production of advanced mosaic works by arranging tiny pieces of tesserae which create smooth surfaces without gaps between them may have been established in the Classic Maya culture. Some jade mosaic masks have been found in Calakmul and Palenque (Coe 1987: 111; Carrasco Vargas 2000: 16-7). It is supposed that, during the Classic period, the major materials for mosaics were jade and other greenstones, and that the production of mosaic-covered objects was still limited to the small objects.

In the Postclassic period, the number and variety of sophisticated mosaic works increased considerably. One of the famous Postclassic mosaic examples is a Toltec figure of the head of a coyote from whose fangs a face of soldier emerging (Solís 1998: 84). This figure is entirely covered with small pieces of shell tesserae. Another characteristic of Postclassic mosaic works is the use of turquoise in preference to other greenstones. The amount of imported turquoise increased, perhaps partly because turquoise is an easy stone to cut and shape (Weigand & Harbottle 1993: 161; Sahagún 1953-81: Bk 9, 82). Together with turquoise, other materials such as shell, jade, malachite, beryl, lignite, iron pyrite,

and pearls were used, in order to show various colours (Pasztor 1983: 275). Normally turquoise-beveled tesserae and other mosaics were glued onto a base or backing made of wood, stone, bone, and other materials using a mixture of charcoal and chia-seed oil applied to the backs (Aguilera 2001: 277). Mosaics of different material and shades of colour were carefully made, from simple patterns to complicated ritual scenes on the prepared backings of objects. This sophisticated mosaic technique was developed especially by the Mixtec craftsmen only in Postclassic (Pasztor 1983: 275). Archaeological remains demonstrate that turquoise mosaics were used not only to cover and decorate the surfaces of portable objects, such as masks, disks, shields, knife handles, scepters, helmets, and deity or animal figures, but also of small ornaments, such as ear and lip ornaments.

In this section, the functions of turquoise mosaic objects, namely masks, shields, and other portable objects (knife handles, deity & animal figures, pectorals, small disks, ear & lip ornaments), in relation to their contexts are examined. In the first section, the general characteristics of masks in Mesoamerica are summarized, and then the turquoise masks found in caves and in tombs are analyzed. Second, the general characteristics of shields in Mesoamerica are reviewed, and the turquoise shields found in the Mixtec caves, and at the sites of Chichén Itzá and Tula are studied. Finally, the general traits of other portable objects and their related contexts are discussed. It should be noted that the objects discussed in this section are mainly covered with turquoise mosaics, but some include mosaics of other materials in addition to turquoise for the nuance of design.

7.2.2.1 Masks

Masks are coverings for all or part of the face, often made of wood, stone, bone, skin, and other materials. Some of the masks represent an entire face, whereas others represent only the eyes or the mouth and jaw (Klein 2001b: 175). Most Mesoamerican masks take a human or partially human form, and some portray animal forms (Klein 2001b). Many are approximately life-size and therefore presumably were intended to be worn over a face, but the small size of others,

some of which have drill holes for a cord, suggests that these were worn on the body as pendants (Klein 2001b). Masks appeared in Mesoamerica from the Early Preclassic period, after about 1500 B.C., and are common in the art of the Maya, Mixtec, and Mexica cultures, where they usually appear worn by rulers, priests, and leading warriors (Klein 2001b: 175).

Many chroniclers and native painted manuscripts tell us that masks were often used in rituals and funerals in Mesoamerica. For example, Books 2 and 3 of the Florentine Codex (Sahagún 1953-81) recorded that the impersonators and the statues of the gods wore masks in feasts and rituals, and that sometimes masks were placed over the faces of the dead. Masks with turquoise mosaics, especially in the Mexica culture, were placed over the faces of the images and priests (or impersonators) of the major deities such as, Huitzilopochtli, Quetzalcoatl, Tlaloc, Xiuhtecuhtli, Tezcatlipoca, Camaxtli and Cinteotl (Aguilera 2001: 277; Klein 1986: 139; Sahagún 1953-81: Bk 2). Likewise, according to the sixteenth century chroniclers, before being interred, the Mexica dead rulers were dressed in the ornaments of the supreme god Huitzilopochtli or Tezcatlipoca, and turquoise masks were placed over the faces of the dead as part of the attire (Pomar 1975: 10-1, 38; Ixtlilxochitl 1985: Vol.1, 351; Klein 1986: 155).

The symbolism of masks can be sought in Mesoamerican philosophy. In the Nahuatl language, *xayacatl* means both 'mask' and 'face', and the face, in turn, was a Nahua metaphor for personality, self, honor, and reputation (Klein 2001b: 175). In other words, the masks representing supernatural beings were worn by the elites to embody an essence that was divine (Klein 2001b). Likewise, Markman and Markman (1989: xx) focus on the Mesoamerican common mythological thought in which human beings are created from lifeless matter by the animating force of the divine spirit, and life exists only as long as it is supported by that divine force¹⁴. They explain the function of the wearing of the mask as follows (Markman & Markman 1989: xx):

The mask delineates the oppositional relationship between matter and spirit

¹⁴ For example, *Leyenda de los soles* (Códice Chimalpopoca 1992a: 120-1) tells that the present (Fifth Sun's) human beings were made by the god Quetzalcoatl by mixing the bones of the extinct humans of the Fourth Sun with his blood.

but in the very process of that delineation allows man simultaneously to be both, to unite his obviously material being with the spiritual reality he senses deep within him and through that union to express his profound identification with the cosmic structure of which his dual nature is the microcosm.

This means that by wearing a mask a man can embody the divine spirit, of which he is originally made.

Most of the non-Mexica turquoise masks found in the caves and tombs seem associated with the funeral context but without symbolic relations to particular deities. Actual funerary masks began to appear in Preclassic Olmec times (Markman & Markman 1989: 89). The Olmecs buried their dead with stone masks which were often of jade or other greenstone; for example, a group of about thirty-five jade masks were found from Arroyo Pesquero, Veracruz. Also in the later period the Maya and Zapotec interred greenstone masks together with the dead¹⁵. Many stone masks, which are too heavy to be worn and most of which do not have eyes and nose holes, have been found from Preclassic Olmec La Venta and Classic Teotihuacan (Markman & Markman 1989: 89; Berrin & Pasztory 1993: 184). Because of their heavy weight, these stone masks are thought to have been placed over the faces of the dead as part of the funeral rite (Markman & Markman 1989: 89). As part of funeral rites, it is widely known that in some Mesoamerican cultures, mummy bundles were made before burial (Klein 1986: 155; Taube 2001: 734). These stone masks infer that the dead nobles or warriors were wrapped into mummy bundles, and that the masks were sewn onto such bundles and then buried (Miller & Taube 1993: 170-1; Taube 2001: 734). In the case of funeral rites, transforming into the divine being or a force of life by the power of the mask may indicate that the dead starts to live another life in the other world.

Among many types of turquoise objects, masks appear to be one of the common elements in caves and tombs. Masks covered with turquoise mosaics were recovered from caves in Guerrero (1 mask) and in Honduras (1), and from

¹⁵ The use of funerary mask in each region is explained in Markman & Markman (1989: 88-96).

the Zapotec-Mixtec caves (16), tombs (2), and unknown provenance (3)¹⁶. The common characteristic of these sites, excluding the cave in Honduras, is the funeral context. In this subsection, first, the possible symbolisms of the masks of Guerrero and Honduras and those found in the caves in the Zapotec-Mixtec region are examined. Likewise, other masks recovered from Mixtec elite tombs are studied. Then the masks in European and American museum collections are discussed for complementary and comparative information. Finally, in summary, the meanings and functions of the turquoise masks are considered.

7.2.2.1.1 Masks found in caves

The caves to be taken up in this subsection are in Guerrero, in Naco, and in the Zapotec-Mixtec region including Cheve, Ejutla, Acatlan, Santa Ana Teloxtoc and other caves in Tehuacan.

Guerrero

A greenstone mask, dated to Classic Teotihuacan (A.D. 300-550), covered with turquoise mosaics, was found in a cave in Guerrero (Solís 1998: 59) (Appendix 2: 1.1.1). Normally turquoise incrustated masks are of wood or skull but this is the only example of a stone mask covered with turquoise mosaics. Its red-blue facial pattern and red nose ornament seem similar to the mask of the Mexica fire god Xiuhtecuhtli kept in the National Prehistoric-Ethnographic Museum in Rome (cf. Appendix 2: 1.1.24). Although the context is reported to have been sepulchral, more detailed information and other findings were not recorded, so the function and/or meaning of this mask remains unknown (Saville 1922: 54).

Maya

In the Maya cave near Naco, Honduras, a cedar wood mask with the characteristics of Ehecatl-Quetzalcoatl, the wind deity of the Central Mexico, was found (Appendix 2: 1.1.2)¹⁷. Naco was a Postclassic trading emporium

¹⁶ In the number of the masks from the Zapotec-Mixtec tombs, I include a decorated skull found in Tomb 7, Monte Albán.

¹⁷ This cave may be called the Quimistan Bell Cave, which is mentioned in Schortman & Urban (2001: 682-3), as their explanation of Blackiston's discovery of a large amount of

integrated within long-distance exchange networks established by the Toltec, and Naco's architectural styles, ceramics and remains of obsidian and copper show strong influence from the coexisting Central Mexican cultures (Schortman & Urban 2001: 682). Actually this mask was found with hundreds of copper bells, probably imported from West Mexico, one of the regions integrated into the long-distance networks (Saville 1922: 67). Generally in Mesoamerica the sound of copper bells was believed to bring rain (Hosler 2001b: 311). It is suggested that this Ehecatl-Quetzalcoatl mask may have been related to a kind of rain-fertility cult of the Central Mexico. The Central Mexican myth of the Leyenda de los soles (Códice Chimalpopoca 1992a: 120-1) tells us that Quetzalcoatl was the god who created the present humans from bones retrieved from the underworld, and brought sustenance for the humans from deep inside the sacred mountain called Tonacatepetl. The journey of Quetzalcoatl to the underworld can be paralleled to the Divine Twins' roles in the Maya myth of Popol Vuh. The Twins went down into the underworld to retrieve the seeds and bones of exanimate humanity in order to ensure periodic regeneration (Florescano 1999: 100). Likewise, the wind is associated with the rain, as the wind deity was thought to bring rain at the beginning of the rainy season (Sahagún 1953-81: Bk 1, 9). This cave in Honduras does not have records of excavation, and further discussion of the functions of the mask seems very difficult. However, it is inferred from the myths that this cave may have been regarded an entrance to the underworld, the source of the creation of present humans and sustenance, and that rituals dedicated to Quetzalcoatl in order to ask for rain and fertility may have been practiced there. Thus, this mask may represent a ritual function rather than funeral function of the turquoise masks.

Zapotec-Mixtec region

The turquoise masks found in the caves show clear relation with the Mixtec funeral context. Dahlgren (1990: 263-74) introduces some ethnohistorical

copper bells in the cave is very similar to *Blackiston's (1910) description of the cave quoted by Saville (1922: 67). *Blackiston, A. Hooton (1910) Recent discoveries in Honduras. *American Anthropologist* N.S. Vol. 12.

information on burial practice of the Mixtec elite¹⁸. The ethnohistorical documents tell us that when a ruler died, a slave attired in his master's adornments and three women were taken to the top of the mountain or to a cave with the dead body of the ruler, made drunk, and drowned in order to serve their dead master in the other world¹⁹. The deceased ruler was wrapped with many cotton cloths and adorned with much jewelry on his ears, neck, wrists, and head, and his face was covered with a mask. The *Códice de Yanhuitlan* (1940) tells us that in some funerals carried out by Don Francisco de Yanhuitlan, a portion of the hair of the deceased was cut off in the memory of his death; a turquoise mask was put over his face, and a jade figurine was placed on his chest²⁰. The dead ruler was believed to continue his life in the other world, some ceramic vessels containing food may have been also buried with him (Dahlgren 1990: 273). Dahlgren (1990: 272) argues that the drowned victims and the burial of the dead without cremation remind us of Tlalocan, the Nahuatl concept of the ever-spring paradise of the rain deity. Tlalocan was regarded as being located in the mountains and caves, and it is a place where drowned people or those who died of other water/thunder-related accidents were destined to go, and these people would not be cremated upon burial (Sahagún 1953-81: Bk 3, 47). Dahlgren continues that Tlalocan-like paradise existed in the Mixtec thought, and that the Mixtec rulers were buried in caves to live next life in the paradise with their servants, who needed to have good reason, i.e., death by water, to be permitted there. Then every year on the birthday of the dead ruler, his death was commemorated and some slaves were sacrificed and buried for him (A. Herrera 1947, *Códice de Yanhuitlan* 1940). Although the location of this feast is not mentioned in the ethnohistorical documents, based on the archaeological remains, it is possible that the cave was visited by those who commemorated the ruler's death and more

¹⁸ Dahlgren (1990) cites from the following documents: A. Herrera (1947); Burgoa, Fr. Francisco de 1940. *Geografía descripción de la parte septentrional del polo ártico de América*. Publicaciones del Archivo General de la Nación, Mexico; *Códice de Yanhuitlán*. Comments by W. Jiménez Moreno & S. Mateos Higuera, Mexico.

¹⁹ The number of the sacrificed person to accompany the dead elite varies according to the burial sites. For example, 12 sacrificed in Yucuñudahui, 9 in Monte Albán, 4 in Coixtlahuaca Tomb 3 were recovered.

²⁰ Dahlgren (1990: 272) interprets this 'jade figurine (un ídolo de jade)', as another mask

offerings and sacrificial victims were made for him.

1) Cheve

The Cheve cave, located in the east of Cuicatlan, is composed of a main chamber of 70 meters wide and 200 meters long with two elongated galleries (González Licón 1994: 232-4). It is reported that a wooden mask covered with turquoise mosaics was found in the main chamber with numerous human bones scattered on the man-made stone altar and on the floor (González Licón 1990: 201-3; González Licón & Márquez Morfín 1994: 232-4). The bones on the floor were placed on a layer of grass and covered also with the same grass. Other objects found with the mask and the bones were many fragments of ceramics, some complete ceramic vessels, obsidian knives, projectile points, and stone beads. González Licón and Márquez Morfín (1994: 233) assert, based on the analysis of the artifacts, that the main chamber was used during the Postclassic by a group of people who buried their rulers and families with many offerings, and who venerated the cave as their place of origin. It can be also suggested that this turquoise mask was possibly placed on one of the buried corpses in the manner the chroniclers describe.

2) Ejutla

González Licón and Márquez Morfín (1994: 232) mention that the turquoise mask of Cheve is very similar in style to the masks found in the Ejutla cave in La Cañada region. Ejutla was a heavily looted Mixtec cave, but two turquoise mosaic masks and at least forty-five burials were found inside it (Markman & Markman: 1989: 94-5; González Licón & Márquez Morfín 1994: 230) (Appendix 2: 1.1.4-5). Markman and Markman (1989: 94) quote the words of Christopher Moser, a member of the exploring team, who said that these tombs reflect Mixtec elite-style burials including the killing of servants as informed by the chroniclers²¹. Therefore, it seems likely that the two masks were placed over the faces of the

made of jade.

²¹ Markman & Markman (1989: 94-5) cite from: C. Moser (1975) Cueva de Ejutla: Una cueva Funeraria Pósclasica? *Boletín del INAH* 14: 25-37.

dead Mixtec rulers.

3) Acatlan

Markman and Markman (1989: 94-5) also refer to Moser's (1975) statement that it is difficult to distinguish the masks of Ejutla from the eight wooden masks with turquoise mosaics found in a Mixtec cave in Acatlan reported by Saville (1922: 63-6) (Appendix 2: 1.1.6-13). Saville (1922) gives physical descriptions of those masks but not the context of the site. The masks are of wood, and all the mosaic incrustations are set in a bed of gum. Four of them display similar high workmanship, and three are different in character, because the mosaic pieces are larger and coarser and considerable stone other than turquoise was employed in the decoration. The last one no longer contained mosaic. All the masks are in damaged condition and lack the chin. Each mask shows different design, but seven of them are painted red above the mouth, the facial decoration which reminds us of the Teotihuacan mask with red nose ornament found in Guerrero. These designs do not seem to represent particular deities, but blue colouring on the upper part of the face and red around the mouth is typical facial painting of Xiuhtecuhtli sculptures found in Mexica offerings. From the worn condition of the objects found in this cave, Saville (1922: 64) suggests that they were used by local people even after the Conquest, possibly until relatively recent times. It can be said that the masks originally covered the faces of the dead Mixtec elite, but that later they were used for other religious rituals.

4) Santa Ana Teloxtoc

From a cave in Santa Ana Teloxtoc, Puebla, a total of ninety-five objects (later classified to sixty-five entries) were recovered including thirty-seven wooden masks, of which six show some trace of mosaics and two clearly with turquoise (Vargas P., et al. 1989: 107-8, 122-40). The cave consists of two major galleries and its entrance is six meters wide, three meters high and one meter wide (Vargas P. & Cortés de B. 1989: 97). The main gallery parts in two ways, one to the left (Gallery 1), perpendicular to the other (Gallery 2) which extends in the same direction as the main gallery (Vargas P. & Cortés de B. 1989: 98-9). The

seventy elements, including fragments of masks, shields, vessels and bone remains, were recovered scattered on the floor from the first gallery, and the two turquoise masks also belong to this gallery (Vargas P. & Cortés de B. 1989: 99, 104; Vargas P., et al. 1989: 122-4). The first mask retains most of its turquoise mosaics and its onyx inlays in the eyes and mouth. This mask displays a nose ornament in the form of two small wings, painted red, on either side of the nose, which is similar to the eight masks found in Acatlan (Royal Academy of Arts 2002: 475) (Appendix 2: 1.1.14). The second mask shows anthropomorphic features with two protuberances on the head, and most of the mosaics have been lost (Vargas P., et al. 1989: 122, 124) (Appendix 2: 1.1.15). The elements can be dated to the Classic to Early Colonial period, but the purpose of the use of the cave is difficult to interpret because of the disordered and fragmental condition of the elements (Vargas P. & Cortés de B. 1989: 102-6). The great quantities of masks and bones may indicate that they were dedicated as offerings in some kind of ritual or burial (Vargas P. & Cortés de B. 1989: 98, 102-4).

5) Other caves in Tehuacan

All the other masks with turquoise from the caves in Tehuacan show a style similar to the masks mentioned above. Two masks are kept in the Museo Regional de Puebla (Royal Academy of Arts 2002: 475). The first mask has two protuberances on the head, similar to the second mask of Santa Ana Teloxtoc, and wide ear ornaments suggest that this mask may represent a supernatural being combining human and feline elements (Appendix 2: 1.1.16). Only a little remains on the mask of turquoise mosaics; a small piece of obsidian near the nose and a piece of silex near the mouth. Likewise, the second mask contains only a few fragments of turquoise and patches of cement (Appendix 2: 1.1.17). The eyes of the mask are pierced to take inlays and the large rectangular mouth may have contained inlays representing teeth or fangs. Although no information has been recorded about this cave, it is possible that these masks were used for the Mixtec elite burial, in the same way as the others mentioned earlier.

The other mask is kept in the museum in Berlin, only half of which remains (Appendix 2: 1.1.18). According to Dr. Manuela Fischer of the museum

(personal communication), this mask was found in a cave in the Tehuacan Valley, Puebla, but no detailed context has been recorded, nor have the mosaic materials been analyzed. Some mosaic incrustations, possibly of turquoise, on the cheek still remain, and the side of the nose and mouth seem painted red like other masks found in the Mixtec caves. More than sixteen similar fragmental masks, some with remains of mosaics of unknown material, were found in Santa Ana Teloxtoc (Vargas P., et al. 1989: 131-40). This may also have been related to the Mixtec elite burial.

7.2.2.1.2 Masks found in Mixtec tombs

The tombs to be mentioned here are Tomb 7 of Monte Albán, Coixtlahuaca, and other tombs including Zaachila. The two skull masks, one kept in the British Museum and the other in the Ethnographical Museum in Berlin, are also referred to here in comparison with the decorated skull of Tomb 7.

Tomb 7, Monte Albán

Tomb 7 of Monte Albán is one of the examples of the Zapotec tombs reused by the Postclassic Mixtec (Caso 1969: 59; 1974: 209). The original Zapotec construction and the use of Tomb 7 may have been as much as 800 years earlier than the date of the Mixtec burial (A. Miller 1995: 157). In this tomb a total of nine corpses were found scattered with more than 330 pieces of grave goods in two chambers (Caso 1969: 59, Appendix; 1974: 206)²². According to Caso (1969: 147-9, Appendix), a total of ninety-four turquoise objects were found in Tomb 7, and the total weight of turquoise beads was 1,131g. The turquoise objects include thirty-eight necklaces of turquoise beads; seventeen necklaces of turquoise beads mixed with other beads, such as gold, jade, and pearl; thirty plaques with mosaic incrustations; two earplugs, one carved bone with mosaic incrustations; five fragments of turquoise; and one skull covered with mosaics²³.

²² Dahlgren (1990: 268-271) informs that there were eleven burials, one primary and ten secondary, were found in Tomb 7.

²³ The thirty wooden or shell plaques with turquoise tesserae are thought to have once formed mosaic works now impossible to reconstruct, possibly including masks and breastplates (Caso 1974: 205-6).

The skull had inlaid shell teeth and eyes and a piece of conch shell was inserted in the nose (Caso 1969: 62-6) (Appendix 2: 1.2.1). These physical characteristics remind us of the decapitated skulls found in the offerings of the Templo Mayor, as mentioned below. Inside the skull is painted red (Caso 1969: 66). Caso (1969: 59-69) believes that this decorated skull was of a sacrificed warrior and comprised a their offerings to their dead.

As Caso (1969: 67) and Klein (1989: 140-2) argue, in order to identify its character expressed by the material and design, this skull should be compared with the two skull masks in European museum collections and also with a number of decorated and undecorated skulls recovered from the offerings of the Templo Mayor. The two skull masks are made of only the frontal (facial) part of the skull, unlike the decorated skull of Tomb 7, which is a whole cranium (Caso 1969: 66). In the case of the Templo Mayor offerings, some keep the whole cranium, whereas others leave only the frontal portion with incrustations of shell and pyrite in the eye sockets and at times flint knives in the nose and mouth openings (Matos Moctezuma 1990: 78; D. Carrasco & Matos Moctezuma 1992: 116-8; López Luján 1994: 481) (Figure 7.5).

The first skull mask, kept in the British Museum in London, shows a facial decoration of black (of ignite) and blue (of turquoise) mosaic, and the inside is lined with red coloured leather (Appendix 2: 1.2.2) (cf. Klein 1986: 141; Royal Academy of Arts 2002: 476). The second mask, which was stored in the Ethnographic Museum in Berlin but lost in World War II, was covered with some sky-blue to pale turquoise mosaic but it is difficult to describe its condition and facial pattern because the only remaining reference is its black and white photo (personal communication with Dr. M. Fischer of the museum) (Appendix 2: 1.2.3). These masks are thought to have formed part of the loot taken by Cortés to Europe and do not have any contextual information (Toscano 1952: 486).

On the other hand, none of the skulls found in the offerings of the Templo Mayor is decorated with turquoise, but these skulls can offer a possible interpretation of the function and meaning of human skulls. Based on the ethnohistorical records provided by Martyr d'Anghiera (1970: 203), Klein (1986: 141) explains that these human skulls of the offerings were of sacrificed war

prisoners and used as trophies offered to the state for ritual sacrifice (cf. Matos Moctezuma 1990: 78-9). The London mask has been interpreted as being either of Huitzilopochtli or Tezcatlipoca from the colour pattern of the facial decoration (Toscano 1952: 484; Caso 1969: 67; Carmichael 1970: 12; Klein 1986: 141; McEwan 1994: 75). However, it is logical to think that the identity of the mask can be a mixture of both deities, because blue is one of Huitzilopochtli's facial colours (blue and yellow) and black is one of Tezcatlipoca's (black and yellow)²⁴. The aspect accentuated by both deities can be an association with war and sacrifice, which clearly links to the function of the skulls as trophy heads. In addition, as Klein (1986: 141) argues, this skull mask must have reflected the Mexica practice of dressing slaves to be sacrificed in the garb and facial paint of the god being honored, a practice which represented the idea that an enemy life had been paid. Thus, at least in the case of the skull mask of London, the decorated skull is related to the whole concept of war, sacrifice and (offered) life.

The decorated skull of Tomb 7 may be associated with both ideas of trophy skulls and of other masks found in the Mixtec caves. In other words, this skull may have been an offering to the buried person, and its turquoise mosaic decoration may imply not only an aspect of the deities related to the solar-war cult but also the concept of death and funeral rites like other Mixtec masks placed over the face of the dead.

Coixtlahuaca

Another turquoise mask kept in the Museo Nacional de Antropología in Mexico (MNA) is said to have belonged to Coixtlahuaca, and was used in the burial/funeral context (Solís 1998: 175) (Appendix 2: 1.1.19). Coixtlahuaca was the most northerly Postclassic Mixtec capital in the Mixteca Alta (Evans & Pohl 2001: 161-2). In Coixtlahuaca, three tombs were found in the same patio, the third of which was the richest, with five corpses and rich collections of jewelry, ceramics, crystal and alabaster glasses, remains of paintings, utilitarian instruments and turquoise mosaics (Dahlgren 1990: 268-9). The mask in the MNA, again, shows artistic traits similar to the other masks found in the Mixtec

²⁴ The mixed nature of the deities in Mesoamerican thought was discussed in Chapter 2

caves. Most of the turquoise mosaic remains on the mask and the eyes contain conch shell inlays. Although detailed information is not provided, it is possible that the mask was offered to the buried elite.

Other Mixtec tombs

There are three other Mixtec masks kept in the MNA. All three show characteristics similar to the other Mixtec masks. The first mask lacks upper left half of its face, but most of the mosaics are retained and the eye has an inlay (Appendix 2: 1.1.20). The second does not retain much of its mosaic or the inlays of the eyes and teeth (Appendix 2: 1.1.21). The third looks like an anthropomorphic face with a fang (Appendix 2: 1.1.22). The provenances of these three masks are unknown; however, it is possible that they belong to the tombs of Zaachila, because it is often mentioned that the Zaachila tombs contained some turquoise mosaic objects including masks²⁵ (Bernal 1970: 361; Winter 1989b: 83; A. Miller 1995: 149-59). Zaachila, like Monte Albán, was one of the old Zapotec towns taken over by the Mixteca in the Postclassic period, and the tombs were reused by them (Bernal 1970: 359-61, A. Miller 1995: 157, Duverger 1999: 394-5). The grave goods of the Zaachila tombs are comparably as rich as those of Tomb 7 of Monte Albán, and a number of turquoise objects have been found (Bernal 1970: 361, Winter 1989b: 83; A. Miller 1995: 157).

7.2.2.1.3 Masks in European museum collections

There are four other wooden masks stored in European museum collections: two masks are in the British Museum in London, and the other two are in the Prehistoric and Ethnographic Museum in Rome. Those in London are thought to have been collected in 1519 by Hernán Cortés in southern Veracruz (Saville 1922: 8-21; Carmichael 1970: 25). The masks in Rome are supposed to have been part of the collected turquoise objects by the Spanish commandant of the expedition sent out from Cuba in 1518, and their provenance is attributed to Mexicanized Maya-speakers in Tabasco (Saville 1922: 3-8; Klein 1989: 138).

²⁵ These masks are displayed with the objects from the tombs of Zaachila in the MNA, but the provenance is not given.

Two of the masks seem related to Xiuhtecuhtli, and the other two to Quetzalcoatl. The first mask of London is completely covered with mosaic of turquoise, and the eyes and teeth are of white shell (Appendix 2: 1.1.23). It has been identified as Xiuhtecuhtli by the representation of a butterfly formed by darker tesserae at the centre of the face (McEwan 1994: 70). As discussed in Chapter 5, the butterfly is a symbol of fire, and by extension, of the god of fire Xiuhtecuhtli. One of the masks in Rome can be also considered as an aspect of Xiuhtecuhtli owing to the two Xiuhcoatl or his *nahual* attached to the both sides of the mask (cf. Biscione, et al. 1993: 29-30) (Appendix 2: 1.1.24). The other mask in London shows the characteristics of the turquoise mask of Quetzalcoatl offered to Cortés, which has reportedly a double and twisted snake forming the nose and surrounding the eyes (Sahagún 1953-81: Bk 12, 11; Carmichael 1970: 25) (Appendix 2: 1.1.25). The other mask in Rome is covered with mosaics of turquoise, malachite, shell, mother-of-pearl, black stone and garnet, with traces of pigment (Saville 1992: 62-3; Klein 1989: 139) (Appendix 2: 1.1.26). This mask displays a long upraised and pointed nose and a long tongue painted red that comes out from the mouth and terminates in the form of an animal head, possibly serpent. Biscione, et al. (1993: 30) suggest its identity to be Ehecatl-Quetzalcoatl because the protruding nose and tongue are analogous to the red beak attributed to the wind god. A similar turquoise mosaic object can be found in the National Museum of Denmark in Copenhagen (Appendix 2: 1.6.6). This specimen is a wooden carving of the head with a tall headdress and a protruding tongue, and one of its possible identifications is also thought to be Ehecatl (Royal Academy of Arts 2003: 474).

The difference in the visual characteristics of the masks that supposedly represent the same divinity may reflect regional cultural variations or may represent different aspects of the deities. Since the masks in Rome are supposed to have been collected in the Gulf Coast region, it is possible that they were produced for regional rituals, as in the case of the Ehecatl mask found in the cave in Naco (cf. Biscione, et al. 1993: 29-30). As for the mask of Xiuhtecuhtli, ethnohistorical information tells us that another type of mask, which was of greenstone horizontally striped with turquoise, was used in the capital for the

ritual of the month of Izcalli (Sahagún 1953-81: Bk 2, 159). Because the ritual of Izcalli was dedicated to the fire god, this mask of greenstone and turquoise may represent the concept of fire attributed to Xiuhtecuhtli. Likewise, the two masks of Xiuhtecuhtli in London and Rome may embody other aspects of the god, such as the solar and the time-related aspects, depending on the context.

7.2.2.1.4 Summary: symbolic implications of turquoise masks

Although masks made of turquoise mosaic were reportedly placed over the faces of statues representing many of the important Mexica gods or worn by their impersonators, no actual remains of such Mexica turquoise masks have been found so far (Klein 1989: 139; Sahagún 1953-81: Bk 9, 80; Bk 12, 11; Pomar 1975: 10-1). All of the masks mentioned in this section seem to have been produced far from the Mexica capital, and in fact, most of the surviving turquoise masks have been recovered from Mixtec caves and tombs (cf. Klein 1989: 139).

As for Mixtec caves and tombs, since very few of the identities of the buried persons are documented, the difference between the burials in caves and in tombs is not clear. However, whether reuse or original, the Mixtec tombs were generally constructed in the form of the underground chambers, which may represent the role of natural caves as a liminal place between the human world and the world of the spirits. From both the ethnohistorical information and archaeological remains, it can be concluded that in Postclassic Mixtec caves and tombs, the wooden masks with turquoise mosaics were associated with the dead elite. Because of lack of information about the excavated caves and tombs, and also because of continuous use of caves over a long period of time, it is difficult to know if the same masks were also used in rituals or if they were reused again in the later burials.

The funeral use of turquoise masks in Postclassic Mixtec culture can be paralleled with the use of jade masks to cover the faces of the honored dead in the Olmec, Zapotec and Maya cultures. For example, during the Classic period in the Maya regions, exceptional amounts of jade objects were produced, and one such object was the jade burial mask. An example is the Late Classic specimen recovered from the tomb in the Temple of the Inscriptions at Palenque (Garber, et

al. 1993: 228; Markman & Markman 1989: 91). As it is stated by Sahagún (1953-81: Bk 3, 45), a small piece of jade placed in the mouth of the dead symbolized 'life' in the other world. The earliest evidence of the use of jade beads for this funeral purpose can be found in the burials of the Early Formative site of San José Mogote, Oaxaca (Flannery & Marcus 2003: 55; Garber et al. 1993: 228). Green in Mesoamerica is the colour of water, the life-giving fluid, and also the colour of the maize crop, thus the symbol of life (Digby 1972: 10). It is generally accepted that jade masks were an example of the use of jade as a life preserver (Digby 1972: 11; Garber, et al. 1993: 228; Markman & Markman 1989: 91). In the Postclassic period, turquoise was widely introduced into Mesoamerica and was especially popular in the Central Valley and in the Zapotec-Mixtec region. The towns of the Zapotec-Mixtec region were subjugated by the empire of the Central Valley and they were obliged to pay tribute in the form of turquoise objects (Paddock 1970: 201; Monaghan 2001: 478; Pasztory 1983: 275). Therefore, I suggest that in the Zapotec-Mixtec region, turquoise as a new blue-green precious mineral was chosen to symbolize life after death as jade used to do in traditional Mesoamerican cultures. The combination of mask as a device to transform the wearer into the divine force, turquoise as life, and the caves or tombs as the liminal place linking the natural and divine worlds would perfectly suit the elite funeral context. The greenstone mask with turquoise mosaic found in the cave in Guerrero is probably a transitional example of the use of turquoise representing life before the symbolism of turquoise as life was rooted in the Postclassic.

7.2.2.2 Shields/Disks

As shield is a piece of armour, normally a square or circular plate of wood or metal, held in front of the body for protection in fighting. Shields were used in warfare and rituals in Mesoamerica (Saville 1922: 68). The round shields which I take up in this study did not have a long tradition in Mesoamerica and were brought into the Central Mexico during the Early Postclassic period from the

Maya area (Hassig 2001a: 810)²⁶.

Because turquoise was a highly valuable material, the round shields covered with turquoise mosaic may have been for the use of elites and possibly for rituals. For example, Tezozómoc, a seventeenth-century Nahuatl historian, narrates the actual use of turquoise mosaic shields in the war between the eighth Mexica lord Ahuizotl and the towns of Xochtlan, Amaxtlan, Izhuatlan, Miahuatla, Tehuantepec, and Xolotlan, in the region of the Isthmus of Tehuantepec, Oaxaca (Tezozómoc 1987: 537-45). The warriors of this region were said to be richly attired with feather-work ornaments, round turquoise mosaic mirrors (*xiuhtezcatl*), shields with greenstone in the centre surrounded by turquoise mosaic (*xiuhchimalli*). It is recorded that this region was assigned to pay a packet of unworked turquoise stones and ten turquoise masks as part of tribute to the capital, although there is no known local source of turquoise (Codex Mendoza: fol.40r; Matrícula de Tributos: fol.20; Klein 1986: 139) (Figure 7.3). Because warfare was considered to be a ritual related to the solar cult as a way to capture sacrificial victims alive to be offered to the sun, richly decorated turquoise mosaic mirrors and shields may have been also used in actual warfare.

In this study, the category of the shields, which are always round, includes some decorated disks, because sometimes it is difficult to determine the functions of the disks only by their physical appearances. I distinguish round shields of 20 to 40cm in diameter from much smaller disks or circular plates of less than 20 cm in diameter, because smaller disks may be ornaments rather than shields. Thirty-four shields or disks are listed in Appendix 1, but in this section only the non-Mexica shields are discussed: twenty-three from the caves in the Zapotec-Mixtec region, one from the Zaachila tomb, four from Chichén Itzá, and one from Tula. The two shields in European museum collections are also studied for comparative purposes.

²⁶ Early examples of round shields can be found in the mural paintings of Cacaxtla around the 8th century (Foncerrada de Molina 1993: Lám. I & XIV).

7.2.2.2.1 Shields found in Zapotec-Mixtec caves

The association of shields with caves is limited to the Postclassic Zapotec-Mixtec region: three from Cheve, eight from Acatlan, six from Santa Ana Teloxtoc, and six others from other caves in Tehuacan.

Cheve

Three wooden shields with turquoise mosaics were recovered from one of the galleries of the same Cheve cave in which the one turquoise mask was found (González Licón & Márquez Morfín 1994: 232-4). González Licón and Márquez Morfín (1994) explain that in this cave, artifacts dated from Classic to Postclassic times were recovered, and these objects imply that this cave was used continuously for a long time, and that some kind of rituals other than burial took place inside. In the gallery, besides the three shields, greenstone beads, shells, ceramic plates, two wooden square tablets decorated with turquoise mosaics, and two vessels in form of the bat deity were found. It is helpful to discuss the wooden tablets and the vessels in the form of a bat in order to picture the context, because there is no detailed description of the three mosaic shields.

Both of the square mosaic tablets display war-related scenes. One of them describes the scene of war with many armed personages, a ball game court, and a few calendric signs (Appendix 1. 1.4.1). The calendric signs suggest that it possibly represents scenes of particular battles or incidents. Because of the poor condition of the remaining mosaic, it is difficult to interpret more details. The other tablet shows only a shield with four arrows, which is similar in style to the symbol of war and victory depicted in the codices (Appendix 2: 1.4.2)²⁷. Since the sophisticated style and technique of these illustrations seem similar to the Mixteca-Puebla painted manuscripts, it is highly possible that the two square tablets belong to the Postclassic Mixtec culture (González Licón & Márquez Morfín 1994: 233).

The two vessels in the form of bats are made of small pieces of stones and

²⁷ For example, in the scenes of the Mexica conquest of other towns described in the Codex Mendoza (fol. 3v-16v), a shield with crossing four arrows often appears with the image of the Mexica ruler.

clay and painted red (González Licón & Márquez Morfín: 1994: 233). González Licón and Márquez Morfín (1994) report that they are of poor quality, but they do not give us a possible date. Because of its nocturnal life, the bat is commonly identified with life after death, darkness and sacrifice in Mesoamerican thought (Markman & Markman 1989: 93; Miller & Taube 1993: 44-5). The two bat vessels may have been associated with death and sacrifice of the captives of the war described on the wooden tablets, and the red paint may represent the colour of blood.

González Licón and Márquez Morfín (1994: 233) insist that, based on the dating of the materials found in the cave, the galleries were used in the Classic period for ritual practice and only the main chamber was visited during Postclassic times by those who came for the burials of the rulers and brought offerings and for ancestor veneration. However, considering the following four points regarding the five turquoise objects (three shields and two tablets) and the two bat vessels found in the gallery, I suggest that the galleries were also used during the Postclassic: 1) turquoise ore began to be used in large quantity only from the Postclassic; 2) art style shown on the two wooden tablets is the Postclassic Mixteca-Puebla; 3) round shields were utilized in Central Mexico only after Postclassic Toltec times (Hassig 2001a: 810); 4) the illustrations of the tablets, the shields and the bat vessels indicate strong war-sacrifice symbolism, which is a typical characteristic of Postclassic Mesoamerican religion²⁸. In addition, the round shields with turquoise mosaics represent the sun because of the shape and the colour of the sky in Nahuatl thought (Sahagún 1953-81: Bk 1, 81-2). It is often mentioned that Postclassic Mixtec religion shared many aspects with Nahuatl religion of the Central Valley, and that in both religions the sun was regarded as the god of the brave warriors (Dahlgren 1990: 214, 240). Therefore, it can be inferred that the galleries (or the gallery) were (was) a place for rituals related to a war and solar cult. On the other hand, it is obvious that the main chamber of the same cave filled with buried human remains, in which the

²⁸ Shift in the characteristics of religion in Mesoamerica is discussed by Heyden (1975, 1981), Pasztory (1976: 254-7), and Piña Chan (1972: 55-61) as mentioned in the paragraphs referring to the Teotihuacan cave (cf. Chapter 2).

turquoise mask was found, was used for funeral practice, commemoration of the dead, and by extension, probably for ancestor veneration.

Acatlan

From the same cave in which the eight turquoise masks were found, eight shields covered with turquoise mosaics were also recovered. The solar symbolism can be observed on the designs of the eight shields together with the eight masks found in the cave in Acatlan (Appendix 2: 1.3.4-11). Seven are apparently in damaged condition, and five retain only half of the shield. The design of each shield varies a little, but basically it consists of three to six rings of mosaics radiating from the centre. At least three shields have motifs of solar rays, which can be compared with the iconographic representation of the sun depicted in Postclassic Central Mexican codices and on sculptures, such as the Aztec Calendar Stone (Figure 6.19). For these seven shields, different shades of a soft, light-gray stone was employed in the outer zones, whereas darker stones interspersed with turquoise of varying shades, some almost white; bits of lignite and obsidian were also used (Saville 1922: 77). More turquoise applied for the inner circles might represent the intensity of the heat of the sun at the centre²⁹. However, because of lack of contextual information, it is not clear if the shields were used as offerings to the dead elite together with the eight turquoise masks that were also found in the same cave, or for rituals other than burials.

The eighth shield from Acatlan displays a complicated design similar in style to the wooden tablets of Cheve (Appendix 2: 1.3.11, 1.4). All the mosaics are of turquoise with different shades of colour, and twenty-eight small holes were made around the edge of the shield, which probably served for the insertion of feathers or other ornaments (Saville 1922: 72, 75). The design describes a mythological scene set in a solar representation with eight rays. At the top of the scene there is a horizontal sky band with a solar disk in the middle. From the solar disk a personage is falling down to a curved hill below, and two warrior figures flank the

²⁹ This concept can be observed in many iconographic representation of the sun depicted in the codices having the central part painted red and blue (e.g. Codex Telleriano-Remensis: fols. 40v, 42r, 42v, 44r).

hill. It is widely accepted that the glyph of the curved hill represents Huey Colhuacan, one of the origin places of the Nahuatl people of Central Mexico, and that the scene is interpreted as the myth of dynastic origin from the Nahuatl point of view (Saville 1922: 71-4; Pasztory 1983: 277)³⁰.

It is often mentioned that the Postclassic people of the Zapotec-Mixtec region shared the same origin myths with the Nahuatl, owing to the strong influence of the Mexica state in the Central Valley (Paddock 1970: 239). The Mixtecs sometimes claimed themselves as the descendants of the Toltecs and shared religious elements with them such as calendar signs, the use of calendar signs for personal names, the cult of Quetzalcoatl, and the solar cult combined with war and sacrifice (Dahlgren 1990: 88-9)³¹. However, in the Mixtec myths recorded by the Spanish chroniclers, a few variations concerning the mythological place of origin exist, depending on the region (Dahlgren 1990: 56-60). One of the places of origin is the mountain of Tilantongo, another place is the two trees on the river in Apoala, and the other is a tree in Achiutla³². However, similar to Central Mexico, in religion and myth, the sun was regarded as the god of the warriors and as the symbol of conquest and victory (Dahlgren 1990: 86-7, 214). Thus, it is highly probable that the scene of the shield represents a myth of origin (=mountain) and of the conquest and victory (the sun and warriors) in combination with the influence of Nahuatl mythology and iconography³³.

The decorated shield has parallels with the two shields kept in the museums in Vienna and London in terms of the Mixteca-Puebla art style and the motifs of the designs. The Vienna shield displays construction of motifs similar to the Acatlan design, but more elaborated (Appendix 2: 1.3.12). At the top, a horizontal sky band with a solar disk in the centre is depicted. There is a warrior

³⁰ The legend of Huey Colhuacan is set forth in *Tira de la Peregrinación Mexica* (1944) and in Tezozómoc (1992: 18-9).

³¹ As for the legend of the Mixtec as the Toltec descendants, see Torquemada (1976-83) and Ixtlilxochitl (1985).

³² The Mixtec myths were recorded by: Antonio de Los Reyes (1890) *Arte en la lengua Mixteca*. reprinted by Charencey, Paris; Francisco de Burgoa (1943) *Geográfica descripción de la parte septentrional del polo ártico de América*. AGN-P. XXV-XXVI. Mexico; Francisco del Paso y Troncoso (1905-15) *Papeles de la Nueva España*. 2nd. series, v. V, *Relaciones geográficas*. Mexico.

³³ The glyph of Colhuacan is an example of the Nahuatl influence (cf. Chapter 2).

figure standing inside the sun, and another figure is falling from the sun to a circular cave in the form of womb below³⁴. The cave is emerging from the opened jaw of an earth monster at the bottom, and a person is inside the cave. The expression of the cave is very similar to the iconography of Chicomoztoc, another origin place of the Nahua, as mentioned earlier (cf. Chapter 2). Between the sky band and the earth, twenty-one warriors are depicted. The composition of the sun, a descending man, the mythological place of origin (mountain or cave) and warriors is exactly the same as the Acatlan design.

The London shield bears a design with similar composition (Appendix 2: 1.3.13). At the centre a solar disk with four rays is depicted. The solar disk is inside a rectangular object, around which a great serpent is coiled. The object has been interpreted as a temple by McEwan (1994:76) because it is similar to the temple depicted in the Codex Borgia (pl. 34).

The temple is flanked by four warriors. Behind the temple there is a tree whose two branches spread horizontally at the top, and from the top centre of the tree a figure emerges. This tree may represent a Mixtec mythological place of origin. Therefore, this shield also displays the concept of origin and a solar cult in relation to warfare. The provenance and context of the Vienna and London shields are unknown, but they may have had a function similar to the Acatlan shield.

Santa Ana Teloxtoc

From the same gallery of the cave, in which the two masks with turquoise mosaics were found, fragmental remains of ten wooden shields, six of which show traces of turquoise mosaics, were recovered (Vargas P., et al. 1989: 115-9) (Appendix 2: 1.3.14-19). Two of them clearly show designs illustrated with turquoise mosaics. Both of the designs are composed of some four rings and other motifs, but it is difficult to identify because most of the mosaics have been lost (Vargas P., et al. 1989: 115-7). Likewise, the disordered condition of the recovered objects in the

³⁴ Although Feest (1990: 24) says the circle below is the moon, I think it is a cave because of its expression similar to Chicomoztoc, the womb-like cave from which the Nahua tribes originated, described in the codices (e.g. Kirchhoff, et al. 1989: fol. 16r).

cave makes it difficult to analyze the functions of the shields. Considering the similarities in style and form of the masks to those found in other caves of the region such as Acatlan and Tehuacan, it is highly possible that the designs represent solar motifs similar to other shields found in these caves.

Tehuacan

In the Ethnological Museum in Berlin five wooden mosaic shields and one mosaic mask are stored. The materials of the mosaic stone have not been analyzed, as mentioned earlier, but I suggest that at least some of the mosaics are of turquoise. According to Dr. M. Fischer of the museum (personal communication), they were found in a cave in Tehuacan, Puebla, together with the half-mask and four smaller mosaic objects and ornaments. They were brought to the museum by the Belgian artseller, Emile Deletaille, in 1971. Most of the mosaics of the shields are fallen off, but all of them show the similar pattern of the rings and rays of the sun. Four of them display a motif of asterisk (*) at the centre and four petal-like radiations, all of which may represent solar rays (Appendix 2: 1.3.20-23). The other shield shows the similar pattern of rings to the Acatlan shields (Appendix 2: 1.3.24).

Another shield with turquoise mosaics is kept in the Royal Museum of Art and History in Brussels (Appendix 2: 1.3.25). This is one of almost two hundred objects found in two caves in the Tehuacan region (Royal Academy of Arts 2002: 474-5). The objects from the caves include other incomplete shields, which are undecorated or have lost their decoration, a human mask, wooden armatures covered in *amatl* (native plant) paper, offerings of maize and bundles of vegetables (Royal Academy of Arts 2002). It is probable that the mosaic objects kept in Berlin are part of the group of objects recovered from these caves. The shield consists of five rings of turquoise mosaics. The central circle bears the darker blue mosaics, which may represent the intensity of heat as in the case of the other shields of Acatlan.

7.2.2.2.2 The shield found in the Mixtec Tomb Zaachila

A gold disk or shield with turquoise mosaic was found in a Mixtec tomb in Zaachila (Appendix 2: 1.3.26)³⁵. The Zaachila tombs were reused by the Postclassic Mixtecs, and this gold disk was one of the rich grave goods offered to their buried elite (A. Miller 1995: 156-9). The backing material of the disk is unknown, but the surface is covered with gold leaf, and the circle at the centre and the two outer thin rings are filled with turquoise tesserae. The technology of goldsmithing was brought into Mesoamerica from Central America through systems of overland trade during the Classic period, and by the Late Postclassic the Mixtecs acquired a reputation as master goldsmiths (Smith 1998: 103-4). Gold was regarded as one of the precious materials, and in Mixtec elite tombs and burials, especially Tomb 7 of Monte Albán and Tomb 1 of Zaachila, many gold ornaments, such as pectorals, rings earplugs, diadems, beads, pendants, were buried. In Central Mexican religious thought, gold as well as turquoise was recognized as a product of the sun, and the solar deities were often associated with them (Miller & Taube 1993: 90; Hosler 2001a: 457). Therefore, the gold disk with turquoise mosaic may embody not only a precious offering but also a symbol of the sun. It should be noted that turquoise mosaic at the centre of the disk implies again the idea of the intensity of the heat.

Summary: Mixtec turquoise shields

A common element of the turquoise shields found in Mixtec caves is the design of the sun. Considering the role of caves as a place for burials, ancestor veneration and water-fertility cult, this solar symbolism may indicate that these objects were used in either of the following three contexts: first, as offerings to the dead elite; second, as a solar element in the water-fertility cult; third, for commemorative rituals of the achievements of ancestors. Especially the decorated shield of Acatlan that shows the combined concept of ancestor veneration (mythological origin) and solar-war cult supports the possibility of the third context. Likewise, it is possible to suggest the presence of rituals related to solar-war cult in caves,

³⁵ This disk is currently displayed in the Sala Oaxaca, National Museum of Anthropology, Mexico. From which tomb in Zaachila it was recovered is unknown.

which may have been a phenomena particular to the Postclassic period.

A considerable number of specimens found in caves and tombs in the Zapotec-Mixtec region imply the active production of turquoise objects in this area. The Mixtec kingdoms subordinated to the Central Mexican Triple Alliance and were required to provide regular tribute payments and occasional military support in war (Monaghan 2001: 478). Although it is not stated in ethnohistorical documents, it is generally accepted from the similarities of artistic style of the objects that the Mixtec paid tribute in finished turquoise objects to the capital, besides their local use of a large amount of turquoise (Pasztor 1983: 277; Townsend 1992: 185). This way of the Mixtec use of turquoise suggests the possibility of an unknown trade network of turquoise developed by the people of the Zapotec-Mixtec region to obtain the ore.

7.2.2.2.3 Shields found in the offerings: Tula and Chichén Itzá

Considering the small number of turquoise objects found in the Maya region, it is safely concluded that the Maya people were not as enthusiastic about the production of turquoise objects as the people of the Central Valley and the Zapotec-Mixtec region. Morris, et al. (1931: 197) state that, judging from the clothing imagery carved in stone, the Maya made and wore no small amount of mosaic ornaments, but it is not known if they worked in turquoise. Even though the contemporary Maya and Toltecs had two-way interaction, turquoise objects found in Chichén Itzá clearly show the strong unilateral influence from the Central Valley (Morris, et al. 1931: 197; Toscano 1952: 495; Sharer 1994: 397, 407, 716-9; Cobean & Mastache 1995: 179-80).

Four turquoise shields of Chichén are always compared with a back shield of Tula, because of their material and design (Appendix 2: 1.3.27-31). The first shield from Chichén was found cached in a covered limestone vessel beneath the floor of the Temple of the Chacmool, which was later incorporated into the platform of the Temple of the Warriors (Sharer 1994: 719). Three similar disks were later found in the buried temple under El Castillo, two in the same box with the carved jadeite, and the third on the seat of the Red Jaguar Throne (Sharer 1994) (Appendix 2: 1.3.29-30). Those wooden shields were covered with

mosaics of turquoise, pyrite and shell, and the mosaics form a quatrefoil design of four animal figures surrounding a circular disk at the centre. This animal is identified as a plumed serpent by A. Morris (1974: 340), an eagle by Solís (1998: 142), and a Xiuhcoatl by Toscano (1952: 495) and Cobean and Mastache (1995: 180). Since the similar motif of the Toltec atlantean back shield is regarded as Xiuhcoatl, it is natural to think the animal of the Chichén shields is also the same mythical being (for the visual characteristics of Xiuhcoatl see Chapter 6).

This design is said to be identical to the Toltec back shield found in one of the two offerings which were placed at the centre of the Burned Temple of Tula, dated to between A.D. 900 to 1000 (Cobean & Mastache 1995: 178-81). The Toltec established the Postclassic turquoise-trade network, and their capital of Tula was considered by the Mexica in the later period to be the capital of Quetzalcoatl, the Toltec patron god, who was the mythic discoverer, merchant, and owner of the gemstone sources, and who owned a house lined with turquoise (Aguilera 2001: 277; Sahagún 1953-81: Bk 3, 13). The Toltec wooden shield displays four divided parts and serpents comprising 3,000 tesserae of turquoise and shell (Cobean & Mastache 1995:180). At the centre of the shield there are two small holes through which a string was possibly threaded to tie the shield to the back of warrior. This shield is said to be very similar to the back shields carried by the atlantean warrior columns of Mound B at Tula (Cobean & Mastache 1995). About thirty centimeters below the shield, 1,600 small pieces of red shell were recovered; the pieces are supposed to have formed a breastplate or a pectoral similar to that of the atlanteans (Cobean & Mastache: 1995). These offerings of shield and breastplate can be interpreted as part of the adornments of the rulers of Tula, or the governor-warrior represented in the atlanteans (Cobean & Mastache 1995: 178, 180). Thus, the four Chichén shields may also be a symbol of warriors of high rank.

In addition, Toscano (1952: 492) reports that a turquoise pectoral in the form of a butterfly was also found in Chichén. The butterfly pectoral was one of the Toltec warrior's ornaments together with the back shields (Cobean & Mastache 1995: 180). Therefore, from the evident traits of Toltec art style, it seems likely that these Chichén shields were brought from the Central Valley as treasured

objects dedicated to the rulers or the warriors (Morris, et al. 1931: 197; Toscano 1952: 492; Sharer 1994: 397).

All the attributes attached to these shields, i.e., armour (warfare), turquoise, Fire Serpents, and quatrefoil design or four cardinal directions represent an aspect of the religious shift to a solar war cult in the Central Valley, which recent studies by Ringle et al. (1998), Ringle (2004), and (Graulich 2001, 2002) explain that the shift in religious idea was effected by the spread of the cult of Quetzalcoatl among the major Epiclassic sites such as Cacaxtla, Cholula, El Tajín, Xochicalco and Chichén Itzá. The Chichén shields are good examples showing the Postclassic Mesoamerican economic-cultural network, in which turquoise mineral imported from the far north of the Southwest region was processed into treasured objects representing the religious concept of the Central Valley and finally offered to the Maya elite of Yucatan. Regarding the turquoise objects, most of the Maya pieces show strong influence of the contemporary cultures of the Central Valley already from Toltec times. This does not deny the production of turquoise objects in the Maya area, as a few of them represent Maya art and religion, such as the diving figure scepter recovered from the Cenote (Appendix 2: 1.12.2). However, it is clear that the Central Mexican cultures took the leading role in producing turquoise objects during the Postclassic period.

7.2.2.2.4 Summary: symbolic implications of turquoise shields

Decorated shields in general were produced as tribute to the capital of Tenochtitlan and used in warfare, ritual and as ornament. The Codex Mendoza and the Matrícula de Tributos reported that many richly decorated shields were paid as tribute to the capital. On the other hand, as a few ethnohistorical documents attest (e.g. Tezozómoc 1987: 537-45), the shields covered with turquoise mosaic were also employed in actual battle, because they were effective for protection, and also because round shields covered with turquoise mosaic represented the sun itself. For example, in one of the Nahuatl adages regarding the sun, there is an expression using the turquoise shield, *xiuhchimalli*, representing the sun because of its round shape and sky-blue colour (Sahagún 1953-81: Bk 1, 81-2). Likewise, all the Mixtec, Chichén and Toltec turquoise

shields display designs related to the solar symbolism. Thus, especially in Postclassic Mesoamerica, the turquoise shield embodies the solar cult, because fighting in war and capturing victims to be offered to the sun was part of the important rituals of the solar cult.

It can be also suggested that seven small disks—six Mixtec and one Tarascan—covered with turquoise mosaic (all without contextual information) are imitations or miniatures of those shields representing the sun (Appendix 2: 1.8). At least five of the Mixtec small disks display the solar motifs of rings and rays, similar to the shields found in caves and to the Chichén shields (Appendix 2: 1.8.1, 3-6).

The major difference between the characteristics of turquoise masks and shields is their precedent Mesoamerican traditions. The mask was a traditional ritual object, and its basic function and symbolism were already established from the oldest time. Then a new Postclassic mineral of turquoise was employed to modify regional ritual practices by absorbing and replacing the traditional concept, such as the use of turquoise instead of jade as a symbol of life. On the other hand, all of the concepts related to turquoise shields, i.e., round shape, turquoise, solar-war cult, are Postclassic products. Therefore, turquoise shields connote more flexibility to express a Postclassic proper concept, namely the solar-war cult represented by the nature of shield as armour, the round shape of the sun, and the turquoise colour of the sky. Thus, this different manner in the employment of turquoise for masks and shields represents an example of the potential flexibility of metaphoric conceptualization of a new material.

7.2.2.3 Interpretation of other mosaic objects

Most of the turquoise mosaic objects other than masks and shields are stored in museum collections with very little original contextual information. The functions and meanings of these objects, however, can be interpreted by consulting ethnohistorical documents and other visual representations (painted manuscripts and sculptures). It seems that the major concepts related to many of these turquoise objects are war and sacrifice.

Concept of war: jaguar, butterfly and ear ornaments

The elements associated with the concept of war on the mosaics are jaguar, butterfly, and ear ornaments. Among the eleven deity and animal figures represented, four of them take the form of a jaguar, and there is also one pectoral of a jaguar (Appendix 2: 1.6.1-4, 1.7.2). In Mexica cosmology jaguars or *ocelotl*, together with eagles, were regarded the bravest and fiercest of animals, and by extension, represented valiant warriors (Saunders 2001c: 67). By taking more than four captives in war to dedicate them to the sun, a Mexica warrior could become a member of either the aristocratic military orders called eagle warriors (*cuacuauhtin*) or jaguar warriors (*ocelome*) (Hassig 2001c: 322). While the eagle represented the living sun traveling across the sky, the jaguar symbolized the sun passing through the underworld in need of human blood to bring itself back to life at dawn in the east, and thus, the solar or sky symbolism is implicit in the turquoise inlays of these jaguar objects (Royal Academy of Arts 2002: 476)³⁶. In addition, the patron deity of jaguars was Tezcatlipoca in the guise of Tepeyollotl ('heart of the mountain') or the fertility god of the earth (Anders, et al.: 1991: 128; Quiñones Keber 1995: 167). The four jaguar figures may have represented brave warriors and may have been used in rituals related to jaguar warriors, and the pectoral may have been worn by one of jaguar warriors.

As discussed in Chapter 6, from Toltec times, butterflies symbolized warfare, souls of dead warriors, and fire in the Central Mexican thought and iconography, and the pectoral in the form of a butterfly was a symbol of warriors and of the solar and fire deities. There are two butterfly pectorals covered with turquoise mosaic stored in museum collections. One has a Mixtec provenance and the other is said to be in Toltec style and was found at Chichén Itzá; both have no detailed contextual information (Toscano 1952: 492). The Mixtec pectoral has three projections on each side, the form of which differs from the Mexica pectoral with two projections, and is very similar in style to the pectorals worn by the

³⁶ The jaguar was the animal of 'the sun of the earth' and an aspect of Tezcatlipoca, as represented in a sculpture of a serpent-jaguar of the Ethnographic Museum of Berlin (Graulich 2001: 13). Because Tezcatlipoca was regarded as opposed to Quetzalcoatl-Feathered Serpent as the diurnal aspect, the jaguar-the earth-sun possibly represents the nocturnal aspect of the sun.

Toltec atlanteans (Appendix 2: 1.7.3) (cf. Figures 6.8, 6.41a). As mentioned before, in some Mixtec regions there exist versions of an origin myth claiming that the Mixtecs were descendants of the Toltec dynasty, possibly because, as was the case with the Mexica, it was regarded as honorable to be part of the Toltec lineage (Dahlgren 1990: 61-9). A photograph of the Chichén pectoral is not provided, but based on Toscano's information (1952: 492) it looks like the Mixtec pectoral, and it is highly probable that this item was taken to Chichén via the same trading route that brought the Toltec shields. Therefore, these pectorals in Toltec style must represent not only the solar-war concept but also the heritage of the glorious Toltec culture, and possibly were worn by honoured warriors or offered to the solar deities.

It is recorded that the turquoise ear ornaments were worn by Mexica warriors (Sahagún 1953-81: Bk 8, 43; Bk 10, 177). As shedding blood from the ear lobes was believed to nourish the fire and the sun, wearing turquoise earplugs possibly was related to the solar cult (Sahagún 1953-81: Bk 2, 35, 164, 204; cf. Bk 1, 30). Likewise, turquoise ear ornaments were part of the paraphernalia of the following deities and their impersonators: Huitzilopochtli (Pomar 1975: 10-1), Xiuhtecuhli (Sahagún 1953-81: Bk 2, 164), Tezcatlipoca (Sahagún 1953-81: Bk 2, 69), Quetzalcoatl (Sahagún 1953-81: Bk 1, 9; Bk 12, 11-2), and Chalchiuhtlicue (Sahagún 1953-81: Bk 1, 22). Among these deities the first three are closely related to the concept of war and the solar cult, as studied in Chapter 6. The specimens of the turquoise masks representing Quetzalcoatl, mentioned above, relate turquoise ornaments to this deity. Moreover, three headbands covered with turquoise mosaics in the form of the phonetic glyph 'xihuitl', another turquoise ornament attributed to Quetzalcoatl, were recovered from the Templo Mayor (Appendix 2: 1.11.2-4). Since Quetzalcoatl was a symbol of the Toltec dynasty that I have argued established the turquoise trading network, and was also believed to be the one who taught the skills of lapidary and mosaic works to the Toltecs, it seems likely that the Mexica tended to associate turquoise with this deity (cf. Sahagún 1953-81: Bk 3, 13; Bk 10, 166-8). In the case of Chalchiuhtlicue, however, there must be a confusion between *chalchihuitl* (greenstone in general) and xihuitl (turquoise), because this goddess mainly

represents water and jade, the idea which is expressed by her name, meaning ‘jade skirt’, and also because other sources besides the Florentine Codex do not mention turquoise ear ornaments as part of her adornment (cf. *Primeros Memoriales* fol. 293v).

In Appendix 2 (1.9), sixteen ear ornaments are listed, and seven of them have been recovered from Mixtec contexts; three are from caves (Appendix 2: 1.9.1-3); four from the tombs (1.9.4-7); and the last one from Puebla with no contextual information (1.9.8). A total of three earplugs, one from Acatlan, another from Ejutla cave and the other from Puebla are spool-shaped, and in the case of the Acatlan and Puebla earplugs, the mosaics were applied on part of the round edge possibly symbolizing the sun. In addition, it is reported that the Huitzo specimens from a funeral context were found disintegrated at the level of the ears of the buried elite (Flannery 2003: 319). Considering these facts, it is suggested that these earplugs were possibly offered to the dead elite, or used in rituals as a symbol of the brave warrior who dedicated his life to the sun, or represents one of the deities mentioned above. On the other hand, the one from Tehuacan looks very similar to the trapeze-and-ray ear ornaments of Coyolxauhqui (cf. Figure 6.15). Therefore, this ear ornament in the form of the tail of the Fire Serpent implies that rituals related to the solar cult were performed in this cave.

Concept of sacrifice: knife handles

The concept of sacrifice or death in war is clearly represented by the three knife handles listed in Appendix 2 (1.5). The functions of flint knives are interpreted to have been ‘to tear, to cut, and to yield blood’, or the act of sacrifice itself (Nagao 1985: 62-3). In Mesoamerica the instruments for sacrificial rituals were often elaborately decorated or sometimes personified; all three knife handles are in the form of figures covered with coloured mosaics including turquoise.

Of the first three knives, two are only handles lacking flints. The wooden handle of the knife in British Museum forms a crouching figure of a man wearing an eagle headdress (Appendix 2: 1.5.1). This human figure clearly represents an eagle warrior, which is the other title of the elite warriors along with jaguar warrior (Carmichael 1970: 16; Royal Academy of Arts 2003: 474). As Sahagún

(1953-81: Bk 7, 1) states, the sun was regarded as 'the soaring eagle, the turquoise prince, the god'. Thus, by combining the eagle warrior and flint, this handle perfectly represents the solar cult.

The two knife handles covered with mosaics in Rome also represent crouching figures; one is a human figure wearing a long manta or cotton cloak, and the other an animal which is interpreted as a fire serpent or a crocodile (Appendix 2: 1.5.2-3). The identity of the human figure is unclear, but it is thought to represent a priest engaged in sacrificial rites (Royal Academy of Arts 2002: 474). The animal figure is difficult to identify, but its back-turning snout shows a typical characteristic of fire serpents (Biscione, et al. 1993: 28).

At least two of the specimens, namely the eagle warrior and the fire serpent, are representations related to the concept of the solar cult. The use of these knives in actual rituals of human sacrifice dedicated to the sun is highly possible, and thus, it can be said that these handles represent not only the concept of sacrifice but also are related to war and the solar cult.

7.2.2.4 Summary and discussion: mosaic objects

The employment of turquoise mosaic seems to have been suited for expressing the Postclassic Mesoamerican cultural changes in terms of turquoise material symbolism and physical characteristics. Regarding its material symbolism, as observed in the previous subsections, turquoise mosaic was applied mainly on the objects related to the solar cult (e.g. shields, jaguar and butterfly figures, and knife handles), and also sometimes turquoise took over the traditional symbolism of jade due to its blue colour (e.g. masks), depending on the types of objects to which it was applied. The historical role of the Toltecs in long-distance trade and their legendary association with turquoise could be another factor to increase the importance of turquoise, especially in the case of the Postclassic Central Mexican and Mixtec people.

It seems likely that during the Postclassic period, the manufacturing technique of mosaic works in general became more sophisticated. This development includes the employment of smaller tesserae and of various colours in various materials for design. One of the earliest examples of such a shift may be the

beveled-edge mosaic technology of turquoise established by the Classic Chalchihuites people. Compared to other mosaic materials, the major characteristics of turquoise mosaic is that various hues of turquoise make it possible to describe patterns or mythological scenes on the objects (e.g. shield designs). Likewise, turquoise is not as hard as jade, a fact which makes it much easier to cut and shape into smaller pieces for complicated designs and small objects (Weigand & Harbottle 1993: 161; Sahagún 1953-81: Bk 9, 82). It is possible that turquoise was preferably employed due to its physical flexibility for manufacturing along with its symbolic and historical importance.

7.2.3 Bead objects

A bead is a small globular or tubular piece of stone, glass, or other material, often with perforations, for threading to make necklaces, bracelets, rings and other small ornaments, and also sometimes sewn on to fabric for decoration. The manufacture of stone beads has long history in Mesoamerica. The earliest documented use of greenstone in Mesoamerica occurs as beads in the Barra phase (c. 1500 B.C.), prior to the Olmec civilization, on the Pacific coast of Chiapas (Garber et al. 1993: 211). It is known that the Olmec elite already adorned themselves with necklaces, bracelets, and other items made by stringing together greenstone beads (Diehl 1990: 64). One of the earliest bead objects recovered from La Venta (eighth-sixth century B.C.) is a so-called 'belt' made of sixty odd jade beads found in Tomb C, the cist floor of which was covered with a thick deposit of red cinnabar containing many jade earspools and other ornaments and objects arranged as they would have been on a human body, although no actual human remains were found (Diehl 1990).

It can be said that the technique of manufacturing beads is much simpler and older than that of beveled-edge mosaic. In addition, with beads, the potential capacity of artistic expression may have been more limited than with mosaics, because mosaics can be employed to cover any type of object whereas beads can

be used only for necklaces, bracelets and other string ornaments³⁷. Especially in the case of turquoise, compared to mosaic objects, the amount of bead ornaments found in archaeological sites and stored in museum collections is relatively small. In the archaeological finds the strings are often already perished, and it is difficult to reconstruct the original jewelry and to judge if the beads comprised bracelets, necklaces or other types of ornaments or parts of clothing.

Both archaeological evidence and ethnohistorical information tell us that turquoise bead ornaments were exclusive to the elites. A total of sixty-eight entries of turquoise bead objects are recorded in Appendix 1, but those with clear contexts are limited to the fifty-five entries from Tomb 7 of Monte Albán and two from the offering of the Templo Mayor (As for the offerings, the details are studied in the next section 7.3). In the following subsections, first the contexts in which turquoise bead ornaments were used are examined. Then the functions and meanings of turquoise beads are discussed based on ethnohistorical information.

7.2.3.1 Contexts

Archaeological evidence indicates that turquoise bead ornaments were offered to the dead elites in a funeral context. Some of the examples are those found in Tomb 7 of Monte Albán. According to Caso (1969: 147-9, 249-62), thirty-eight turquoise (and some jade of similar colour) bead ornaments and seventeen mixed bead ornaments (turquoise, pearl, silver and gold) were recovered from Tomb 7 (Appendix 1: 2.1.2-56). It is reported that a total of ninety-four items of turquoise were found in this tomb including small plates (plaquitas) and small objects; obviously the bead ornaments occupy the major part of the turquoise objects (Caso 1969: 249-62). Most of the beads are round, but some are cylindrical or tubal (Caso 1969: 148). Caso (1979: 59) reports that there were remains of about nine humans, but with bones scattered about the tomb, it was difficult to determine whether the beads were worn, were placed over the buried persons as their ornaments, or were just buried with the bones.

³⁷ Caso (1969) reports that in Tomb 7 there were remains of a bead ornament of silver and turquoise, which may have originally formed a pectoral.

A safer conclusion of the meaning of the bead ornaments is that they were regarded as luxury elite ornaments, but it can be also interpreted that turquoise beads were regarded as a symbol of energy and life, a symbolism similar to that of turquoise (and jade) masks. As jade and turquoise might often have been employed as the same material in terms of colour, in the case of bead ornaments the symbolism of turquoise may have overlapped with that of jade. Such examples are reported in ethnohistorical documents, as explained in the following subsection.

7.2.3.2 Functions and meanings

Turquoise stone was thought to have healing power in Mexica society. Sahagún (1953-81: Bk 11, 188-9) tells us that a kind of turquoise stone called *xiuhtomoltel* or fine turquoise was drunk by those who suffer from ‘flashed lightning’, ‘dementedness’ and ‘congested heart’. The arm bracelets made of *xiuhtomoltel* were also believed to protect the wearer from these ailments (Sahagún 1953-81: Bk 11, 189). Likewise, jade was believed to have medical effects, such as relief of the pains of the kidneys (Heyden 1971: 263-4).

One example of the actual use of turquoise bracelets is as part of the Mexica ruler’s adornments when he danced (Sahagún 1953-81: Bk 8, 27-8, 55-6). It is recorded: ‘the ruler was greatly concerned with the dance, the rejoicing, in order to hearten and console all the peers, the noblemen, the lord, the brave warriors, and all the common folk and vassals’ (Sahagún 1953-81: Bk 8, 55). Thus, the ruler’s dancing had the effect of giving power to others, and turquoise objects are thought to have represented this power of life. This information reminds us that turquoise, jade and bracelets are juxtaposed as a metaphor of energy and purity of life in the prayers and discourse of the rulers (e.g. Sahagún 1953-81: Bk 6, 36, 113, 115, 176; Bk 8, 16, 51) (cf. Chapter 5). Therefore, it can be said that turquoise bracelets had a practical function as a healing medicine as well as represented life, energy and power.

This function and symbolism of turquoise as representing healing and power probably originated from the native groups of the state of New Mexico, in the United States (the Southwest). As mentioned before, the Southwest region was

abundant in turquoise mines from which the Mexica imported turquoise. In the Southwest, turquoise is still believed to protect the wearer against contagion and is effective in affairs of the heart (Pogue 1915: 124). Likewise, the Southwest people, such as the Pueblo, Pima, Zuñi, Apache, and Navaho, relate turquoise with either the emblem of medicine men or the healing power against the ailments (Pogue 1915). Therefore, it is probable that the turquoise bead ornaments buried with Mixtec elites in Tomb 7 may have represented the concepts of life and energy in the afterlife, which is the same role jade traditionally played.

7.2.3.3 Summary and discussion: bead objects

Compared to the great amount of jade beads recovered from the archaeological sites, turquoise beads are minor finds. Considering the relative ease in working turquoise rather than jade, the small amount of turquoise beads, and the preference of turquoise use in mosaics suggests that manufacturing of mosaics was economical of mineral sources at hand, because it is logical to think that more mosaics could be produced from a single ore than beads. In addition, there is no Mesoamerican peculiar association of turquoise beads with specific objects or contexts (other than the general elite context), as in the case of turquoise mosaic with masks and shields. Thus, it is supposed that turquoise bead ornaments did not have a particular symbolism in Mesoamerican cultures. However, generally speaking, it can be concluded that turquoise mosaic objects represented concepts related to both the solar cult and to life symbolism, whereas turquoise bead objects, similar to jade, were mainly related to the concept of life and energy.

7.2.4 Discussion: turquoise in Mesoamerica

In this section, the importance of turquoise in Mesoamerica, especially in Central Mexico and the Zapotec-Mixtec region, is discussed in a wider context, namely, in comparison with West Mexico and the American Southwestern cultures. The central issues are manufacturing technique and the role of turquoise in mythology.

Manufacturing technique

The Postclassic Central Mexico and Zapotec-Mixtec region obtained turquoise ore from the Southwest via the coexisting Tarascans in West Mexico. In the following paragraphs, the difference in manufacturing techniques of turquoise objects in these regions is discussed.

The Tarascans inhabited occupying the modern state of Michoacan, were famous for their resistance against the powerful Aztec empire (Weigand 1992: 60-1; Karasik 1993: 72; Schöndube 1996: 18). Turquoise objects were worn by the nobles and elites in Tarascan society (cf. Michelet 1998: 55; Craine & Reindorp 1970: plate 44). However, the Tarascans were not considered as celebrated as the contemporary artisans of the Mixtec region of Oaxaca (Townsend 1992: 185). The standard quality of the finished objects of Tarascan culture seems less sophisticated than that of the Mixtec and other Central Mexican crafts. Even though West Mexico is supposed to have been an intermediary region in the ancient long-distance trade between the Central Valley and the Southwest, not many turquoise specimens have been reported, and the range of objects does not vary.

In general it is obvious that turquoise objects manufactured in the Zapotec-Mixtec region and Central Mexico are much more complicated in form and design than those made in West Mexico and the Southwest. For example, turquoise mosaic tesserae used in Central Mexico are much smaller, the surface of mosaic works looks smoother without any gaps among tesserae, and mosaics often comprise complicated designs through the application or use of different shades of colour. In West Mexico mosaics are cruder and gaps can be found on the mosaic surface; nor is colour paid much attention (cf. Appendix 1: 1.7.5, 1.8.7, 1.9.15-16, 1.10.2-3). In West Mexico, the types of objects to which turquoise mosaic is applied seem limited to smaller ornaments, such as ear and lip ornaments. Likewise, in West Mexico beads are cruder than those of the Zapotec-Mixtec region, and larger pieces of ore are often employed for pendants (cf. Appendix 1: 2.1.62-66). A less well developed manufacturing technique can be also seen in the turquoise objects manufactured in the Southwest, but it is also notable that a whole stone of turquoise could be employed for carvings in the

Southwest, possibly due to proximity to the mineral sources (Figure 7.6).

The more finely developed manufacturing technique in Central Mexico and in the Zapotec-Mixtec region (as compared to West Mexico and the Southwest, where turquoise minerals were more abundant) could have been affected by the following four facts. First, artistic awareness in general in Central Mexico and the Zapotec-Mixtec region was highly developed as a result of a long history of cultural complexity. Second, the physical characteristics of turquoise minerals were suited to the manufacture of complex objects. It is also possible that the limited amount of mineral reinforced the economical use of the material, such as manufacturing smaller tesserae and beads. Third, the colour of turquoise was consonant with traditional jade symbolism and could be adapted to embody Postclassic conceptual changes, especially in religious expression, such as placing emphasis on the solar-war cult. Fourth, to inherit and develop the turquoise trade network established by the Toltecs may have meant to justify political ascendancy in Postclassic Central Mexico, and by extension in Mesoamerica. Thus, turquoise was a mineral that was easily grafted onto Mesoamerican native cultural expression (in this case except West Mexico). However, the symbolism of turquoise seemed not yet stabilized, which can be observed in the role of turquoise in mythology, as discussed in the next subsection.

Role of turquoise in mythology

Since turquoise minerals are relatively abundant, turquoise has long occupied and still retains a prominent place in mythology and folklore of the Southwest (Pogue 1951: 122). This stabilized objectification of turquoise in the Southwest can be contrasted with the absence of turquoise in Mesoamerican mythology.

In Southwestern beliefs, turquoise has healing and protective powers, and is a symbol of the sun, west, and water. Some examples are as follows (Pogue 1951: 122-8). The Pima Indians believe that the loss of a turquoise is due to magic, and that the unfortunate loser will be afflicted with some mysterious ailment which will yield only to the skill of a medicine man. Then the medicine man places another turquoise, a piece of slate, or a crystal in water, as a preventive, and gives the remedy to the patient to drink. The Zuñi say that the perfect blue

turquoise is male; the off-colour, female. The Zuñi upper world is symbolized by the sun, eagle, and turquoise, the lower world by the rattlesnake, water, and the toad. Blue among the Zuñi is the colour of heaven; green, that of earth. The west also is known as the blue world. The Hopi also associate blue or green with west and with good fortune as well. In their myth of the origin of the sun and the moon, the sun was made from a clear, round, flat stone set with turquoise around its edge. Among the Pueblo, turquoise is known as the stone which stole its colour from the sky. They also believe that turquoise protects the wearer against contagion and is potent in affairs of the heart. The Apache relate turquoise with rain and with the emblem of the medicine man's efficacy. For the Navaho, turquoise also brings good fortune to the wearer and insures the favour of the gods. It is also supposed to induce rain. Thus, generally speaking, turquoise seems frequently referred to in myth, belief, and folklore in the Southwest.

On the other hand, the symbolism of turquoise was not paid much attention in any other Mesoamerican myths but in the Mexica's (Nahua's). Only in Nahua mythology, legends, and prayers, does turquoise play a symbolic role. For example, the turquoise shield represents the sun itself, and Xiuhtecuhtli was believed to live in the 'turquoise enclosure' located in the navel of the earth (Sahagún 1953-81: Bk 1, 81-2; Bk 6, 88-9). Also in the legend of the Toltecs and Quetzalcoatl, the Toltecs were the first ones to discover and use fine turquoise because they had great knowledge of rocks; the Toltec skill in manufacturing turquoise mosaics was originally taught by Quetzalcoatl; Quetzalcoatl owned the house of fine turquoise facing west or 'toward the setting sun' (Sahagún 1953-81: Bk 10, 166-8).

The Mexica actively inherited the Toltec tradition and adorned the deities of warfare and their lords with turquoise mosaic objects (Miller & Taube 1993: 174). Toltec figures, especially warriors, are frequently represented wearing costume elements covered with turquoise mosaic. Some of the common turquoise mosaic elements are large back shields, pointed crowns, and pectorals in the form of stylized butterflies or dogs (cf. Sahagún 1953-81: Bk 8, 33-5). A pictorial example of a Mexica warrior can be found in fol. 72r of the Codex Magliabechiano (Figure 7.7). It is a depiction of a reproduction of a mummy

bundle of a warrior in the seventeenth feast of Tititl, in which the Mexica remembered the dead. The mummy was adorned with a blue pointed crown (*xiuhuitzolli*), a blue nosepiece (*yacaxihuitl*), and a blue dog pectoral (*xolocozcatl*) (cf. Sahagún 1953-81: Bk 8, 33-5).

The Mexica deities, such as Quetzalcoatl (god of wind and life), Tlaloc (god of rain and water), Huitzilopochtli (Mexica tribal deity, god of war), Paynal (delegate of Huitzilopochtli), Xiuhtecuhtli (god of fire), Tezcatlipoca (supreme deity, god of war and fire), Cinteotl (god of maize, patron deity of lapidary workers), and Cihuacoatl (omen of war), were described carrying turquoise mosaic objects as part of their paraphernalia, which were placed on their statues and/or worn by their priests or impersonators in ritual³⁸. Quetzalcoatl, Tlaloc, Chalchiuhtlicue, and Cinteotl can be categorized under the water-and-fertility-related deities, and Huitzilopochtli, Paynal, Cihuacoatl, Tezcatlipoca, and Xiuhtecuhtli under the war-and-fire-related deities. Among them, Quetzalcoatl, Tezcatlipoca and Xiuhtecuhtli were thought to represent the supreme and invisible deity who ‘is set in the navel of the earth, who lieth in the turquoise enclosure’ (Sahagún 1953-81: Bk 6, 19, 41-2, 88-9). The Mexica rulers often identified themselves with the supremacy related to the solar cult by wearing turquoise ornaments of these important deities in ritual, such as turquoise pointed crowns and earplugs. Therefore, turquoise in Mexica legend, myth and ritual symbolizes the sun, west, fire, war, and life or divine power, as well as rain and agriculture, although the last symbolism is not expressed as strongly as the other elements. Most of the turquoise symbolism, except for war, overlaps with turquoise symbolisms of the Southwestern cultures.

In order to analyze the occurrence of regional difference in incorporating turquoise in Mesoamerican mythological thought—that is to say, why only the Mexica in Mesoamerica actively employed turquoise in their cosmivision—can

³⁸ As for the turquoise ornaments of Quetzalcoatl, see Sahagún (1953-81: Bk 12, 11-2); of Tlaloc, Sahagún (Bk 12, 12); of Huitzilopochtli, Pomar (1975: 10-1), *Primeros Memoriales* (fol. 261r), Durán (1971: 72); of Paynal, Sahagún (Bk 1, 3; Bk 2, 175-6), *Primeros Memoriales* (fol. 261r); of Xiuhtecuhtli, Sahagún (Bk 1, 29-30; Bk 2, 164), *Primeros Memoriales* (fol. 262v), *Codex Borbonicus* (pls. 9 & 20); of Tezcatlipoca, Sahagún (Bk 2, 69); of Cinteotl, Sahagún (Bk 9, 80); of Cihuacoatl, Sahagún (Bk 1, 11), *Primeros Memoriales* (fol. 264r).

be explained by looking at the basic definition of myth. G. Van der Leeuw (1949: 330-1) introduces Pettazzoni's words as the best definition of myth³⁹:

Myth is not fable, but history, 'true history' and not 'false history'. It is true history by virtue of its content, the narrative of events that really occurred, beginning with those grandiose events of the origins: ...events remote in time from which present day life took its beginning and foundation, from which the present structure of society issued and on which it still depends.

Thus, the way of life of present human beings has already been ordered by the gods in the primordial time, and myth is what relates the origin of the present world. The mythological elements prescribe every aspect of daily human life. Thus, the objects deified or symbolized in myth can be considered established and shared, at least by the group of people who got involved with the myth-related matters. In the case of turquoise, it can be said that the Mexica objectification of turquoise deified the stone by attaching it to divine beings related to their solar-war cult and to their glorious past. In other words, it is possible that Mesoamerican people other than the Mexica (Nahua) did not share the common and stabilized symbolism of turquoise, and that the employment of turquoise in other regions may have been motivated by Mexica or Southwest influence, or by the appropriateness of turquoise as a substitute for other greenstones. As studied in the next section, the Mexica symbolism of turquoise is clearly embodied in the offerings of the Templo Mayor. However, even among the Nahuatl-speaking people, gaps in understanding the symbolism of turquoise seems to have existed. This ambiguity of objectification may have been rooted in the fact that ethnohistorical information was normally compiled from the Mexica elite point of view, because most of the Nahuatl-speaking informants during the Early Colonial period were descendants of the elite. The turquoise material symbolism exclusive to the Mexica elite and the possible state of the conceptualization of turquoise are examined in the next section.

³⁹ Van der Leeuw quotes Raffaele Pettazzoni's statement (1948) in *Miti e leggende*, turin,

7.3 Turquoise in Mexica society

The offerings of the Templo Mayor, the main temple of Tenochtitlan, is the only example that can offer detailed archaeological information including contexts, quantities and types of object of the turquoise specimens recovered from each offering (Figure 7.8). At the Templo Mayor, numerous offerings consisting of various objects were buried in the ground or directly in building fill. Sometimes offerings were placed in stone boxes and then buried. It was also common to bury the incinerated remains of elites under the floor of the platform or temples, always accompanied by valuable objects (López Luján 1994: 100). In the offerings turquoise objects are minor finds, compared to jade and other stone artifacts. However, the distribution and the contexts of turquoise objects show clear symbolism that was attached to turquoise among the Mexica elite.

The aim of this section is to examine the Mexica incorporation of turquoise and to situate it within the wider Mesoamerican context referred to in the previous section. First, the general characteristics of the offerings are studied, and second, the contexts of each offering that contained turquoise objects are analyzed. Third, the major turquoise objects, namely disks and flints, are examined by comparing them with those found in other Mesoamerican contexts in order to elucidate the meanings attached to turquoise by the Mexica elite. Finally, the state of the Mexica conceptualization of turquoise is discussed in parallel with the symbolism of jade, and by examining the ambiguous linguistic usage of the words *xihuitl* and *chalchihuitl* in other regions besides the capital.

7.3.1 Characteristics of the offerings of the Templo Mayor

The Templo Mayor is a so-called twin-temple pyramid, which consists of two temples at the top dedicated to two deities, Huitzilopochtli, the god of war, and Tlaloc, the god of rain. The main façade of the Templo Mayor faced west, and the temple of Huitzilopochtli was located on the south side, and Tlaloc on the

north. This main pyramid of the capital played a functional role as a ritual place where the seasonal feasts were held, ritual of human sacrifice was performed, and offerings to the deities were buried. The variety of the offering objects, from shells and marine objects to precious stones found in and around the Templo Mayor, reflects the Mexica desire to incorporate the edges of their world into the sacred shrine and constitutes a symbolism of centre and periphery (D. Carrasco 1987: 149). Thus, the Templo Mayor by extension had a symbolic role as the centre of the most powerful state of Late Postclassic Mesoamerica.

Moreover, the Mexica conceived the Templo Mayor and its terraced platform as Coatepec (Huitzilopochtli side), or the mythical place of the birth of Huitzilopochtli. At the base of the Huitzilopochtli side of the pyramid, a round stone sculpture of the dismembered Coyolxauhqui was placed, which reminds us of the myth of the birth of Huitzilopochtli (Lint-Sagarena 2001: 73). In other words, the Templo Mayor also represented the temporal axis connecting mythological past and present (D. Carrasco 1987: 127, 150).

Thus, the offerings of the Templo Mayor represent various aspects of Mexica religious practice, mythological symbolism, and also their political-economic influence over the other regions. In the following paragraphs, the general characteristics of the offerings are outlined, and the classification and locations of the offerings that contained turquoise objects are briefly summarized.

General characteristics of the offerings

As of 1994, when López Luján, a Mexican archaeologist working for the Templo Mayor Project, published his book on the offerings of the Templo Mayor, a total of 118 offerings had been already recovered. The offerings were found mainly in three contexts: 1) in cists or small chambers with stone walls and floors covered with stucco remains; 2) inside stone boxes with stone covers; 3) placed directly in the nucleus of the earth and rubble fill which covered an earlier construction (Matos Moctezuma 1988: 85). The greater part of the offerings were deposited along the three principal axes that cross the Templo Mayor from east to west: the first and second pass through the middle of each of the two temples and their respective stairways, the third runs exactly through the middle of the platform

where Tlaloc's and Huitzilopochtli's bases unite (López Luján 1994: 113) (Figure 7.9). The offerings on the north and south façades also follow an axial distribution. Most of them form an axis that passes through the middle of the Templo Mayor. Moreover, a good number of the deposits were concentrated at the four corners of the structure. The majority of the offerings were buried on the eastern façade or the back of the pyramid (23.5%) and the western façade (29.4%) of the temples, clearly showing a distribution with a solar significance (López Luján 1994: 113). In addition, almost half of the offerings were oriented westward (Figure 7.9).

The chronology of the Templo Mayor is divided into seven stages based on the calendric glyphs set on the façades of Huitzilopochtli's base (López Luján 1994: 67-8)⁴⁰. The concentrations of excavated offerings differ from one stage to another, because of technical limitations of the excavation (López Luján 1994: 117-8). According to López Luján (1994), it is impossible to clear the rubble from the platform corresponding to Stage II because of groundwater reaching very near the surface, and to find the principal façade of the pyramid at Stages V, VI and VII, because such an effort would have threatened the stability of the surrounding colonial buildings. Also to dig deeper into Stages III and IV in order to detect additional offerings would have meant removing the stairways of Stage IV and the platform of Stage IVb, respectively. Therefore, at the time of his publication in 1994, nearly half (49%) of the offerings that had been unearthed from the Templo Mayor belong to Stage IVb (1469-1481) (López Luján 1994: 117).

Almost 40 % of the offerings consist of a single level, but some offerings show vertically layered structure of from one to six levels (López Luján 1994: 140-1). Normally the deepest level contains marine sand which symbolizes aquatic world of the *tlaloque* (plural form of Tlaloc), the rain deities. In the second level some small marine creatures and shells are found. Then the higher

⁴⁰ Some issues regarding the chronology of the Templo Mayor remain unresolved. For example, Graulich (personal communication 2007) argues for the existence of more stages of amplification of the Templo Mayor than those proposed by López Luján (1994: 66-70), and also that the glyphs, interpreted as calendric by López Luján, have symbolic meanings (Graulich 1987).

the level goes, the larger the creatures and their effigies become, and the symbolism changes from aquatic to earthly world. The last and highest levels contain the richest offerings, and in many cases a pair of the sculptures of Xiuhtecuhtli and a jar in the form of Tlaloc are placed at the centre, as if presiding over the entire offering⁴¹. The lower levels consist almost always of similar aquatic material, but the contents of the upper levels often represent the symbolic aspect of each offering. The presence of vertical placement levels for objects is supposed to indicate their correspondence with particular ritual moments of the same ceremony (López Luján 1994: 140).

Based on the degree of similarity of the contents, of the 118 offering caches, 102 are categorized into twenty groups called 'Complexes' (from A to T) and the other sixteen are regarded as isolated (López Luján 1994: 149-170). The similarities are measured by a total of 109 'attributes (object types)' of the contents, including a few entries related to turquoise, such as 'fragment of raw turquoise', 'turquoise necklace beads', and 'turquoise mosaic' (López Luján 1994: 156-8, 446-53). This matrix of attributes, however, does not reveal the quantity of each attribute, because this analysis is based on 'presence' or 'absence' of each attribute. In order to complement the quantitative information I carried out research to count the turquoise objects and to examine the contexts of these finds in each offering in the Museum of the Templo Mayor in 2002. As of 2002, there were 138 offerings that had been recovered, and the total number has not changed at the moment of submission of this thesis (personal communication with Ricardo Rivera of MTM).

Offerings with turquoise objects

A total number of the entries of turquoise objects is 165, and those were found in nineteen offerings: No. 1, 2, 3, 5, 6, 11, 13, 17, 20, 37, 48, 60, 77, 98, 99, C3 (Chamber 3), CA (Contreras & Angulo), K and V. Offerings 1, 6, 11, 13, 17, 20 and 60 are categorized in Complex A. Offerings 2 and 77 belong to Complex Q, Offerings 3 and 5 to Complex D, Offering 37 to Complex E, Offering 48 to

⁴¹ The identification of this figure is widely but not universally accepted as Xiuhtecuhtli (Graulich, personal communication 2007).

Complex F, Offerings 98 and CA to Complex C, and C3 to Complex B⁴².

Offering K was found in Building A, and Offering V was in the precinct of the Casa de las Aguilas (the Eagle Warriors Precinct) next to the Templo Mayor, but within the sacred precinct. The locations of the offerings except K and V can be roughly divided into three groups; those found in the Huitzilopochtli side (south), those in the central section, and those in the Tlaloc side (North). Those in the Tlaloc side are Offering 48 and C3, those in the central section are Offerings 11, 13, 17 and 20, and the others are in the Huitzilopochtli side (Figure 7.10). The concept of Complex is useful to examine the possible timing, meanings and functions of the offerings. Generally speaking, the locations, which are concentrated on the Huitzilopochtli side, can tell us the symbolism of turquoise attached to the solar cult. Likewise, the primary orientation of most of those offerings, which is west, recalls the legend of Quetzalcoatl, who owned the house of fine turquoise facing west or 'toward the setting sun' (Sahagún 1953-81: Bk 10, 166-8).

The date of most of the offerings corresponds to either of Stage IVa (1440-1469), IVb (1469-1481), V (1481-1486) or VI (1486-1502)⁴³. This period correlates with the reigns of the fifth to eighth kings, Motecuhzoma Ilhuicamina (1440-1469), Axayacatl (1496-1481), Tizoc (1481-86), and Ahuitzotl (1486-1502), all of whom strongly promoted the military expansion of the empire. The Mexica state is said to have emerged as an advocate of temple construction and reconstruction beginning in 1440 with the accession of Motecuhzoma Ilhuicamina until the Spanish conquest (López Luján 1994: 285). Therefore, these offerings are supposed to have been made and buried during the period of the expansion of the empire as well as of the Templo Mayor. This historical background can be an important factor in analyzing the offering objects that reflect Mexica elite cosmovision.

In the following subsections, the offerings containing turquoise objects and

⁴² The Offerings 98, 99 and V were not categorized at the time of the L. Luján's publication in 1994. However, later in 1999, Olmo Frese classified Offering 98 into the Complex C. Offerings 99 and V have not been grouped into any category.

⁴³ Except Offering 37 belong to Stage II (1375-1426), and Offerings 98 and V to the VI (1486-1502).

their contexts are examined. In the first part, the offerings on the Huitzilopochtli side and the central section are studied. Then those on the Tlaloc side and the two in the Casa de las Aguilas are analyzed. The detailed quantitative and contextual information of each offering is provided in Appendix 3, 4 and 5. Appendix 3 lists basic data and plans of the offerings. The plans of Offerings 1 to 5, K and V are not recorded, and the recording style of the plan of Offering 6 differs from those drawn later based on the concept of layers. Thus, the contextual information cannot be offered in the case of those offerings without plans. Appendix 4 is a table of the data regarding the turquoise objects recovered from the offerings with detailed contextual information. Appendix 5 deals with detailed information of each turquoise object with photos.

7.3.1.1 Offerings on the Huitzilopochtli side and the central section

The offerings 1, 2, 3, 5, 6, 37, 77 and 99 are clearly located on the Huitzilopochtli side. The four offerings, 11, 13, 17, and 20, are located on the central section, but they are also studied in this subsection because they consist of part of Complex A, to which another three (Off. 1, 6 and 60) belong. Likewise, Complex Q (2, 77), E (37), D (3, 5), and C (CA, 98) are examined. Finally, Offering 99, which has not been categorized into any Complexes, is taken up.

Complex A

Complex A (Offerings 1, 6, 7, 11, 13, 17, 20, 23, 60, 61, 88) is supposed to have been made simultaneously during the consecration ceremony of the enlargement or reconstruction of the Templo Mayor (López Luján 1994: 241). All the offerings were discovered at Stage IVb (1469-1481); three (23, 61, 88) on the northern half (Tlaloc side), four (1, 6, 7, 60) on the southern half (Huitzilopochtli side), and the other four (11, 13, 17, 20) at the axis of union of the bases of Tlaloc and Huitzilopochtli (López Luján 1994) (Appendix 3: 1.1). The five offerings on the principal façade and Offering 20 (located at the centre of the back side) were buried inside the platform, and the five offerings of the secondary façades (north, east and south) were found under the flagstone floor.

Turquoise objects were found in Offerings 1, 6, 11, 13, 17, 20 and 60. Some

common characteristics of these offerings are as follows (López Luján 1994: 309-16). First, all of them were located at the Huitzilopochtli side or at the central section, and not on the Tlaloc side. Second, the primary orientation of objects of these offerings was west, except Offering 60 facing south. Third, some elements, especially in the upper levels, are common and prominent in these offerings, such as flint knives, a set of a serpent scepter and a deer-head scepter (representing the complementary concept of the sun and water), skull masks with shell and pyrite inserts in the eye sockets (cf. Figure 7.5), decapitated skulls, obsidian objects called ‘mortars’, several white stone miniature *atlatl* or spear throwers (López Luján 1994: 257-9, 313-6). Among these objects, flints, skull masks, and decapitated skulls are evidently associated with the concept of sacrifice, and *atlatl* is a symbol of war. Finally, some elements are missing or very few in the offerings containing turquoise objects, such as ceramic jars with the image of a fertility deity, ceramic spiral and representation of glyph *olin* (symbolizing whirlpool or a liminal zone through which the divine fluids are distributed over the face of the earth), and coral (López Luján 1994: 262-3, 313-6). These elements, except ceramic spiral and *olin*, are related to the concept of fertility and water, which are suited for the cult of Tlaloc. Thus, general aspects of these offerings are associated with the concepts of sacrifice, war and possibly the solar cult related to Huitzilopochtli. A brief description of the turquoise objects in each offering is explained in the following paragraphs.

1) Offering 1

Offering 1 is a sillares box-type offering and located at the southwest (front) side of the Templo Mayor. In this offering, sixteen entries of turquoise objects are recorded. Major elements are one flint knife and one preformed flint, both with a few turquoise tesserae attached (Appendix 5: Off. 1.1-2)⁴⁴. Only a few fragments of turquoise tesserae can be observed. The other twelve elements are only fragments. It is difficult to interpret these objects because their contexts are

⁴⁴ 'Preformed flint' is my translation of 'Preforma de pedernal'. It is a piece of pedernal (flint stone) in process of being manufactured to be a flint knife. It is roughly cut but not yet shaped as a flint.

not documented.

2) Offering 6

Offering 6 is in fill below the floor of the west side of the temple, just a little bit outside Offering 1. The total number of turquoise objects is ten. Major finds are three flint knives and four small disks. Two of the knives show a face of pyrite eyes and teeth of conch shell, and eyebrows of turquoise mosaic (Appendix 5: Off. 6.1, 4). On the other flint, turquoise fragments are attached, and all of them were pointing northwest (Appendix 5: Off. 6.3). One of the flints with turquoise eyebrows and the other with turquoise fragments were found at the southwest corner of the fill with turtle shell (Appendix 3: Off. 6, Level 1). The other with turquoise eyebrows was recovered at north-central area, also with another turtle shell (Appendix 3: Off. 6, Level 1). All of the small disks were found under or above the turtle shell at the southwest corner (Appendix 3: Off. 6, Level 1, 2; Appendix 5: Off. 6.2, 7, 8). Thus, in this offering all the turquoise objects are associated with turtle shells. Generally speaking, turtles symbolize water, earth, fertility, and the underworld in Mesoamerica (Benthon 2001: 277). Likewise, turtle shells were used as a musical instrument, and Macuilxochitl, the Mexica god of music, was described as a human figure emerging from a turtle shell (Matos Moctezuma 1990: 149; Carrasco & Matos Moctezuma 1992: 52). However, in the Mixtec codices, turtles are often described as 'Turtle-Fire Serpent Sacrificer' holding knives, and turtle shells are sometimes fused with the solar disk, possibly related to the war-solar cult (Benson 2001: 278) (Figures 7.11a, b). In Mexica visual representation, there is one example of Xiuhtecuhtli in the guise of an old man carrying a turtle shell on his back, recovered from the Templo Mayor (Antiguo Colegio de San Ildefonso 1995: 33) (Figure 7.11c). Considering the fact that the turtle shells in Offering 6 were flanked by flint knives and that this offering is located on the Huitzilopochtli side, it seems likely that this turtle shell is associated with the concept of sacrifice, by extension, of the solar cult, rather than the water-fertility symbolism.

3) Offering 60

Offering 60 is a sillares box placed in the southeast corner of the temple. At the northwest corner, a figure of Xiuhtecuhtli was placed as if presiding over the entire offering with a Tlaloc jar to the southwest. In front of Xiuhtecuhtli and the Tlaloc jar, some six flints and two decapitated skulls are scattered (Appendix 3: Off. 60, Level 1). Almost at the southwest corner, a skeleton of a reptile was placed, and next to this skeleton, a mass of copper bells can be seen. There are five entries of turquoise objects, but all of the objects are fragments (Appendix 5: Off. 60). Most of them are sieved remains and the detailed context is not clear but seems associated with the copper bells and greenstones. It is often mentioned that the sound of metal bells was thought to induce rain, and bells were employed in rainmaking rituals in Mesoamerica (Hosler 2001b: 311). Thus, it is possible that the association of turquoise with copper bells and greenstones, also a symbol of water, in this offering indicates another symbolism of turquoise as precious water in the Mexica cosmivision. This liquid aspect of turquoise is discussed later in the subsection regarding flint knives.

4) Offering 11

Offering 11 is also is fill below the floor located at west side of the central section of the temple. This offering contains eleven entries of turquoise objects. Major objects are one flint, four small disks, and two ear ornaments. One flint with turquoise eyebrows pointing northeast was found in the southeast area facing a decapitated skull in the highest level (Appendix 3: Off. 11, Level 4; Appendix 5: Off. 11.4). Two of the four small disks were found in the southeast area, one of them was near the flint with turquoise eyebrows (Appendix 3: Off. 11, Level 4; Appendix 5: Off. 11.2). Under this disk the other was laid inside the jaw of a decapitated skull (Appendix 3: Off. 11, Level 3; Appendix 5: Off. 11.5). This placement of turquoise disk in the mouth reminds us of the use of greenstone in the mouth of the dead as a symbol of life in the afterlife (cf. Sahagún 1953-81: Bk 3, 45). At the same time, this disk may also embody the sun to which this decapitated skull was offered. One of the other two disks was located almost at the centre of the offering between two flints without decoration (Appendix 3: Off.

11, Level 3; Appendix 5: Off. 11.2). The last disk, just the remains of tesserae in the form of a disk, was found almost in the centre between a copal figure and a conch shell in the deepest level (Appendix 3: Off. 11, Level 1; Appendix 5: Off. 11.7). In the same level, two nose ornaments were found in the northeastern area under a turtle and bones of sawfish and over copal resin (Appendix 3: Off. 11, Level 1; Appendix 5: Off. 11.8, 11). These nose ornaments look very similar to those dedicated to the dead warriors depicted in the codices, and so they might have been offered to the warriors sacrificed for this offering (cf. Figure 7.7).

5) Offering 13

Offering 13 is also in fill below the floor of the west side of the central section, just outside Offering 11. Twenty-seven entries of turquoise objects are recorded. A flint with a turquoise eyebrow was recovered together with another flint without decoration from the south-central area (Appendix 3: Off. 13, Level 3; Appendix 5: Off. 13.5). One small disk was also found over a flint without decoration at the southeast end (Appendix 3: Off. 13, Level 4; Appendix 5: Off. 13.1). A significant point is that a considerable amount of turquoise tesserae were associated with flint knives and skulls (Appendix 3: Off. 13, Levels 1, 2; Appendix 4: Off. 13, Els. 57, 100, 155, 157, 161, 172, 180, 205, 206, 210, 213). This association of turquoise with flints and skulls seems a common trait of the offerings in general.

6) Offering 17

Offering 17 is a sillares box located at the back of the central section of the temple, just off Offering 20. There are a total of twenty-six entries of turquoise objects. The major objects are two flints, two preformed flints, two small disks, and two small pectorals. Two flints with a few turquoise tesserae were found in the south-central area (Appendix 3: Off. 17, Level 2; Appendix 5: Off. 17.12, 16). One of them was placed under the Tlaloc jar, and to the north of this flint, one of the preformed flints with turquoise mosaic was recovered (Appendix 3: Off. 17, Level 2; Appendix 5: Off. 17.10). The other preformed knife does not have any contextual information (Appendix 5: Off. 17.26). Two small disks were found

under the jaw of the skull in the northeast corner (Appendix 3: Off. 17, Level 1; Appendix 5: Off. 17-22). This placement of the disks may have had a similar function as the one found in the jaw of a skull in Offering 11. Two small pectorals were observed under the figure of Xiuhtecuhtli (Appendix 3: Off. 17, Level 1; Appendix 5: Off. 17-3, 5). These pectorals are in the form of the stylized butterfly with two projections on each side, worn by Xiuhtecuhtli in the Mexica codices (Figure 6.8). These miniature pectorals might have been dedicated to this Xiuhtecuhtli figure. Most of the turquoise tesserae seem associated with flints, skulls and also Xiuhtecuhtli (Appendix 3: Off. 17, Levels 1, 2; Appendix 4: Off. 17, Els. 19, 23, 26, 30, 32, 33, 100, 149, 165, 173, 201, 208).

7) Offering 20

Offering 20 is in fill below the floor of the central section of the temple, next to Offering 17. Thirteen entries of turquoise objects are recorded. There were possibly two small mosaic disks, one consists of tesserae of element no. 1, 4, 5 and the other of element no. 44, 45, 120 (Appendix 4: Off. 20). The first disk was placed in the south-central area, north of a penate figure and a nose plug (Appendix 3: Off. 20, Level 6). The second was located in the southwest area, between a Mezcala mask and the copal base of a flint knife and west of a turtle shell (Appendix 3: Off. 20, Levels 2, 4). In the latter case, the association of turquoise with flint and turtle can be observed. Other tesserae seem associated with Xiuhtecuhtli, flint, turtle shell, and obsidian Xiuhcoatl (Appendix 3: Off. 20, Levels, 4, 5, 6; Appendix 4: Off. 20, Els. 11, 11(A), N, Q).

Complex Q

Complex Q is composed of the Offerings 2, 4, 32, 36, 55, 77, 79, 90, 91, C, D, and M (Appendix 3: 1.2). Offerings 2, 4, 37, 77, 79 and 90 are located on the Huitzilopochtli side, Offerings 32, 55, 91 are on the Tlaloc side, and Offerings C, D, and M are in the precinct of the Casa de las Aguilas (López Luján 1994: 392). The offerings containing turquoise objects are Offerings 2 and 77. Although both of the offerings are categorized under the same complex, they were very altered when found (López Luján 1994: 391). Both of them are sillares box-type

offerings.

1) Offering 2

Offering 2 is located on the southwest side of the temple of Huitzilopochtli, and belong to Stage IVb (1469-1481). The plan of this offering was not produced. It is reported that the box was made of tezontle, the cover and floor were quarried stone covered with plaster, and its southern wall was pried loose and the offering sacked in 1900, when the drain crossing the archaeological zone was built (López Luján 1994: 395). However, seven beads of turquoise, the colour of which varies from green to white, are recorded (Appendix 5: Off. 2.1). These beads may have been part of a bracelet or a necklace, possibly belonging to the elite.

2) Offering 77

Offering 77 is a box with tezontle sides and a flagstone floor (bottom), located on the southwest side of the temple of Huitzilopochtli. It belonged to Stage V (1481-1486). The western side of the box had been destroyed by a telephone conduit, and was empty (cf. Appendix 3: Off. 77). However, around the box, six turquoise tesserae were recovered together with remains of ceramics, bone, wood, conch shells, shells, two copper bells, one obsidian projectile point, and two greenstone beads.

Complex D

Complex D consists of Offerings 3 and 5 (Appendix 3: 1.3). Both were sillares boxes found on the west side of the temple dedicated to Huitzilopochtli, and belong to Stage IVb (1469-1481). They are said to be very similar in their contexts, but quite different in the internal distribution of the elements (López Luján 1994: 335-6).

1) Offering 3

This is a cylindrical tezontle sillares box, covered with two quarried stone sillares (López Luján 1994: 337). The significant characteristic of this offering is that most of the objects seem to have been subjected to intense heat, and all the

material was jumbled (López Luján 1994). This burnt condition can be interpreted as a mortuary context (personal communication with Ximena Chávez of MTM). The deepest level contained copper bells and copal remains; the next level had abundant remains of carbon and ashes together with a number of gold, silver, copper bells, one fragment of shell carved in the form of an eagle head, remains of human bones, fragments of coral, sponges, and sea urchins, bones of two turkeys, one opossum, one stingray, two fish, nineteen rattlesnakes, and the teeth and skull of an alligator (López Luján 1994: 337). A total of twelve entries of burnt turquoise tesserae were also recovered (cf. Appendix 5: Off. 3). Since some fragments are carved graphically, all these tesserae might have once formed a single mosaic object.

2) Offering 5

Offering 5, also called Chamber 1, is positioned in space symmetrically to Chamber 2 (López Luján 1994: 337). The most important object in the offering is said to have been a monolith of greenstone portraying the goddess Mayahuel (pulque deity) placed in the centre of the chamber and oriented to the west (López Luján 1994). Surrounding this monolith, numerous objects were distributed such as greenstone sculptures, obsidian sculptures, pieces of metal, shell objects, wood and copal remains, and other stone objects. Four entries of turquoise objects are recorded, and all of them are fragments. The context is not documented but the turquoise objects seem associated with the greenstone beads. This is another example of the association of turquoise fragments with greenstones, similar to the case of Offering 60. This association alludes to the fact that turquoise might have been regarded, in a way, as part of greenstones in the offerings.

Complex E (Offering 37)

Complex E consists of Offerings 10, 14, 29, 34, 37, 39, 44 and 74, and all of them are located on the Huitzilopochtli side of the Templo Mayor (López Luján 1994: 339-40) (Appendix 3: 1.4). All of the eight offerings are thought to be funerary deposits containing the incinerated remains of nobles and the artifacts associated with them. The location of the offerings on the Huitzilopochtli side and their

orientation to the west may tie the dead directly to the cult of the sun and to Huitzilopochtli (López Luján 1994: 237).

Offering 37 was a tripod cajete of orange ceramic with blue pigment, containing twenty-two beads of turquoise and eight beads of greenstone, which probably once formed a bead ornament (Appendix 3: Off. 37; Appendix 5: Off. 37.1). The beads were found together with cremated remains, one silex knife and four gold beads. The date of Offering 37 belongs to Stage II (1375-1426), corresponding to the reigns of the first to third kings, Acamapichtli (1375-1395), Huitzilihuitl (1396-1417), and Chimalpopoca (1417-1427). Thus, this is an example of the funeral practice of the earlier stage of the Mexica state. Likewise, this is an example of turquoise beads buried with the dead elite, possibly symbolizing life and power to be continued in the afterlife.

Complex C

Complex C is composed of Offerings 15, 22, 24, 58, 62, 70 and CA, four of them (15, 62, 70 and CA) are located on the Huitzilopochtli side and the others on the Tlaloc side (López Luján 1994: 324-5) (Appendix 3: 1.5). The building stage of the offerings corresponds to the VIb (1469-1481), except that of 70 is the VI (1486-1502) (López Luján 1994: 324). This complex was homogeneous in terms of its location and the quality of the contents, but it varied greatly in the placement of objects (López Luján 1994: 326). Later in 1999, newly found Offering 98 was added to this complex, but the new hypothesis of the complex includes only 22, 58, CA and 98, based on the symmetric locations in the same stage, namely, Offering CA at the southwest corner, 58 at the northwest corner, 22 at the northeast corner, and 98 at the southeast corner (Olmo Frese 1999: 74). The similarities in the contents and locations may indicate that these four offerings were buried during the same ceremony for the same purpose (Olmo Frese 1999). In general, the contents of the Offerings 22 and 58 seem closely related to the aquatic world, and those of the CA and 98, including various objects associated with the concept of sacrifice, link to the solar cult dedicated to Huitzilopochtli (Olmo Frese 1999: 110). The plans of Offerings CA and 98 are not provided, and so the analysis of the contexts relies on the sketch and

description offered by Olmo Frese (1999).

1) Offering CA

Offering CA is in fill below the floor, located at the southwest corner of the temple. The major characteristics of this offering are the number of decapitated skulls. The quantity of skull and the location clearly indicate the basic aspect of this offering to be the one closely related to the concept of sacrifice dedicated to Huitzilopochtli. A total of nine crania were found in the uppermost level (Olmo Frese 1999: 84) (Appendix 3: Off. CA, Level 4). Four small disks of turquoise mosaic were recovered: two were from the northeast area with a Mezcala-style mask and obsidian knife (Appendix 3: Off. CA, Level 4); another was from the northwest area beside a silex knife (Appendix 3: Off. CA, Level 3); and the other came from the southwest area together with a group of copper bells (Appendix 34: Off. CA, Level 2) (Olmo Frese 1999: 84-8). In this case, the association of turquoise with copper bells may not be based on water symbolism, because these turquoise tesserae formed disks, a symbol of the sun. Thus, considering the general concept of this offering related to sacrifice, these small disks possibly representing the sun may have been intended to be offered to Huitzilopochtli.

2) Offering 98

Offering 98 is also in fill located in the southeast corner of the temple. One flint with turquoise mosaic and fourteen entries of turquoise tesserae were recovered from this offering (Appendix 5: Off. 98). In the uppermost level, some decapitated skulls including fragments were found, as in the case of Offering CA. At the southwest corner of one level below, a figure of Xiuhtecuhtli was placed, and at the centre a stone sculpture of a brazier with a knotted tie and a few flints could be observed to the north of Xiuhtecuhtli and west of the brazier (Appendix 3: Off. 98, Level 4). In the northeast corner of the next level, a flint with turquoise eyebrows was recovered (Appendix 3: Off. 98, Level 3; Appendix 5: Off. 98.2). In addition, there are turquoise fragments dispersed in the centre and southwest areas (Appendix 3: Off. 98, Levels 2, 3, 4). This offering also shows strong symbolism related to fire and sacrifice.

Offering 99

Offering 99 is located at the corner of the present streets of Guatemala and Argentina and corresponds to Stage VI (1486-1502) of the southwest of the temple. This seems an isolated offering, in terms of not belonging to any complex, possibly due to its later deposition and location. The most important object in this offering is a disk with turquoise mosaic in the Mixteca-Puebla style. From this offering some twenty-five flints and numerous projectile points were recovered (Appendix 3: Off. 99, Levels 1, 2). In the north-centre area two copal figures were placed, and to the east of these figures (the northeast corner), a considerable amount of turquoise tesserae could be observed buried together with three flints and some points (Appendix 3: Off. 99, Levels 1, 2). These tesserae, approximately 15,000 pieces, were later reconstructed to form a disk with an illustration of seven personages in warrior costumes surrounding the central rings (personal communication with Ricardo Rivera of MTM) (Appendix 5: Off. 99). The central rings with the darker mosaics at the centre may indicate the intensity of heat, as observed in the shields found in the Zapotec-Mixtec caves (cf. Appendix 2: 1.3.4-11). This disk shows technique, style and sophistication similar to the Mixtec mosaic specimens.

Summary: turquoise in the Huitzilopochtli side

Generally speaking, the contents, especially the prominent amount of flints and skulls, of the offerings on the Huitzilopochtli side embody the concepts of sacrifice and war, and are related to the solar cult. In such offerings, turquoise objects still show close associations with flints, skulls, and turtles possibly representing the solar aspect, all related to the solar cult presided over by Huitzilopochtli. Likewise, turquoise mosaics often formed the objects related to the solar cult, such as nose ornaments of dead warriors, pectorals of Xiuhtecuhtli, and small disks. Regarding the placement of turquoise small disks in the mouths of the skulls, it can be proposed that these disks symbolize life in the afterlife as well as the sun to which the skulls were dedicated. Life symbolism can be also observed in the turquoise beads in a funeral context, which is reminiscent of the bead ornaments found in Tomb 7, Monte Albán. On the other hand, sometimes

turquoise seems to have regarded as a symbol of precious water by its association with jade and copper bells.

As for the offerings along the central section, they may share the characteristics of both offerings on the Tlaloc and Huitzilopochtli sides, as Offerings 6, 11 and 20 are said to be the richest and most varied (López Luján 1994: 109). However, as mentioned earlier, these offerings show close association with the others on the Huitzilopochtli side, in terms of the amount of flints and skulls. Moreover, regarding turquoise, its association with flints and skulls may be the most important factor in these offerings at the central section.

7.3.1.2 Offerings on the Tlaloc side

The offerings containing turquoise objects on the Tlaloc side are Offering 48 and Chamber 3. Both are located at the same northwest corner, Offering 48 at the entrance of Chamber 3. Offering 48 belongs to Complex F, and its date corresponds to Stage IVa (1440-1468). Chamber 3 is a member of Complex B, dated to Stage IVb (1469-1481).

Complex F (Offering 48)

Complex F is a group of Offerings 18, 19, 48, 49, 50, 69, 84, 89 and J (López Luján 1994: 342) (Appendix 3: 2.1). The majority of offerings were deposited in the Tlaloc side, but Offerings 18 and 19 are located almost at the central section, J in Building C, and 89 in the outside patio of the back of the temple. It is commented that the number of shared traits is equal to the number of unshared traits in this complex (López Luján 1994: 344).

Offering 48 was associated with the ritual dedicated to the rain deity during the great drought of 1450-1454 (López Luján 1994: 192-206). In this ritual, children were sacrificed to assure abundant rain for the next agricultural cycle (López Luján 1994: 200). This offering featured a box made of quarried stone sillares with a flagstone floor (bottom). The predominant element comprised Tlaloc jars and bone remains of at least forty-two children between the ages of two and seven who were killed during a ritual decapitation. The second level was composed of children's skeletons laid down on their backs in a bent position

and without any definite orientation. Green stone beads, symbol of life, were found in the mouths of five individuals. Two of them, in the north-central area, had circular wooden breastplates (disks) with applications of turquoise mosaic and turtle shell (Appendix 3: Off. 48, Level 2; Appendix 5: Off. 48.1-2). Only one photo of the disks can be provided, and it displays the solar motif, with darkest mosaics at the centre, a ring surrounding the central circle, and some divisions marked by ray-like motifs, similar to the Mixtec small disks and Chichén shields (cf. Appendix 2: 1.3.28-30, 1.8.4-5). This disk clearly represents the sun, and it is supposed that the other one looks the same. The placement of solar symbols in the context of a rainmaking cult indicates that these disks of the sun may have embodied the solar heat or drought, the motivation of this ritual deposit.

Complex B (Chamber 3)

Complex B is a group of Chambers 2 and 3, both are sillares boxes, and located on the Tlaloc side (Appendix 3: 2.2). Chamber 2 is dated to Stage IVb (1469-1481), and Chamber 3 to Stage IVa (1440-1469) (López Luján 1994: 317). Both may be similar with regard to type of containers, but they are different in terms of the quantity and the distribution of the objects placed in them (López Luján 1994: 318).

Chamber 3 is described as a real chamber, or room, with walls of quarried stone and with a floor and roof made of huge flagstones (López-Luján 1994: 320). The inside was covered with a thick coat of plaster and the walls were adorned with paintings barely perceptible today. There was a circular opening at the northwest corner of the floor of Offering 48. In this offering, objects made of greenstone, possibly related to the symbolism of water and fertility, and images of the gods Xiuhtecuhtli and Tlaloc predominated. Most of the divine images, including one basalt Xiuhtecuhtli and one ceramic water jar of Tlaloc, were concentrated on the eastern side and oriented to the west. A serpent knife with turquoise mosaic, oriented east-west, was found to the north of this Xiuhtecuhtli (Appendix 3: C3, Level 3; Appendix 5: C3). As it was placed close to Xiuhtecuhtli, this serpent knife is supposed to have represented Xiuhcoatl (cf. López Luján 1994: 322).

Summary: offerings on the Tlaloc side

From the offerings on the Tlaloc side, only three turquoise objects—two disks and one serpent knife—were recovered. The disks representing the sun may have embodied the drought brought by the sun, and the serpent knife may have been associated with a figure of Xiuhtecuhtli that was placed close to it. In this way these specimens show their own functions in their unique contexts and thus should not be included in the examples related to water-fertility symbolism just because they were found in the offerings on the Tlaloc side. Any fragments or tesserae have not been recorded, which means no other turquoise mosaic or bead objects were originally included. Considering these exceptional settings for turquoise objects in the offerings on the Tlaloc side, the amount and the contexts of turquoise objects found in the Huitzilopochtli side can be regarded as significant.

7.3.1.3 Offerings in the buildings within the sacred precinct

The offerings K and V are located in the Building A, and Building E or the Casa de las Aguilas, respectively. The buildings A and E are two of the fourteen structures bordering the Templo Mayor (López Luján 1994: 72). Buildings A, B, C, D, and E are to the north of the temple on the so-called Patio of the Eagles (López Luján 1994) (Figure 7.10). Building A is located on the northern patio, next to Building B and C, and with them it forms an axis parallel to the northern façade of the Templo Mayor. Building A is a base that rises from socle and is characterized by two staircases, oriented to the east and west, respectively (López Luján 1994: 72). It is thought that this building had undergone no less than four building expansions (López Luján 1994: 72). The Casa de las Aguilas is a large base, whose longitudinal axis runs parallel to Buildings A, B, and C, and has two flights of stairs at the western end (López Luján 1994: 75). From its moldings of the western-oriented staircase, two polychrome sculptures of eagle heads emerge. The Casa de las Aguilas has supposed to have been a ritual place, because of the presence of various large-format ceramic sculptures (e.g. of eagle warriors), codex-style paintings, benches with polychrome reliefs, and rich offerings (López Luján 1994: 75-6; López Luján, et al. 2000: 220-1). This emphasis on eagles implies that this building was dedicated to the eagle warriors or the warriors of

high rank.

Complex H (Offering K)

Offering K belongs to Complex H, which consists of Offerings 27, 68, 87, B1, K and N (López Luján 1994: 355) (Appendix 3: 3.1). Offerings 87 and B1 are located on the Huitzilopochtli side, and others are in the buildings within the sacred precinct: Offering 68 in the Building I, Offering 27 in J, Offering N in B and Offering K in A. Similarities can be seen in some types of objects, but their internal distribution is very different (López Luján 1994: 357).

Offering K belonged to Stage VIa (1481-1502), but the upper levels were disturbed later in Stage VII (1502-1520) and also altered by the intrusion of a well (López Luján 1994: 358). Thus, many objects were displaced and broken. At the deepest level, there was a complete skeleton of a young puma, and the second level is dominated by marine objects (López Luján 1994: 359). In the third level a total of forty flints oriented in the east-west direction were recovered, and the bones of a golden eagle were also found associated with these flints. A set of these objects may indicate a strong association with the solar cult, as flints imply sacrifice and eagles represent the sun. From this offering, one turquoise mosaic object was recovered (Appendix 5: Off. K). No contextual information is given, but its form, in spite of its irregular shape, resembles the phonetic glyph 'xiuh', which is reminiscent of the headbands of Quetzalcoatl (cf. Appendix 2: 1.11.2-4). Considering the altered condition of this offering, I suggest that it may have also contained elements related to Quetzalcoatl, besides the objects dedicated to the solar deity.

Offering V

Offering V was a funeral deposit found under the floor in front of the principal façade of the building, and corresponds to Stage VI (1486-1502) (López Luján, et al.: 222) (Appendix 3: Off. V). The content includes human skeletal remains of a man, a dog, a jaguar, a golden eagle, a sparrow hawk, and 133 complete and incomplete pieces and 318 fragments belonging to artifacts made of ceramic, obsidian, flint, basalt, greenstone, gold, copper, bronze, pyrite, bone, shell, copal,

cotton, and palm (López Luján, et al. 2000: 224-5). Among these pieces a total of five turquoise fragments were found (Appendix 5: Off. V). Because of the important location in front of the Casa de las Aguilas, and buried objects that were used exclusively by the nobility, it is highly possible that the interred person was a high-ranking dignitary, but not the kings who were buried in the royal palace (López Luján, et al. 2000: 226). Thus, it is suggested that these tesserae of turquoise once formed part of a mosaic turquoise crown or a nose ornament which were part of the attire restricted to the Mexica elite (López Luján, et al. 2000).

Summary: offerings in the buildings within the sacred precinct

The buildings taken up here are not part of the Templo Mayor itself, but their locations within the sacred precinct indicate that they were politically and religiously important. Although it is difficult to draw a conclusion from just a few examples, turquoise objects are very rare outside the main temple. The offerings are said to be as rich as those buried in the Templo Mayor, but the small amount of turquoise may imply that turquoise was regarded as a material exclusive to the kings or relevant high-ranking elite and major deities.

7.3.2 Major objects

Major turquoise objects are disks and flint knives. A total of nineteen disks, three large and sixteen small, and twelve flints were recovered from the offerings (Appendix 1). This composition of major objects is very different from that of those found in other Mesoamerican regions, studied in the previous section. In the following subsections, the meaning of each type of object is examined and compared with the meanings and functions of the disks and flints in other regions.

Disks

The larger disks and small disks should be discussed separately as their symbolism may differ slightly. Of the nineteen disks, two large specimens from Offering 48 seem to express symbolism similar to these disks found in the caves

of the Zapotec-Mixtec region, namely, as the sun, with motifs of rings and radiating rays. The other large disk with the depiction of warriors may describe scenes of a mythological battle or of the deities in warriors' attire sustaining the sun, comparable to the shield from Acatlan and two others in the European museum collections (cf. Appendix 2: 1.3.11-13).

However, the prominent characteristic of the disks in the offerings of the Templo Mayor is the amount of small disks and their context. The small disks were basically associated with turtle shells (Off. 6, 20), flints (Off. 11, 13, 20. CA), skulls (Off. 11), and the mouths of skulls (Off. 11, 17). As mentioned earlier, turtle shells may represent the sun, flints and skulls can be the symbols of sacrifice, and a disk in the mouth of a skull can be compared with a jade piece placed in the mouth of the dead. Thus, turquoise small disks might embody the notions of the sun and precious life that was offered to the sun as well as to the sacrificed ones. By considering the associations of turquoise tesserae with copper bells and flint knives, however, a unique symbolism attached to turquoise can be more clearly elucidated, as discussed in the next subsection.

Flint knives

Burying a large quantity of flints in the offerings is said to be one of the distinctive aspects of the Mexica offerings (Nagao 1985: 62). A total of twelve flints with turquoise mosaics were recovered from the offerings. In the following paragraphs, practical and symbolic meanings of flint knives in Mexica thought are discussed. Then the use of flints with faces in offerings and rituals is examined. Finally, a possible meaning of turquoise mosaics on flints is discussed by referring to the symbolism of copper bells.

Flint knives were practically and symbolically associated with sacrifice, death, war, fire and life. In general, flint knives found in the offerings of the Templo Mayor were bipointed bifaces of brown chert with or without decoration, and such flints are supposed to have been used in actual sacrificial rituals, buried as offerings, and also used as instruments to strike fire (Hester & Shafer 2001: 664). Besides the use of flints for a ritual of sacrifice, they were sometimes found inserted into the mouth or nasal cavity of skulls as a symbol of sacrifice (Figure

7.4). Likewise, in the Mexica calendar, Tecpatl or 'flint' had a role as one of the day signs as well as a year bearer, which corresponded to Mictlanpan or the north, the place where the dead were believed to go (Sahagún 1953-81: Bk 7, The Calendar Wheel). The day sign 'One Flint' belonged to Huitzilopochtli and Camaxtli (the war aspect of Tezcatlipoca), and those who were born on the day 'One Flint' were thought to become brave and seasoned warriors (Sahagún 1953-81: Bk 4, 77).

Because of their inestimable use to humankind, flints were often personified and deified in the Mexica religion (Miller & Taube 1993: 88). For example, according to one version of Mexica mythology, the first fire was made by Tezcatlipoca (or Mixcoatl) using some flints which had hearts (*Historia de los mexicanos por sus pinturas* 1985: 33). In fact, many sacrificial flints with a profile of a face (with one eye and teeth), attached to a ball of copal-resin for support, have been unearthed from the offerings of the Templo Mayor. Among them at least five flints from Offering 6, 11, 13 and 98 have eyebrows of turquoise (Appendix 5: Off. 6, 1 & 4, Off. 11, 4, Off. 98, 2). It has been noted that such flints with faces called *ixquauac* were actually used to cut the chest of the sacrificial victim in the New Fire Ceremony (Sahagún 1953-81: Bk 7, 28). The idea of the application of turquoise for the eyebrows is supposed to have been based on the description of personified flints with blue eyebrows in the codices (Figure 7.12).

Besides the flints with turquoise eyebrows, turquoise tesserae are often found glued onto flints randomly without forming any design. A total of six flints with turquoise tesserae (including preformed flints) were recovered from the offerings 1, 6 and 17. In order to examine the meanings of these mosaics, the symbolism of turquoise mosaics found with copper bells can be referred to. As mentioned before, copper bells were associated with water (rain), and turquoise mosaics found with copper bells may have embodied a liquid aspect as precious water. This liquid symbolism of turquoise mosaics may have been repeated on the flints as precious water or blood, regardless of their placement as a design of eyebrows or as random attachments that may represent a splash of blood in sacrificial ritual. However, the serpent flint with turquoise mosaic found in Offering 48 should be

treated differently, because it forms a serpent, not a simple flint knife, and clearly represents Xiuhcoatl or Fire Serpent by attachment of turquoise or xihuitl. In this case turquoise mosaics may have embodied an igneous aspect of Xiuhcoatl.

Thus, turquoise tesserae, when they appear with flints, show a close relationship with war and sacrifice by representing blood. This symbolism differs from the concepts represented by the knife handles mentioned in the last section (Appendix 2: 1.5.1-3). In the latter case the handles formed the figures related to the solar cult, while in the case of the offering flints, turquoise tesserae were attached directly onto the flint blade itself, which could have embodied a more direct relationship to the concept of sacrifice, and by extension, of blood. Likewise, since flints were associated with fire making, a concept of heat may have been attached to turquoise. The concept of heat also links to the solar symbolism, as observed in the turquoise mosaic shields.

In addition, the association of turquoise tesserae or fragments with decapitated skulls also implies the role of turquoise as a representation of blood. It is possible that turquoise fragments were scattered around the skulls and flints, which themselves were objects representing sacrificial ritual, to symbolize the precious water that nourished the sun.

Summary: Mexica symbolism of turquoise

By examining the locations and contexts of turquoise objects in the offerings, it can be said that turquoise symbolized the sun, heat, life, sacrifice, and blood. Comparing to the symbolism elucidated by studying turquoise objects from other regions, the general symbolism of turquoise related to the war-solar cult also appears in the Mexica specimens, but a much closer relation with the concept of sacrifice can be observed through associations with flints and skulls. This emphasis on sacrifice and blood was unique and the Mexica elite who controlled the offerings. In Mexica elite cosmivision, the principal importance was placed on human sacrifice, which brought blood to nourish the sun, and which justified fighting in war to expand territory. This justification of war and sacrifice must have been reinforced especially in the period of expansion of the Mexica state (1440-1521), during which most of the offerings with turquoise are supposed to

have been buried. Turquoise was chosen to represent this war-sacrifice concept, possibly owing to the following three reasons: first, turquoise was a relatively new material that had not yet stabilized in terms of its symbolism in Mesoamerica; second, turquoise was an appropriate material for the Mexica elite to use to declare themselves as successors of the Toltec culture; third, the mythical origin of the Mexica and the provenance of turquoise shared the same directional concept, which was the north, this stood in opposition to jade which came from the south⁴⁵.

7.3.3 Summary and discussion: turquoise as xihuitl

Finally in this subsection, the degree of the diffusion of the use of the word xihuitl as turquoise in Late Postclassic Mesoamerica is discussed. It seems that the concept of turquoise as xihuitl was limited to the Mexica elite, and there was, in general, a confusion of linguistic, practical and symbolic use of turquoise and that of jade or *chalchihuitl*. Since jade was traditionally treasured from the Preclassic period in Mesoamerica, the conceptualization of turquoise, the Postclassic material, seems to have been derived from the symbolism of jade called *chalchihuitl* in Nahuatl. In fact, turquoise and jade were often confused in literal expressions, as were both greenstones regarded as precious objects (cf. Chapter 5). Likewise, the Mexica use and symbolism of turquoise may have been influenced by Southwestern cultures, as mentioned above. Based on long-distance trade, cultural interaction with the Southwest was highly possible, which is attested by use of the word *chalchihuitl* for turquoise in this region. In the following paragraphs, the conceptualization of turquoise as xihuitl is examined by comparing the linguistic usages and semantics of *chalchihuitl*. Then a possible state of conceptualization of turquoise as xihuitl in Nahuatl in Postclassic and Colonial times is discussed.

The Nahuatl language is considered to have been a *lingua franca* during

⁴⁵ The source of jade in Central America is said to have been the Motagua Valley in the central Guatemala (Bishop & Lange, 1993: 125).

Postclassic-period Mesoamerica and the Southwest, due to the long-distance trading networks established by the Toltecs and the expansion of the Mexica state (Dakin 2001: 364; Karasik 1993: 70). The language that the traders spoke at Acoma Pueblo in the Southwest is said to be Nahuatl (Karasik 1993: 70). In the Southwest, turquoise was called *chalchihuitl*, and this can be another example of the diffusion of Nahuatl. For example, a turquoise mine in the Cerrillos area of the present U.S. state of New Mexico was called 'Mount Chalchihuitl' (cf. Harbottle & Weigand 1992: 62). The Southwest tribes share the same linguistic family called Uto-Aztecan with the Nahuatl speakers of the Central Valley, but the *tl* ending of the noun strictly belongs to Nahuatl grammar. Thus, it is supposed that the word *chalchihuitl* was a loan word from Nahuatl (W. Miller 1983: 120). While *chalchihuitl* meant exclusively turquoise in the Southwest, the word included a broader range of greenstones for Nahuatl speakers in Central Mexico.

Although the definition of *xihuitl* as turquoise is insured in any Nahuatl dictionaries, that of *chalchihuitl* has been controversial. At the end of the nineteenth and beginning of the twentieth century, there was a debate among Mesoamericanists about the definition of *chalchihuitl*. Pogue (1915: 105-9) describes the debate in detail and concludes three points as follows: 1) a term either identical with or corresponding closely to *chalchihuitl* has long been used by the people of the Southwest to designate turquoise; 2) the early Spanish writers confused several greenstones under *chalchihuitl*; 3) the people of Mexico and Central America used the word *chalchihuitl* to cover one of their most highly prized precious stones, which was jade. Likewise, a sixteenth century friar Molina (1992: 19) defined *chalchihuitl* as 'coarse emerald', a nineteenth century historian Siméon (1992: 91), 'crude emerald, pearl, precious greenstone', and a modern linguist Karttunen (1992: 45), 'precious greenstone, turquoise'. It is said to be logical to use the term 'emerald' for jade, as the colour of Mesoamerican jade varies from white, emerald green or apple to blue gray (Harlow 1993: 27). Modern archaeologists, such as Matos Moctezuma (1988: 177), generally consider *chalchihuitl* as 'jade, greenstone'. Thus, it can be concluded that *chalchihuitl* mainly indicates jade but broadly other greenstones including

turquoise at least in Postclassic Central Mexico.

Therefore in Late Postclassic Nahuatl, turquoise was generally categorized under the word *xihuitl*. However, even in the Nahuatl native manuscripts, there sometimes appears confusion between *chalchihuitl* and *xihuitl* (cf. Chapter 5). Such juxtaposition with turquoise can also be found in linguistic expressions of 'preciousness', such as, '...the precious greenstone, the bracelet, the precious turquoise, the precious thing' (Sahagún 1953-81: Bk 6, 36) (cf. Chapter 5). In addition to the linguistic expression, in iconographic representations, the glyphs for *chalchihuitl* and *xihuitl* take a very similar morphological form (cf. Chapter 6). Likewise, the sun god Tonatiuh was represented by turquoise or *xihuitl* in Nahuatl expressions (turquoise shield or *xiuhchimalli*), but in iconographic representations he was one of the top deities who carries more greenstone ornaments than other deities (Thouvenot 1982: 312). It has been said that the word *chalchihuitl* 'comes from nowhere', an expression which alludes to the fact that use of the word was already fully established and stabilized in the remote past in Nahuatl (Sahagún 1953-81: Bk 11, 223). The similarities in symbolism and the juxtaposition of *chalchihuitl* with turquoise may imply that at one time turquoise was regarded as a kind of *chalchihuitl* but later its solar attribute rose in importance. Thus the word *xihuitl* came to be used, and turquoise was then emphasized for its blue-green colour and its association with 'year' as the solar movement (cf. Chapter 5).

The possible background to the process of incorporating turquoise into *xihuitl* was: first, sometime around the end of the Classic or the beginning of the Postclassic period, with the political and economic expansion of the Nahuas (possibly the Toltec), there was contact with the Southwestern cultures in search of turquoise, or the Nahuas brought turquoise from the north on their way southward to the Central Valley; second, the Nahuas called turquoise *chalchihuitl* at first sight, the word which was borrowed by the Southwest people, and at the same time they learned the symbolism and use of turquoise from the Southwest; third, with the rise of the sun-associated warrior cult substituting for an agricultural one, a shift which took place during the Early Postclassic, the sun-related aspects of turquoise gained more importance, especially among the

Mexica, who heavily accentuated the solar cult, and turquoise became integrated into the xihuitl category that contained both the colour of turquoise and the notion of the sun as its metaphor. In this way, by the early Colonial period, the assimilation of turquoise and the concept of the sun can be observed as an iconographic representation of the turquoise year sign for counting time (cf. Chapter 6).

On the other hand, this concept of turquoise as xihuitl does not seem to have been widespread at the time of the Conquest. One example is the name ‘Chalchihuites culture’ of Alta Vista in Zacatecas. ‘Chalchihuites’ is a Spaniards modification of the Nahuatl *chalchihuitl* (cf. Weigand 1968: 50). This name was given by the miners sent by the Spanish from Tlaxcala, one of the Nahuatl speaking regions, during Colonial times (Weigand 1968: 50). The Chalchihuites people are known to have been the first to start mining minerals including malachite and azurite, which could have been included in ‘cultural turquoise’ or xihuitl, at least in the Nahuatl spoken by the Mexica elite (Harbottle & Weigand 1992: 58). However, the Tlaxcalan miners may not have been very keen on distinguishing xihuitl from *chalchihuitl*, or more possibly, they did not share the concept of turquoise as xihuitl, because this concept was still restricted to the Mexica elite of the capital and had not yet established its semantic relationship with the word xihuitl. In conclusion, at the time of the Conquest, turquoise as xihuitl may have still been on its way toward stabilization. In other words, the Mexica elite objectified turquoise because of its value, symbolism and historical background, and tried to communicate its meanings to other people under Mexica influence by promoting long-distance trade, assigning tribute in turquoise ores and objects to the conquered regions, and employing the skillful Mixtec craftsmen to produce highly sophisticated turquoise objects in order to support their religious and political dominance. This way of Mexica self-differentiation via turquoise, however, ended with the result of not being fully objectified by the ‘others’, including those who shared the same language.

Chapter 8 Ritual expression: Correlation of grass, solar year and fire

In the last chapter, the integration of the concept of xihuitl with turquoise as a medium of material representation was discussed. It was elucidated that the intention and meanings of the Mexica elite were lying behind the practical uses of turquoise to materialize the concept of xihuitl in a range of objects and contexts. In this chapter I analyze how other senses of xihuitl, namely, grass, solar year and fire were experienced in an actual situation, which is a large-scale ritual called Toxiuhmolpilia or 'the Binding of Our Years'. Toxiuhmolpilia was a Mexica ritual celebrated every fifty-two years, in which a bundle of sticks representing the past fifty-two years was burned. The fifty-two years indicate a great cycle called the Calendar Round, marked by a combination of the cycles of the solar year calendar of 365 days and ritual calendar of 260 days (52years x 365days = 73years x 260days).

Basically Toxiuhmolpilia is said to have been a ritual of the renewal of time and world based on the Mexica creation myths (Reed 1998: 103; Sahagún 1953-81: Bk 7, 25). In explaining the relationship between myth and periodical ritual, Eliade (1998: 42) argues as follows:

... the end of one cycle and the beginning of the next are marked by a series of rituals whose purpose is the renewal of the World. As we said, this *renovatio* is a re-creation after the model of the cosmogony.

The completion and renewal of Calendar Round was celebrated in many regions of Mesoamerica. However, the transition from one cycle to the next was celebrated at different times in different ways by different ethnic groups, because of the different starting points of the Calendar Round (Sasao 2001: 367-8). In this regard, the Mexica Toxiuhmolpilia involving the suburban regions shows peculiar social and symbolic significance in the urban-imperial milieu by integrating myth, cosmology, history, and political power into the sacred capital of Tenochtitlan as the centre of the universe; the ceremony also sanctified the conquests and the expansion of the empire (Sasao 2001: 368).

The first thorough investigation of this ceremony was carried out by Sáenz

(1967) based on the outcome of archaeological research in Xochicalco in the 1960s. Since then, the ceremony has been studied mainly from symbolic and structural points of view: symbolic analysis based on iconography (Caso 1967: 129-40); religious significance of the ceremony based on the astronomical and agricultural cycles (Broda 1980); as part of the cyclic rituals described in the Codex Borbonicus (Couch 1985: 83-8); symbolic interpretation of the ceremony based on Mexica religion and philosophy (D. Carrasco 1990: 85-8); symbolic interpretation based on Mexica mythology and the concept of cyclic time (Read 1998: 101-8; 224-35); as an example of the symbolic relationship between sacrifice and creation (D. Carrasco 1998: 56-8). Basically I follow the structural analyses presented by these specialists, but the way the Mexica experienced and reproduced this ceremony is paid more attention in my discussion. Thus, for the purpose of differentiating the Mesoamerican tradition and the Mexica ceremony, I employ the appellations 'New Fire Ceremony' for the traditional ritual and 'Toxiuhmolpilia' for the Mexica version of the New Fire Ceremony (cf. 1953-81: Bk 7, 25).

In this chapter, first the cultural background of Toxiuhmolpilia is considered from two points of view, namely historical and mythological. Then in the second section, Mexica ceremony is focused on. First, the ways the Mexica modified the traditional ceremony is examined. Second, the actual performances carried out in the ceremony are described. Then the symbolism and function of the ceremony are analyzed to interpret the Mexica way of objectification of the ceremony. Finally, based on the analysis of the ceremony, the semantic correlation of the senses of grass, solar year and fire in the word xihuitl is reconsidered.

8.1 Background of the ceremony

The Mexica inherited the tradition of the New Fire Ceremony, but the way of performance and the purpose of celebration seem to have been arranged by the Mexica to fit it in their own cosmovision. In the following subsections, the

historical origin of the ceremony and mythological explanation of the creation of the world are studied in order to clarify the Mexica modifications.

8.1.1 Historical background

The New Fire Ceremony is thought to have originated in Epiclassic to Early Postclassic Xochicalco (cf. Sáenz 1967; Elson & Smith 2001: 169-71).

Xochicalco is considered to have been the urban ceremonial centre where the people from different cultures assembled (Sáenz 1967: 30). The coexistence of various ethnicities in Xochicalco has been pointed out because of the great variety and hybridity in the style of its architectures and artifacts (López Luján 1995: 105; Garza Tarazona & González Crespo 2001: 356-7).

From the archaeological evidence, it is calculated that the first New Fire took place at Xochicalco in the year One Rabbit, which corresponds to 1090 or 1142 A.D. (Sáenz 1967: 47). This historical event is recorded on a rock located about 300 meters north of the hill-centre of Xochicalco, with the calendric glyphs of the year One Rabbit and the day Two Serpent under the flame-like motif with a stick placed on a bar at the centre, standing for a kindling of fire, and the numerical glyph 'One' on the left (Sáenz 1967: 11-2; Elson & Smith 2001: 169) (Figure 6.23). This image can be interpreted such that the first cycle of the calendars was united and reset in the New Fire Ceremony held on the day Two Serpent in the year One Rabbit (Sáenz 1967: 13). The similar image of the flames with a stick, but with a motif of a bundle and without any calendric glyphs, can be observed in a few archaeological remains of Teotihuacan. These Teotihuacan images imply that the burning of bundles was already established as part of religious practices in Teotihuacan times, but it is unknown whether these bundles represented 'years' or if the burning of bundles was associated with the calendars (cf. Langley 1986: 153-4; Solís 1998: 54; Taube 2000: 274-80) (cf. Figure 6.4).

8.1.2 Mythological background

In Mexica mythology, one of the origin myths is called ‘the Creation of the Suns’, in which it is told that in the past four Suns or Worlds had been created and destroyed by the gods, and that the one in which the Mexica lived was called the Fifth Sun. The important mythological elements are the creations of fire and of the Suns, ignition of new fire, the birth of the Fifth Sun, and human sacrifice.

As the sources for the Mexica myths, I mainly consult *Leyenda de los Soles* in the Códice (Codex) Chimalpopoca, which was recorded in Nahuatl in the form of the reading of a painted manuscript now lost, and *Historia de los mexicanos por sus pinturas* (HMP), which was reportedly compiled by Fray Andrés de Olmos (Bierhorst 2001: 199; Baudot 2001b: 410). It is said that the *Leyenda de los Soles* narrates the Mexica myths, because in the text its anonymous author identified himself with the Mexica capital of Tenochtitlan (Bierhorst 1992: 7). Likewise, the content of the myths recorded in the HMP is considered to be ‘remarkably similar’ to the *Leyenda de los Soles*, and ‘it serves as an aid to the interpretation of the *Leyenda*, and vice versa’ (Bierhorst 1992: 8).

It is told that before the First Sun was created there was a self-created divine couple, Tonacatecuhtli and Tonacacihuatl, who resided in the highest heaven or in the navel of the earth and originated the world and life (HMP 1985: 23). These supreme deities were called by some different names, such as Ometeotl (Ometecuhtli) and Omecihuatl, Teteointa and Teteoinan, and also Huehuetotl (Xiuhtecuhtli) for the male aspect of the deity, possibly in order to describe innumerable aspects of the inexplicable supreme divinity (e.g. Sahagún 1953-81: Bk 6, 41-2, 88-9). These supreme deities gave birth to four deities, Tlatlauhqui Tezcatlipoca (or Camaxtli), Yayauhqui Tezcatlipoca, Quetzalcoatl and Huitzilopochtli (HMP 1985: 23). Each of these four gods represented different aspects of the supreme divinity (HMP 1985: 23-4).

The first important points in the cosmogonic myth are that the first thing that was created was fire, and that ‘time’ did not exist by itself but was produced later with the creation of the Sun. According to the myth, the first creation was accomplished by Quetzalcoatl and Huitzilopochtli. They made fire, a half-sun

(which was not counted as one of the Suns), the first human couple, the way of counting days, months and years, the underworld, the sky, the earth and water (HMP 1985: 25-6). This first creation of the universe was told to be done all together without any time difference, because the march of time had not existed yet (HMP 1985: 27).

The counting of time began with the transformation of Tezcatlipoca into the First Sun (HMP 1985: 27). In other words, the counting of time started with the birth of the moving sun. All the four Suns were the products of the transformation of the deities. The duration of each Sun is told as follows; the First Sun of Tezcatlipoca for 676 years, the Second Sun of Quetzalcoatl for 676 years as well, the Third Sun of Tlatocatecuhtli, the god of the underworld, for 364 years, and the Fourth Sun of Chalchiuhtlicue, the goddess of water, for 312 years (Codex Chimalpopoca 1992: 119). In traditional Mesoamerican cultures, a cycle of time was marked every fifty-two years, and all the durations of the Suns were multiples of fifty-two years.

At the end of the Fourth Sun the sky fell down because of a deluge, and Tezcatlipoca and Quetzalcoatl had to raise it above in order to give life to the earth again (HMP 1985: 32). Then Quetzalcoatl was charged with creating the present human beings, and Tezcatlipoca ignited a new fire with flints ‘that have heart’ in order to dedicate a feast to the gods using the fire (HMP 1985: 33; Códice Chimalpopoca 1992: 120). This ignition of fire was performed in the year after the deluge, which was the year Two Reed (HMP 1985: 33). Thus, the ignition of new fire in every Two Reed became an important rite in order to commemorate Tezcatlipoca’s creation of the present world.

Then all the gods assembled in Teotihuacan to decide who would become the Fifth Sun (Códice Chimalpopoca 1992: 121-2; Sahagún 1953-81: Bk 7, 3-8). The god Nanahuatl was nominated and he jumped into the divine flames to transform himself into the sun. Soon after his brave jump, the newly born sun appeared in the east sky but did not move at all. On being asked by the sun for blood and hearts of the gods, all the other gods killed themselves to offer their lives to the sun. Following this divine act, the Mexica people dedicated human hearts to the sun and kept feeding the sun for fear that it would give up its

function if they stopped offering sacrifice (cf. D. Carrasco 1998: 40, 56). The movement of the sun ensured the flow of time, and at the same time, enabled any creatures on the earth to exist.

Summary

The ethnohistorical sources of the Mexica mythology equally relate that most of the creative acts of the gods, such as the creations of fire, the sun, human beings, the sky and the earth, were taken either in the time before the First Sun or during the interval between the Fourth and Fifth Suns (Elzey 1976: 124)¹. During the previous four Suns the gods did not carry out significant creations any more, and only the incidents of the beginning and end of each Sun are told in the myth. It is thought that each Sun does not exist separately but that ‘the earlier ages of the world lie within the present age as the system and ground of its order and structure’ (Elzey 1976: 133). In other words, the previous four ages are complete as groundwork for the Fifth Sun². In short, in Mexica mythology there are only two cosmogonies, one before the First Sun and the other in the interval between the Fourth and Fifth Suns (cf. Elzey 1976: 125).

Toxiuhmopilia is thought to have served as the reenactment of these two cosmogonic creations; the first creation carried out in the atemporal condition by the supreme deities, and the creation of fire by Tezcatlipoca in the second cosmogony. The Mexica gods seem to have put special importance on fire for bringing the sun into being. In the first cosmogony fire was made at the very beginning and then followed the half sun, which implies that the birth of the half sun was associated with fire (HMP 1985: 25). Fire is more obviously associated with the second cosmogony. The myth tells that just after the end of the Fourth Sun, Tezcatlipoca kindled fire with sticks having heart within themselves. This story implies that fire originally contained the source of life and symbolized life itself. Likewise, the Fifth Sun is said to have been born by means of Nanahuatl’s

¹ Elzey’s interpretation of the structure of myths is not universally accepted, but in terms of the characteristics of the mythological creations, I find the interpretation useful for my analysis.

² Cf. *Historia de Mexico* (1985: 105) informs that the Fifth Sun was made in the second creation.

leap into the divine fire. Fire consumed Nanahuatl's body but at the same time resurrected him as the sun. Thus, fire was thought to mediate the transformation of an earthly creature into a divine creature, and vice versa (cf. Furst 1995: 68). The sun was believed to be made of such a divine fire, which contained the power of creation, including the flow of time, but at the same time needed to be nourished constantly.

Therefore, Mexica basic religious principles that are manifested in creation myths are as follows: first, the creation of fire preceded all the other creations; second, the sun was created from fire; third, the movement of the sun produced the flow of time; and fourth, the sun needed human sacrifice in order to keep moving. All these principles also subsisted in the ritual of Toxiuhmolpilia, which was aimed to ensure the rebirth of the sun and the continuation of the cosmos for another fifty-two years (cf. D. Carrasco 1990: 86).

8.2 Mexica ceremony of Toxiuhmolpilia

The ritual of the Binding of the Years seems to have been performed from the beginning of Mexica history, including during the period of wandering (cf. Tezozómoc 1992, Codex Telleriano-Remensis, Códice Aubin). However, the Mexica seems to have modified this ceremony later in the period of expansion of their empire. In this section, first, the Mexica way of the consumption (objectification) of the tradition of the New Fire Ceremony is examined. Second, the actual content of the Mexica ceremony of Toxiuhmolpilia that is recorded by Sahagún (1953-81: Bk 7) and in the Codex Borbonicus is studied. Third, the symbolic implications of the ceremony are analyzed. Finally, the functions of the ceremony are discussed from political and religious points of view.

8.2.1 Mexica modifications of the ceremony

The New Fire Ceremony is thought to have been modified by the Mexica in two ways, namely, a change in timing, and the incorporation of the ceremony into the solar-war cult. The first modification by the Mexica was the change of the year of the ceremony from One Rabbit to Two Reed. The reasons for this shift are said to be as follows: one is the repetition of a serious drought in every One Rabbit, which made this named year unsuitable for a large-scale ceremony; the other is that the year Two Reed was associated with mythologically important creations (Sáenz 1967: 15; Sahagún 1953-81: Bk 7, 23-24). The change of the year is said to have been realized under the reign of Motecuhzoma Ilhuicamina (1440-1469), because during 1452 to 1454 the Central Valley was affected by a terrible famine caused by frosts and droughts (Sáenz 1967: 16; Codex Telleriano-Remensis: fol. 32r; Townsend 1992: 129-30; Hassig 1981). The year 1454 corresponds to One Rabbit, and thus, the ceremony was postponed to the next year 1455 of Two Reed³. On the other hand, it is also recorded that the Mexica had already practiced the binding of the years and the ignition of new fire in Two Reed from the period of wandering in some ethnohistorical documents (Tezozómoc 1992: 30, 36, 38-9; Codex Telleriano-Remensis: fols. 27v; Códice Aubin: p. 26). Thus, it is uncertain exactly when the Mexica changed the timing of the ceremony. However, since these ethnohistorical documents describing the ceremony held in Two Reed were post-Colonial products based on oral history or the copy of ancient pictorial manuscripts, it is possible that the tradition of the ceremony in Two Reed was already conventionalized in these authors' minds (cf. Sáenz 1967: 16).

As for the mythological associations, Two Reed was the year of the ignition of new fire by Tezcatlipoca (or Camaxtli) and also was the day sign related to Tezcatlipoca (HMP 1985: 33, 37; Códice Chimalpopoca 1992: 120; Sahagún 1953-81: Bk 2, 38; Broda 1980: 288). Tezcatlipoca plays an important role in the cosmogonic creation as the first fire-maker as well as the one who first

³ Graulich (personal communication 2007), on the other hand, argues that the change of the year occurred only in 1507.

established war for the purpose of nourishing the sun with human hearts and blood (HMP 1985: 33–4). After the creation of the Fifth Sun, Camaxtli was in charge of making new fire and conducting war to feed the sun in the year Two Reed (HMP 1985: 37). It is also uncertain which was established earlier, the creation myths or the transition of the ceremony to Two Reed, but it is evident that the myths acted as a supportive background to justify the ceremony to be held in Two Reed.

The second Mexica modification was to link the ceremony with the cult of Huitzilopochtli by celebrating the New Fire in the fifteenth month of Panquetzaliztli dedicated to this deity. The ritual scene of this combined feast is described in plate 34 of the Codex Borbonicus (Figure 6.25). It shows the last New Fire Ceremony, before the Spanish conquest, in the year Two Reed of 1507. This ritual scene displays the culminated power of the Mexica nation through commemorating simultaneously the New Fire in an extensive scale involving the suburban cities and the birth of Huitzilopochtli, who was originally just the tribal deity of the Mexica. This combination ritual together with the change of the year to Two Reed must have had a strong effect to reinforce the connection of the New Fire with the solar-war cult.

Thus, it seems likely that the New Fire celebrated in Xochicalco and Toxiuhmolpilia performed by the Mexica were very different in its forms and purposes. The actual ritual practices of the Mexica Toxiuhmolpilia are studied in the next subsection.

8.2.2 Description of the ceremony

Although it has not been supported by further evidence, Caso (1967) suggests that the Mexica Toxiuhmolpilia held in 1507 consisted of two parts, namely, the New Fire Ceremony in Panquetzaliztli and the burial of the year bundle two months later, in the seventeenth month of Tititl (Codex Borbonicus: pls. 34, 36)⁴.

⁴ An alternative interpretation is that the New Fire Ceremony in 1507 was celebrated only in the month of Panquetzaliztli (Graulich, personal communication 2007).

Panquetzaliztli, meaning 'raising of banners', celebrated the birth of Huitzilopochtli and his victory over Coyolxauhqui, enacted at the Templo Mayor. In this feast an impersonator of Huitzilopochtli and a group of runners raced about 24 to 32 kilometers over an oval-shaped route in the capital in order to honour the speed of the deity, and all along the way triumphal arches were raised embellished with banners (Durán 1977: 458-9). In Tititl, meaning 'to stretch', a feast was held in the memory of the dead and dedicated to Ilamatecuhtli (Tonan), a goddess of the earth to whose bosom both dead people and gods were believed to go to rest (Sahagún 1953-81: Bk 2, 31-2, 155-8; Caso 1967: 138; Boone 1983: 212). In Toxiuhmolpilia the bundles representing the past fifty-two years were made, and some were burned in the new fire in Panquetzaliztli and others were buried in the manner of a funeral in the month of Tititl. This ritual can be interpreted as the burial of old time and its revival. The detailed contents of the rituals, first of Panquetzaliztli and then of Tititl, are explained in the following paragraphs.

Panquetzaliztli

The ritual scenes of Toxiuhmolpilia are described in Book 7 of the Florentine Codex (Sahagún 1953-81: Bk 7, 25-32). The ceremony started with a so-called 'termination ritual' (Miller & Taube 1993: 87, 163-164). Before the ceremony, people put out every fire lighted in the country and threw away all the house utensils, including the statues of the gods and the stone hearths, into water. Such a deposit is interpreted as the destruction of their former life or as the ritual killing of material manifestations to neutralize their inherent power, and this ritual deposit was thought to lead to the new creation (Miller & Taube 1993: 163). Thus, by eliminating fire and used utensils, the Mexica people reproduced primordial time, or the mythological time of creations.

The new fire was ignited by the fire priests at midnight in perfect darkness at a temple built at the top of Huixachtlan or 'the Hill of the Star', located in the Iztapalapa district to the south of the capital. All the people in the region were anxious and gazing at the summit of the hill, expecting the light of a new fire (Sahagún 1953-81: Bk 7, 28). The fire had to be lit in order to revive the sun and ensure the existence of another fifty-two-year cycle. It was believed that if the

priests failed to ignite a fire, ‘then [the sun] would be destroyed forever; all would be ended; there would evermore be night’ (Sahagún 1953-81: Bk 7, 27). When the Pleiades reached the zenith of the sky, the priests started a small fire using a fire drill on the breast of the captive, whose name contained the word *xihuitl*, such as *Xiuhlalpil* or *Xiuhkli* (Sahagún 1953-81: Bk 7, 31; Anders, et al. 1991: 222). Immediately after starting the fire, they opened the breast of the captive and took out his heart to offer it to the new fire. Then the fire was taken to the Templo Mayor of Tenochtitlan, where the fire priests coming from outside of the capital were waiting to carry a portion to their cities and villages.

The rite of burning the year bundles is thought to have been taken place in the temple of *Cihuacoatl*, one of the goddesses of the earth and also of war, in Colhuacan or Iztapalapa (Codex Borbonicus: pl. 34)⁵. In this scene, four fire priests in the act of placing the bundles in the new fire are depicted in front of the great brazier of the temple (Figure 8.1a). The four sets of bundles may represent the four thirteen-year divisions of the fifty-two-year cycle (Couch 1985: 85). It should be noted that the priests wore a mixture of warrior and mortuary attire. The warrior ornaments are *xiuhuitzolli* or the pointed crown of turquoise, an important distinguishing mark of the highest warriors, and *xolocatl* or a blue ornament in the form of a dog on their chests, and both ornaments are identical to those depicted in the Codex Magliabechiano (fol. 72r) and in the Codex Borbonicus (pl. 9) (Figure 7.7, 8.1b). The mortuary element is *cuexcochtechimalli* or a roundel of pleated paper with a central point and attached banner with a cross decoration, which is a characteristic of the underworld gods (Couch 1985: 85; Caso 1967: 130). In this manner, past time was considered to be dead time and treated in the same way as a dead warrior whose soul was destined for the sun.

⁵ Couch (1985: 85) identifies the temple depicted in this codex as such, since the provenance of the codex is possibly from these regions. *Cihuacoatl* was originally the patron deity of Xochimilco, but many temples dedicated to her were built around the capital. It is also informed that there was a great brazier called *Teotlecuiltli* (Divine Brazier) made of finely carved stone in the floor of the chamber of the temple of

Tititl

In the second ritual in the month of Tititl, a bundle of the years was buried, the ritual scene of which is depicted on the plate 36 of the Codex Borbonicus (Figure 8.2a). Two iconographic elements testify that this image shows the funeral of dead time: a bundle in mortuary decorations and a *tzompantli* or 'skull rack'. At the bottom of the image appears a reed bundle wrapped in paper and decorated with a *cuexcochtechimalli*, the decoration which was attributed to the fire priests in the scene of Panquetzaliztli (Figures 8.1b, 8.2b). The bundle can be interpreted as a representation of the past century or time that 'died' in Panquetzaliztli (Caso 1967: 134). In the same image Ilamatecuhtli's impersonator is standing on the *tzompantli*, which is supposed to be the place where the bundle was going to be buried (Caso 1967). The *tzompantli* was a rack for displaying the decapitated heads of captives and of sacrificial victims dedicated to the sun (Sahagún 1953-81: Bk 2, 189) (Figure 8.3a). Although the oldest known example of a skull rack is from the Late Classic at Copan, the form is often claimed to derive from Central Mexico. It became widespread during the Postclassic period (Mock 2001:148); it is said that there were several skull racks just within the sacred precinct of Tenochtitlan (Heyden & Villaseñor 1992: 31-2). Inside the one found in the Escalerillas (Guatemala) Street in the former sacred precinct, stone cylinders similar to the stone sculpture of a bundle of the years kept in MNA were found buried (Caso 1967: 134) (Figure 5.2, 8.3b). Some other skull racks contained inside a grave with offerings, and it is possible that bundles of perishable material had once been buried inside such *tzompantlis*. The burial of the bundle of the years decorated with mortuary attire in *tzompantli* implies the identification of the year bundle with a dead warrior who dedicated his life to the sun, the idea which is similar to the rituals of Panquetzaliztli.

Summary

Thus, the Mexica Toxiuhmolpilia was celebrated twice in the months of Panquetzaliztli and Tititl, at least the ceremony of 1507. In this combined feast, not only the beginning of the new calendric cycle but also the death and rebirth of

Cihuacoatl (Duran 1977: 212-3).

the sun was commemorated. All the rituals represented symbolic aspects of Mexica mythology and philosophy, which are studied in the next subsection.

8.2.3 Symbolism of the ceremony: birth and death of time

The most important rituals in Toxihmolpilia may be the drilling of new fire on the breast of a captive, the rites of heart extraction dedicated to the newly lighted fire, and the burial of the bundles of the years in fire and in *tzompantli*. In the following paragraphs, the symbolic implications of these rituals are discussed.

Drilling of new fire and heart extraction

The force required to recreate the sun or the world came from both the new fire and the extracted heart (cf. D. Carrasco 1990: 87-8). The Mexica concept of 'soul' can be helpful in interpreting the relationship between the new fire and the heart. The Mexica believed that the human soul consisted of three parts: *tonalli* located at the head, *teyolia* placed in the heart, and *ihiyotl* corresponding to the liver and breath (López Austin 1988: 236; Furst 1995: 153). The *teyolia* was considered to be the part of the soul that went to the paradise of the sun and transformed into a butterfly or a hummingbird, and in which resided the divine power maintaining energy even after death (López Austin 1988: 229-30; Sahagún 1953-81: Bk 11, 25). The act of lighting new fire on the *teyolia* of a person who represented xihuitl or the solar years implies that the new fire absorbed the energy from the heart of the victim. This ritual performance may have been a reproduction of the myth of Tezcatlipoca's lighting of a new fire with the flints that contained heart (HMP 1985: 33). Likewise, the part of the ritual where the new fire consumed the extracted *teyolia* and the whole body of the captive overlaps with Nanahuatl's jump into the divine fire. Thus, each portion of the new fire, which was taken by the priests from other regions, can be seen as an embodiment of the new life of the sun.

Burial of the bundles

The act of burying is said to be a symbol of resurrection. The burial of the offerings is thought to be related to the descending movement, which was conceptually equated with both birth and death (Nagao 1985: 83; Soustelle 1959: 29; 1982: 108-109). In Mexica culture, babies were believed to be created in Omeyocan—the highest heaven where Ometeotl, the supreme deity, lived—and were sent down to earth (Sahagún 1953-81: Bk 6, 206). In the same downward manner, rain falls from the sky to nourish the earth, and seeds are planted in the ground to grow. Likewise, the dead are buried in the earth and become sustenance for plants, or the dead transform into other creatures in Mexica thought. All of these actions, raining, sowing and burying, represent descending action and the cyclic concept of birth and death. Thus, the burial of the year bundle can be said to represent the funeral as well as the revival of old time.

The buried bundles were made of reeds, which symbolized life or resurrection as well as the sun (Caso 1967: 130-1; Gutiérrez Solana 1983: 165; Aguilera 1985: 145-7). Reed, which is a light, flexible, and resistant plant, abounds around the lakes in the Central Mexico, and was used to make many utensils, such as baskets, bird cages, shields, arrows, musical instruments and so on (Aguilera 1985: 145; Heyden 1983: 94-5). Its abundance and usefulness might be one of the reasons that the Mexica considered it to be a symbol of life and fertility (Aguilera 1985: 146-7; Heyden 1983: 101-2). In addition, it was regarded as one of the four year-bearers and corresponded to the east, the direction from which the sun rises. Thus, the reed, which symbolized both life and the sun, was perfectly suited to be the material of the year bundle or ‘time created by the sun’ that was believed to experience life and death in the same way as other living creatures.

By being buried in fire, old time (= sun) represented by the reed bundles was thought to transform into its original form or fire. Also, with fire as the catalyzer that transforms things from the old to the new stage, the old sun transformed into the new sun, or the re-vitalized time. Likewise, the burial of the year bundle in *tzompantli* may have aimed to send dead time to the paradise of the sun, the place of dead warriors. In other words, the burial of the year bundles in fire represents

the resurrection of time, and the burial in *tzompantli* symbolizes the death of time.

Summary

Consequently, there are basically four symbolic factors in Toxihmolpilia: first, this ceremony itself was a reproduction of the myths of the creation of the world; second, fire embodied the energy of the sun, a catalyzer that brought transformation as well as the new sun-time; third, past time was materialized as reed bundles and was buried in the funeral manner of the Mexica solar-war cult; fourth, time (= the sun) was considered to be a living creature that experienced life and death. In this way, the New Fire Ceremony, which was originally established as a ceremony of the reset of the calendars, became fused with the Mexica solar-war cult in which the sun was regarded an omnipotent creature-deity with limited lifetime and always in need of being nourished by humans captured in war and then sacrificed.

8.2.4 Functions of the ceremony: religious and political aspects

The background ideology of Toxihmolpilia served to justify Mexica religious and political influence over conquered regions. The Mexica way of reproducing the New Fire Ceremony can be said to have the following five religious and political functions and meanings. First, by organizing the traditional ritual into a large-scale ceremony involving cities and villages under Mexica political power, the Mexica empire could show off their religious leadership and political influence. Second, by changing the celebrating year to Two Reed, the time-reset ceremony overlapped with the Mexica solar-war cult. Third, this emphasis on the solar-war cult justified the necessity of warfare as well as Mexica conquest over other cities. Fourth, the actual enactment of the funeral of old time and the creation of the new sun in the capital functioned to reinforce Mexica religious power in controlling the human world. Fifth, the distribution of the new fire (= new age), lighted by the Mexica elite, to the conquered cities and villages was a political tool to force conquered people to recognize that they were under Mexica

rule. Thus, Mexica objectification and reproduction of the traditional time-reset ceremony was directly connected to the Mexica elite's intention to exhibit the political and religious power of the Mexica as a ruler of the human world.

8.3 Summary and discussion: correlation of grass, solar year and fire in xihuitl

In the ritual acts of Toxiuhmolpilia, the concept of xihuitl as a whole can be clearly observed: first, the solar years were materialized and bundled like grass; second, the solar year was also regarded as an animate being, a concept which links to the sense of 'soul/life'; third, the ritually ignited fire represented the original form of the sun whose movement produced solar years; fourth, fire was also a catalyzer that brought new life, by extension, associated with the sense of 'soul/life'. As explained in Chapter 5, grammatically speaking, xihuitl as 'grass' and as 'year' have to be categorized separately because of the difference in forming abstract nouns, but their metaphoric relationship closely overlaps in this ceremony. Likewise, the sense of 'fire', which is not nominated as a major definition in the dictionaries and is only metaphorically related to the 'year' via the concept of the sun, gains in importance owing to its mythological relationship with the solar year as well as its functional aspect as a catalyzer related to soul/life in this ceremony.

The correlations of these senses were reinforced through time as a function of Mexica experience and understanding of ritual, religious, mythological and linguistic traditions; such correlations were not intentionally or unexpectedly generated by only one factor, such as a myth or a ritual. The image schema of grass-solar year-fire must have been conventionalized—that is, a base of mass understanding and consensus must already have existed—for the Mexica to have been able to carry out such a large-scale ritual (cf. Lakoff 1987: 109). This degree of conventionalization was different from that of the sense of 'turquoise' in xihuitl because the metaphoric extension of 'turquoise' in the category of xihuitl does not seem to have been well established, although the extension itself may

have been understandable and acceptable. Such diversity in the degree of conventionalization of the senses of xihuitl is thought to have reflected the different nature of the media, namely language, iconography, material culture and ritual. The nature of each medium that affected expression is discussed in the next chapter.

Chapter 9 Conclusion

This thesis examines the Mexica elite's conceptual system by studying the expressions related to xihuitl rather than by analyzing the structure of the concept (xihuitl). A conceptual system, motivated by experience, serves to define our everyday realities in a metaphoric way (Lakoff & Johnson 1980: 3-6; Lakoff 1987: 310). In other words, conceptual systems direct ways of expression. Thus, the last four chapters (Chapters 5 to 8) have examined the Mexica experience of realities and ways of expression through analyses of representations of xihuitl in four media: language, iconography, material culture and ritual. In this final chapter, various expressions of xihuitl observed in the four media are correlated and discussed. Then the Mexica conceptual system, as a producer of these expressions, is considered.

9.1 Mexica objectification of Mesoamerican traditions

Mexica expressions of the concept of xihuitl, as outcomes of their experience of their environment, were affected by the nature of each medium. In the following paragraphs, Mexica ways of expression based on the characteristics peculiar to each medium are summarized. Likewise, the differences and similarities in conceptualization of xihuitl in these media are discussed.

Linguistic expressions

The outcome of the linguistic analysis reflects the philosophy of the elites, who are those who lived in Tenochtitlan, because the linguistic dataset I employed derived mainly from ethnohistorical documents based on information provided by the descendants of Mexica elites. In addition, it should not be ignored that the linguistic tradition of Nahuatl was based on oral expression, since script writing did not exist in Nahuatl. This oral tradition may have accelerated the use of language dialects within specific groups, such as the elite language used in Mexico-Tenochtitlan (cf. Dakin 2001: 364-5). Thus, it is presumed that some

extended senses of *xihuitl*, such as turquoise, preciousness, fire, soul/life and red, which represented the religious and mythological background of the Mexica elites, might not have been well understood or conventionalized by other speakers of Nahuatl. For example, turquoise as *xihuitl* does not seem to have been conventionalized in other regions in spite of the extensive use of the parallelism ‘greenstone, turquoise and bracelets’ meaning ‘preciousness’ in the prayers and the discourse of rulers (Chapter 5). Also attachment of turquoise symbolism to *xihuitl* is distinctive to the Mexica elites (Chapter 7)³³. This gap in understanding of the senses of *xihuitl* among different groups of people may have derived from the different degree of stabilization of each sense, but the mechanism of the extensions must have been acceptable to all Nahuatl speakers (cf. Lakoff 1987: 109).

Iconographic expressions

The metaphoric extensions similar to the linguistic extended senses can be also observed in the iconographic representations studied in Chapter 6. All the symbols related to the concept of *xihuitl* had roots in Mesoamerican iconographic traditions, and each symbol was modified by the Mexica to a different degree in terms of morphology, set of colours, meaning and function. For example, both the iconographic representations of *Xiuhcoatl* and the square year sign are thought to have derived from the trapeze-and-ray sign, but all the attributions (form, colors, meaning and function) of the trapeze-and-year sign were later modified by the Mexica into two representations of *Xiuhcoatl* and the square year sign. With regard to the flexibility of modifications, in the realm of iconographic symbols the sources of tradition can be sought in a wider Mesoamerican context than in the case of the linguistic category, which was limited to the Nahuatl context. The trapeze-and-ray sign originated in Preclassic Monte Alban, the square year sign in Epiclassic Xochicalco, and the quincross in Classic Teotihuacan, Maya and Zapotec iconography. However, the iconographic representations of *xihuitl* were

³³ It is interesting that turquoise as *xihuitl* was already conventionalized at Cacaxtla, as seen in the year symbol and the Nahuatl glyph in the mural painting. However, so far no

grouped by the Mexica into a category meaningful only to those who shared the Mexica writing system. On the other hand, the origins of these symbols had not necessarily comprised a coherent category, and also it should be considered that the Mexica may not have needed to understand the traditional meanings and functions of each symbol fully in order to incorporate these symbols into the Mexica iconographic system or to modify them. Therefore, in the iconographic representations of xihuitl, the Mexica experience can be sought in a wider context than in the linguistic case, but the universality of the conventionalization of the grouping of xihuitl representations may have been restricted to the Mexica elites who controlled the writing system. As with the linguistic category, the iconographic category reflects the Mexica elite's cosmivision, such as the solar-war cult and the importance of the solar cycle (Chapter 6).

Material expressions

In the case of turquoise in Mexica culture, the context I considered was much wider than an iconographic context because turquoise played an important role in the cultural and economic interaction between the Southwest and Mesoamerica. In my analysis of turquoise objects in Chapter 7, I avoided generalizing symbolism and function of turquoise in different cultural contexts and instead focused on elucidating the Mexica experience as manifested in material expression. As stated by Lakoff and Johnson (1980: 3), 'metaphor is pervasive in everyday life, not just in language but in thought and action'. Therefore, the Mexica experience can be regarded to have motivated the metaphoric extensions of the symbolism and function of turquoise in a way not dissimilar to the linguistic and iconographic extension of category. 'Extensions' are not arbitrary products because extensions must be based on the central senses of the category or the system of category-chaining in order to be conventionalized (cf. Lakoff 1987: 108-9). In this respect, I do not agree with Hodder's statement regarding material culture as follows (Hodder 1986: 128):

major turquoise object has been reported from the site of Cacaxtla (see p. 22).

The second way in which the feasibility of reading material culture is enhanced is that the context of material culture production is more concrete than that of language and speech. Material culture meanings are largely influenced by technological, physical and functional considerations. The concrete and partly non-cultural nature of such factors enables the 'text' of material culture to be read more easily than the arbitrary signs of language.

In fact, my analysis of turquoise objects has shown that cultural and historical factors had significant influence on the incorporation of turquoise into Mesoamerican cultures, and much attention had to be paid to the association of turquoise with different types of object, to the historical tradition of each type of object, and to the regional and temporal similarities and differences in use of turquoise. For example, turquoise mosaics on masks (a traditional object) and those on shields (a Postclassic object) embodied different concepts (Chapter 7). In addition, Mexica 'turquoise (xihuitl)' does not correspond to our chemical 'turquoise'. For instance, the wooden imitations of turquoise ear ornaments worn by the suburban lords were also regarded as xihuitl (Sahagún 1953-81: Bk 2, 164). Thus, we need to recognize that there are gaps between our concept of chemical turquoise and a range of objects that were regarded as turquoise (xihuitl) in Mexica thought.

Material culture analysis of turquoise must also be complemented by analysis of other representations of xihuitl, namely linguistic and iconographic representations, in order to keep to the holistic idea of turquoise that characterized Mexica society. For example, in spite of a few-hundred-year history of turquoise culture in Mesoamerica, the concept of 'turquoise' was still not fully established or conventionalized in Mexica thought. For example, the sense of turquoise as xihuitl does not seem to have characterized other Nahuatl-speaking regions (Chapter 7). In addition, the iconographic identification of turquoise stone with the year sign, which represented incorporation of turquoise into the xihuitl category, was likely a post-Colonial product (Chapter 6). Finally, the symbolism connected with the concept of blood, observed in the turquoise objects from the offerings of the Templo Mayor (Chapter 7), seems to have attached only to material expression and may have been a new extended concept that was then incorporated into the category of xihuitl at the time of the Conquest. In this way, it can be said that material culture is basically a conceptual product, because a

material cannot become culture without subjective objectification (experience and reproduction) of the history of concepts related to the material (cf. Hacking 2002: 37). In the case of turquoise as xihuitl, the Mexica experience was connected directly to the Toltec heritage and the solar-war cult (Chapter 7).

Ritual expressions

Ritual expressions may have been the most effective way of communicating the holistic idea of xihuitl, because ritual contexts were limited and participants experienced ritual directly. In the case of Toxiuhmolpilia, rituals were performed on a large scale but were limited to the cities around Tenochtitlan, and were experienced by the public from elites to peasants simultaneously (Chapter 8). Moreover, this ceremony embodied a few extended senses of xihuitl that do not seem to have become fully established yet, such as 'fire' and 'life/soul' in the mythological and ritual context. Therefore, the Mexica elites who controlled this ceremony reinforced and sanctified the association of these extended senses with xihuitl through the ceremony. The ceremony of Toxiuhmolpilia was also based on the Mexica experience of the ritual and religious traditions of Central Mexico, rooted in the Early Postclassic period (Chapter 8).

Summary

In the conceptualization of xihuitl, extensions in each medium can be relatively clearly traced. Being able to trace these extensions may reflect the fact that the concept of xihuitl represented not a general idea but a philosophical aspect peculiar to the Mexica elite. It can also be said that the concept as a whole was not necessarily accepted by others (by non-Mexica elites); for example, turquoise as xihuitl and some senses (e.g., turquoise, soul/life, blood) were on the way to becoming established. Differences in the degree of conventionalization of the senses and in the selection of the senses in each medium indicate the nature of the expressional medium as dependent and complementary in the holistic composition of a concept. In other words, the media are interrelated because the expressions are the products of the same processor of information, namely the conceptual system.

9.2 Mexica conceptual system

The conceptual system has been discussed mainly in linguistic contexts as a way of recognizing realities (cf. Lakoff & Johnson 1980; Lakoff 1987). However, as Lakoff and Johnson (1980: 3) argue, studying language is just one of the ways to discover how a conceptual system works. In this thesis, Mexica expressions have been discussed in four kinds of media. Representations of xihuitl were found to have been motivated mainly by the Mexica elite's experiential context which included the cultures of the Southwest as well as Mesoamerican traditions. However, the Mexica placed special emphasis on the Central Mexican predecessors, namely Teotihuacan and the Toltec culture.

The Mexica choice of the word xihuitl to represent many senses important to their social, religious and political values may have derived from the implications of xihuitl in Postclassic Central Mexican traditions, especially in the Toltec heritage. Considering the fact that the name of a Postclassic Maya family 'Xiuh', who claimed Toltec origin and ruled Mayapan, may have derived from the Nahuatl word xihuitl, the sound (pronunciation) of xihuitl might have been widely recognized as a general symbol of Toltec or Central Mexican heritage (Vollemaere 1988: 24-5; Sharer 1994: 417; Ringle & Bey III: 2001: 274)³⁴. The major concerns derived from the Toltec heritage and related to Mexica representations of xihuitl may be the solar-war cult and the incorporation of turquoise as an item of value. There is also a wider Postclassic Central Mexican heritage which was reinforced by the Toltecs and manifested itself in iconographic style and symbolism as well as in the religious and mythological values observed in Toxihmolpilia. Mexica cultural awareness of the importance of Toltec-Central Mexican heritage contributed to a conceptual system that filtered cultural factors in representations of xihuitl, which served to strengthen their claims as successors to Toltec-Central Mexican traditions. Mexica modifications of these cultural factors can also be interpreted as their

³⁴ An alternative view is that the Xiuh were the Cacaxtlans (Graulich, personal communication 2007).

ways of understanding such heritage, as well as self-differentiation by extending the senses of *xihuitl*.

My study of *xihuitl* based on a cognitive approach can be developed further in other fields of study. A few possible topics would be: the conceptualization of *xihuitl* in Colonial and modern Nahuatl; the concepts related to turquoise in West Mexico or in North Mexico that were not dealt with in this thesis; and *xihuitl* or *chalchihuitl* as loan words in contexts foreign to Nahuatl, such as *chalchihuitl* in the Southwest or *xihuitl* in the Maya region.

Chapter 2



Figure 2.1 Map of Mesoamerica (M. Miller 1986: 12-3)

		CENTRAL MEXICO	OAXACA	GULF COAST	WEST MEXICO	MAYA HIGHLANDS/ PACIFIC COAST	LOWLAND MAYA	
							South	North
1519	LATE POSTCLASSIC	Aztecs <i>Tenochtitlan</i> <i>Flaxcala</i>	Mixtec independent kingdom	Aztecs	Tarascans	Maya independent city-states <i>Mixco Viejo</i> , <i>Iximché</i> , <i>Utatlán</i>	<i>Tayasal</i> (Itzá)	<i>Tulum</i> <i>Sta Rita</i>
1200		Toltecs <i>Tula</i>						<i>Mayapán</i>
900	EARLY POSTCLASSIC I-PI CLASSIC	<i>Xochicalco</i>	<i>Mitla</i> <i>Yagul</i>	Huastecs				<i>Chichen Itzá</i> (Toltec Maya)
600	LATE CLASSIC	<i>Cacaxtla</i>	Monte Albán IIIb	Classic Veracruz <i>Remojadas</i>		<i>Cotzumalhuapa</i>	<i>Tepeu</i> Late Classic Maya	<i>Puuc</i> and Central Yucatán
300	EARLY CLASSIC	Teotihuacan Phases I-IV	Monte Albán IIIa	El Tajín ↑ ↓		<i>Kaminaljuyú</i> <i>Escuintla</i>	<i>Tzakol</i> : Early Classic Maya	<i>Dzibilchaltún</i>
AD	PROTO CLASSIC		Monte Albán II					
BC	LATE FORMATIVE	<i>Cuicuilco</i>		<i>Tres Zapotes</i>	<i>Colima</i>	<i>Izapa</i> , <i>Kaminaljuyú</i> , <i>Abaj Takalik</i>	<i>Cerro</i> s	
600	MIDDLE FORMATIVE	<i>Tlatilco</i>	<i>Dainzu</i> Monte Albán I	<i>La Venta</i> ↓ ↑ <i>Olmecs</i>				
900	EARLY FORMATIVE			<i>San Lorenzo</i>	<i>Xochipala</i> <i>Capacha</i>	<i>Ocos</i>		
1500								
	ARCHAIC							

Figure 2.2 Chronology of Mesoamerica
Based on M. Miller (1986: 6)



Figure 2.4 Central Valley of Mexico during the Late Postclassic Period (Boone 1994: 33)

Figure 2.3 Extent of the Aztec empire (Boone 1994: 13)

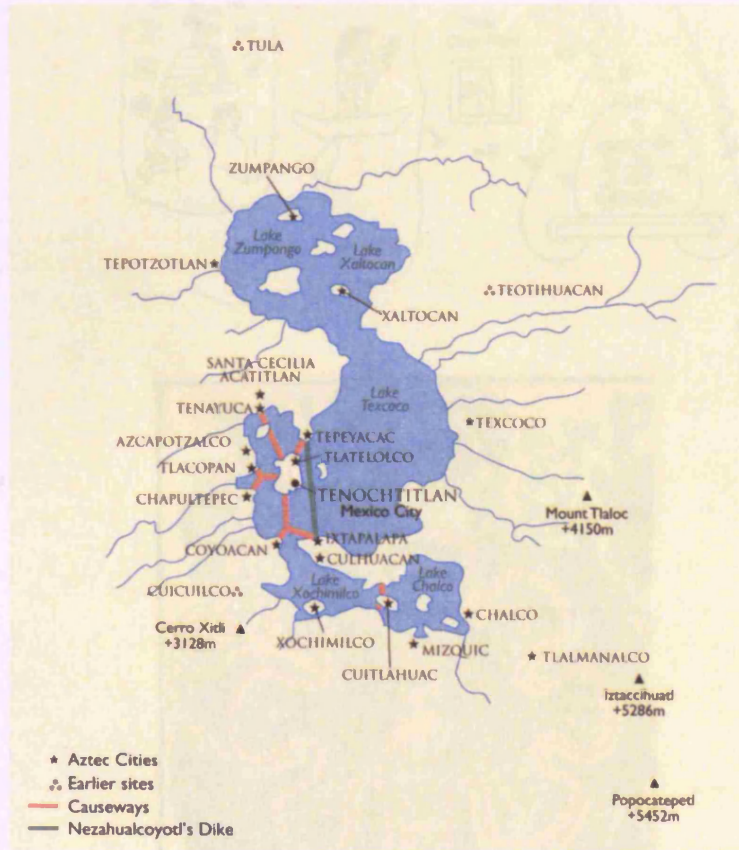


Figure 2.4 Central Valley of Mexico during the Late Postclassic Period
(Boone 1994: 35)

Figure 2.5 Mythological places of the origin of the Aztecs

- a) Aztlan and Huey Colhuacan (Trude y Perrot, *Atlas Mexique* [Mérida], 1)
- b) Chicomotoc (Trude y Perrot, *Atlas Mexique*, *Carte* [Mérida], 1889, fol. 16r)

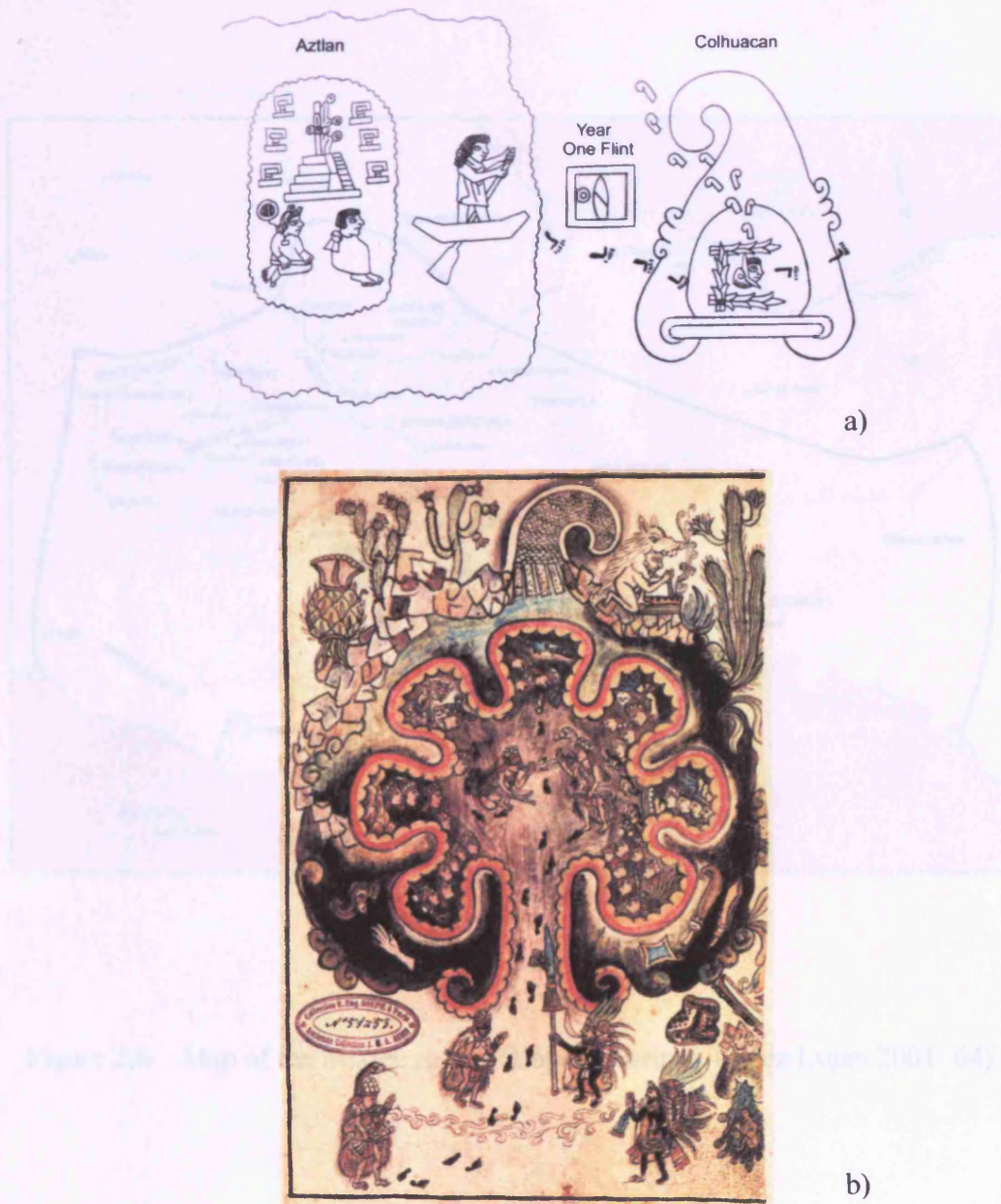


Figure 2.5 Mythological places of the origin of the Nahuas

- a) Aztlán and Huey Colhuacán (Tira de la Peregrinación Mexica 1944: pl. 1)
- b) Chicomoztoc in Huey Colhuacán (Historia Tolteca-Chichimeca, Kirchhoff et al. 1989: fol. 16r)

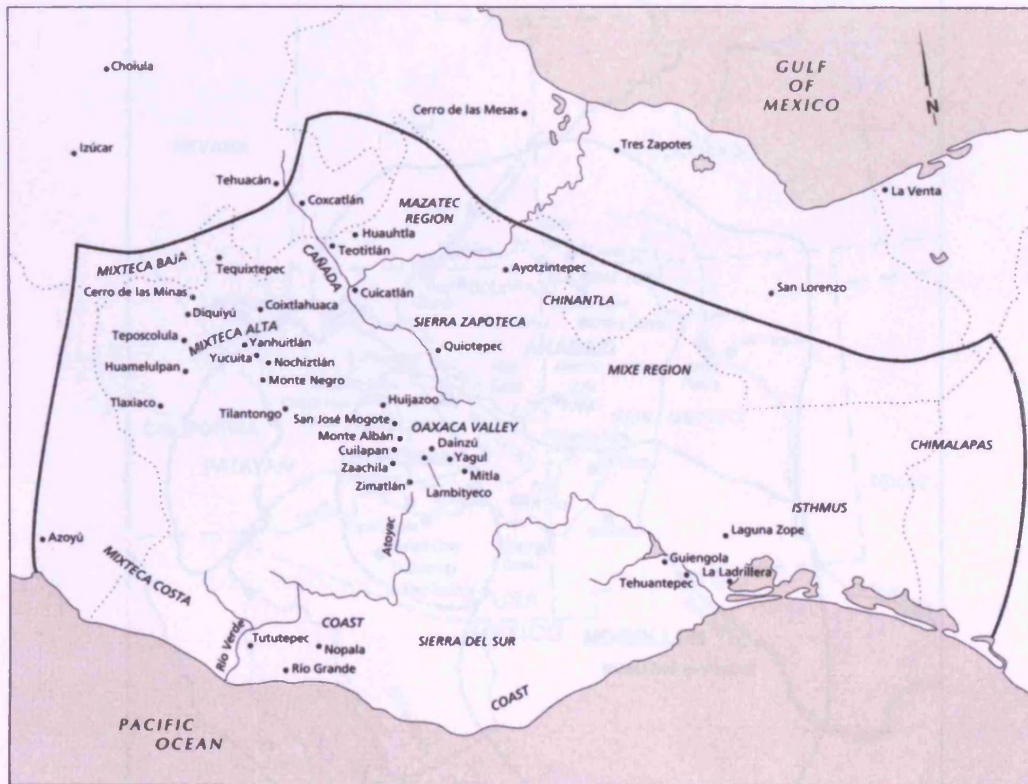


Figure 2.6 Map of the Mixtec region (López Austin & López Luján 2001: 64)

Figure 2.7 Map of the Mixtec region (López Austin & López Luján 2001: 64)

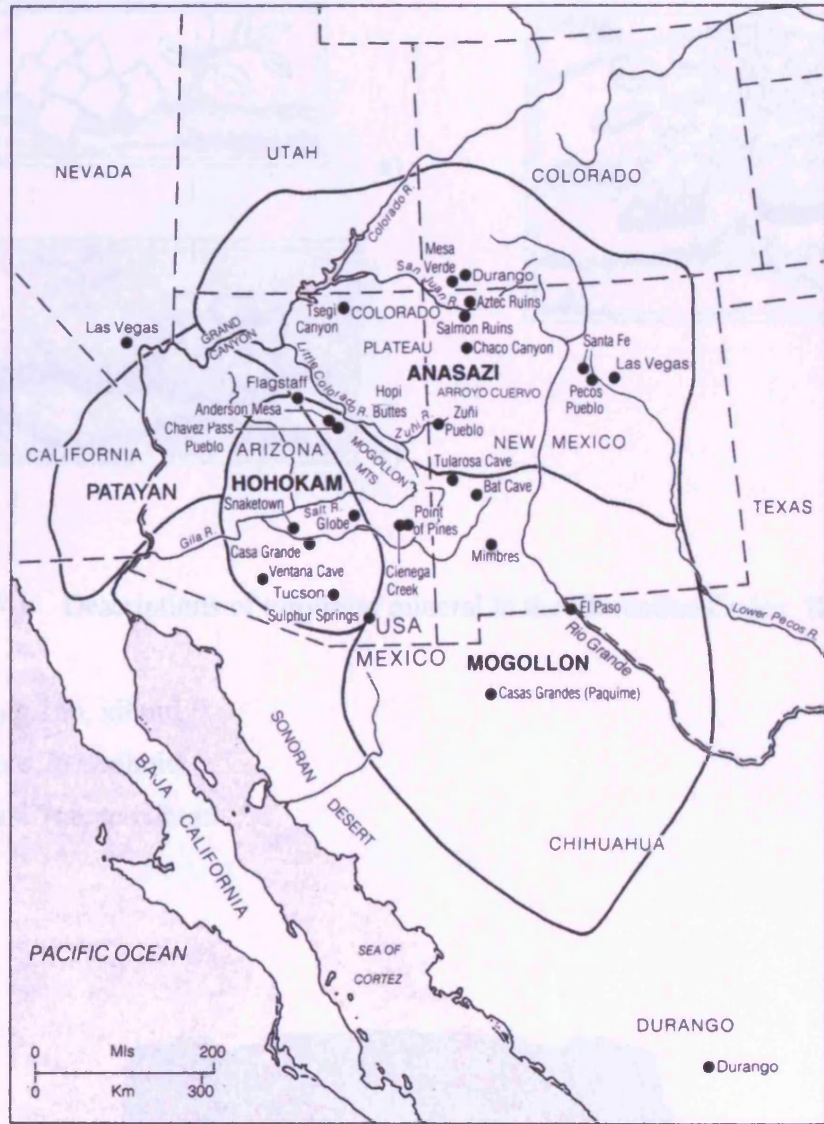


Figure 2.7 Map of the American Southwest (Fagan 1995: 286)

Chapter 5

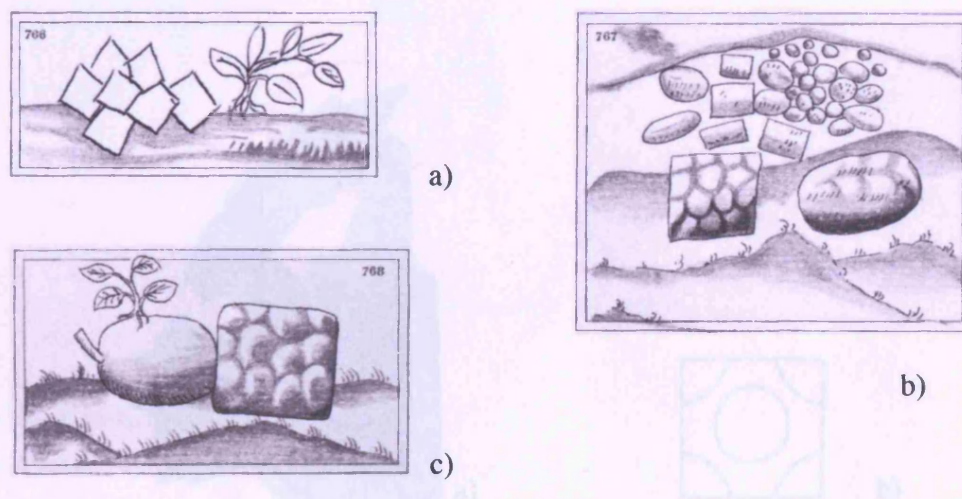


Figure 5.1 Descriptions of turquoise mineral in the Florentine Codex, Book 11

- a) Plate 766, xihuitl
- b) Plate 767, xihuitl
- c) Plate 768, teoxihuitl



Figure 5.2 Stone sculpture of a bundle of 52 years with the year sign '2 Reed'
(61 x 26 cm. MNA) (Matos Moctezuma, et al. 1996: 79)

Chapter 6

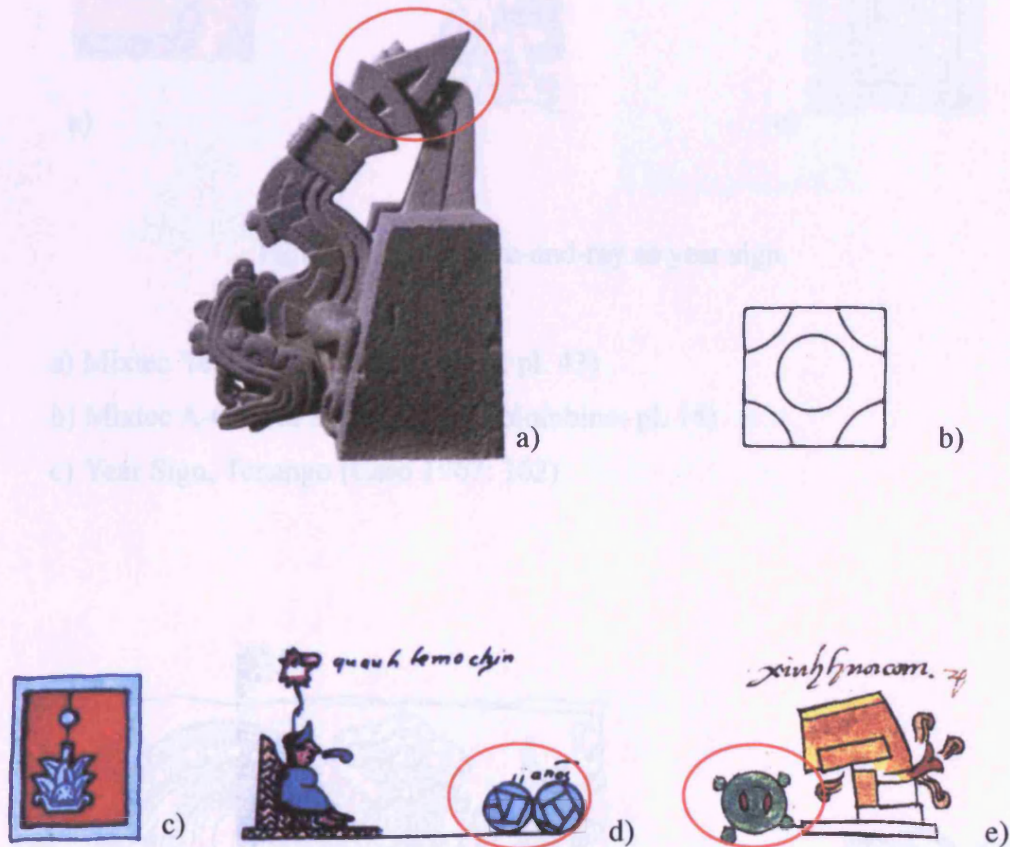


Figure 6.1 Iconographic representations of xihuitl

- a) Trapeze-and-ray sign as part of the tail of Xihcoatl
(77 x 60 cm. British Museum) (MacEwan 1994: 11)
- b) Quincross
- c) Aztec square year sign (Codex Aubin: pl. 45)
- d) Aztec turquoise year sign (Codex Aubin: pl. 150)
- e) Phonetic glyph 'xihuitl' (Codex Mendoza: fol. 13r)



Figure 6.2 Trapeze-and-ray as year sign

- a) Mixtec Year Sign (Codex Nuttall: pl. 43)
- b) Mixtec A-O Year Sign (Codex Colombino: pl. 14)
- c) Year Sign, Tenango (Caso 1967: 162)



Figure 6.3 Trapeze-and-ray sign in Teotihuacan

- a) Trapeze-and-ray sign in the headdress of Storm God. Techinantitla (Berrin, ed. 1988: 190)
- b) Date signs depicted on the conch shell (15 x 38 x 20 cm. MNA) (Pasztory 1997: 193)

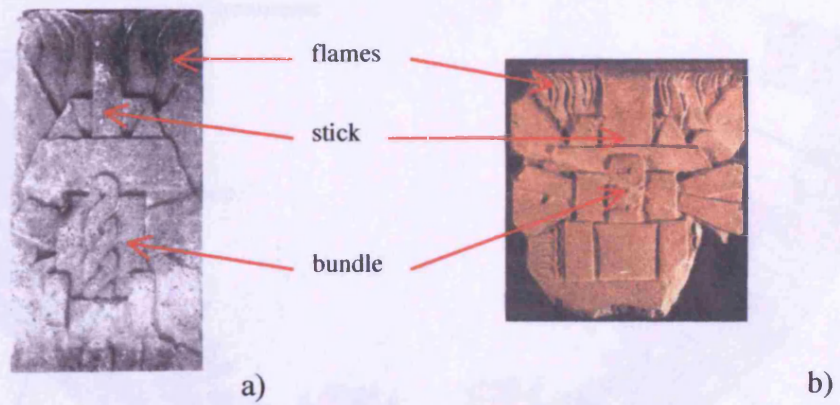


Figure 6.4 Batres sculptures, Teotihuacan
 (a. Langley 1986: 154; b. Solís 1998: 54)



Figure 6.5 'Meyotl' in headdress of Chicomecoatl (Codex Borbonicus: pl. 30)

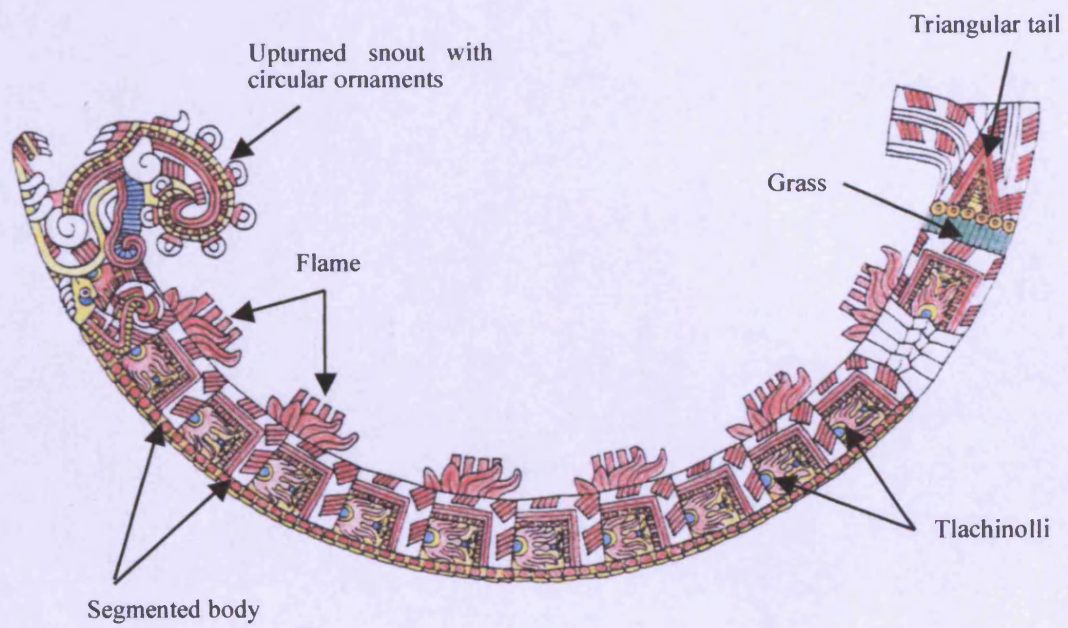


Figure 6.6 Xiuhcoatl of the Aztec Calendar Stone

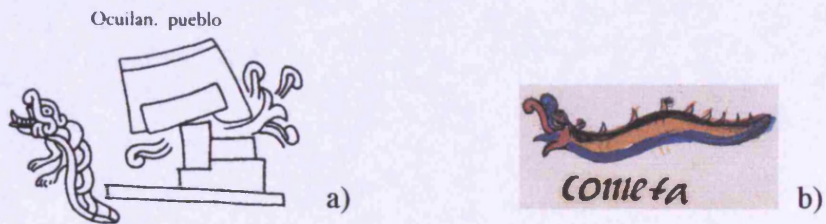


Figure 6.7 Similar glyphs to Xiuhcoatl

a) Toponymic glyph Ocuilan (Codex Mendoza: fol. 10v)

b) Comet (Codex Telleriano-Remensis: fol. 39v)



Figure 6.8 Xiuhtecuhtli with Xiuhcoatl (*xiuhcoanahualli*)
 (Codex Borbonicus: pl. 9)

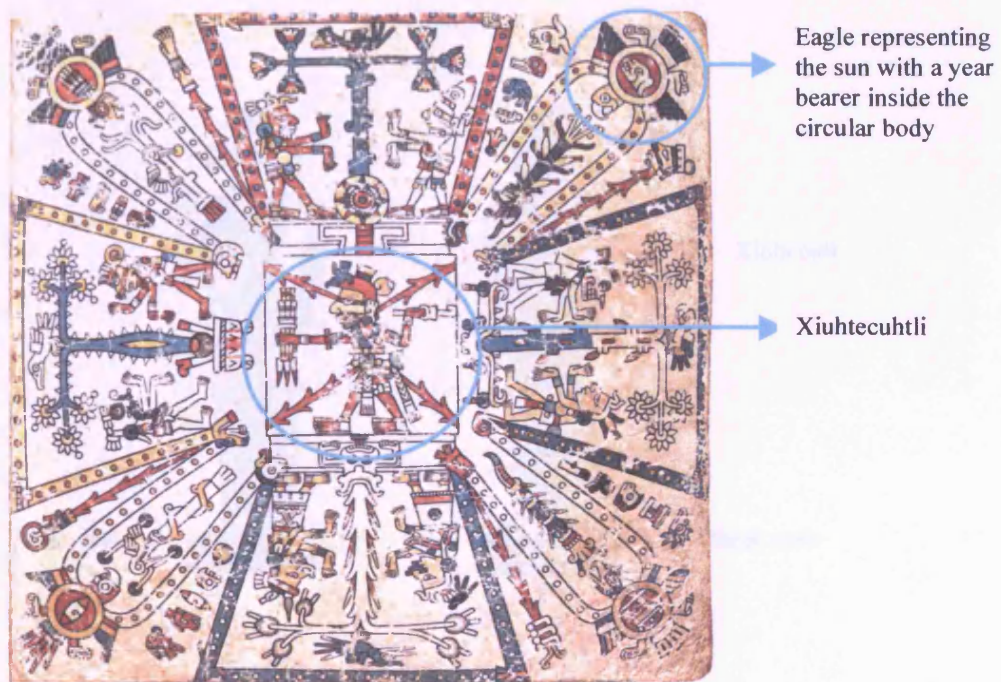


Figure 6.9 First page of the Codex Fejérváry-Mayer

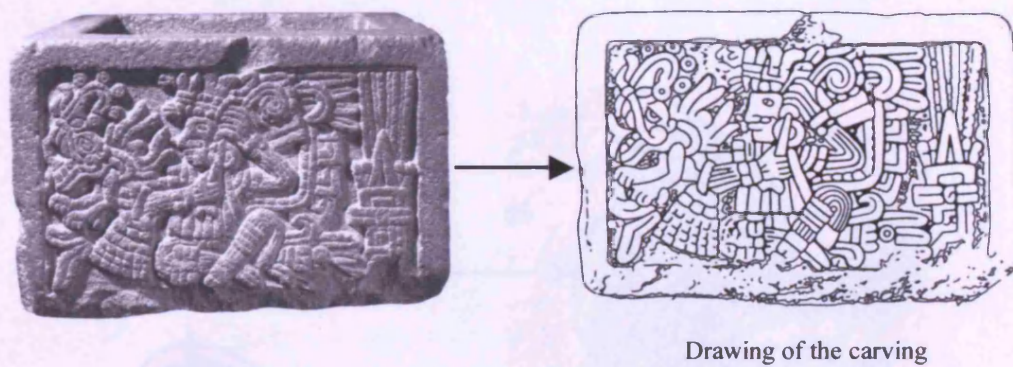


Figure 6.10 Stone box with Xiuhtecuhtli and Xiuhcoatl
(21.5 x 31.5 x 31.5 cm. MNA) (Serra Puche & Castillo Mangas 1992: 214)



Figure 6.11 Stone statue of Xiuhtecuhtli, Coxcatlan, Puebla
(111 x 36 cm. MNA) (Serra Puche & Castillo Mangas 1992: 197)

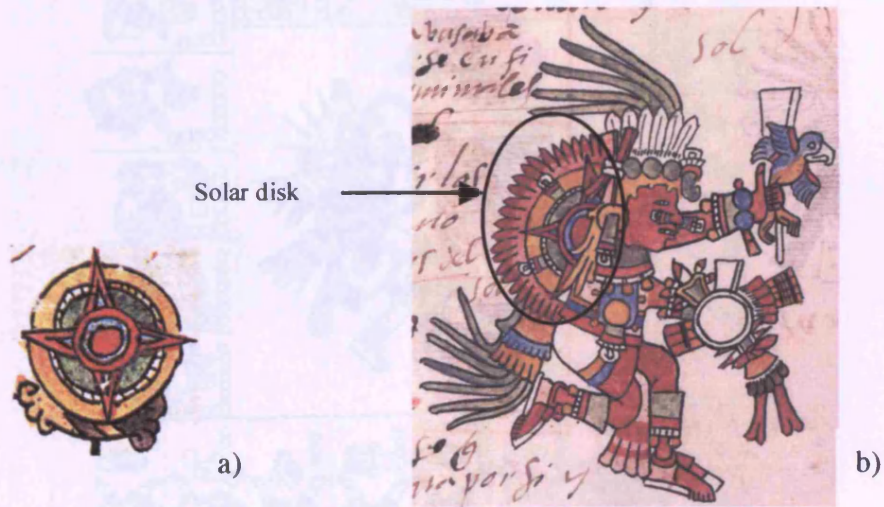
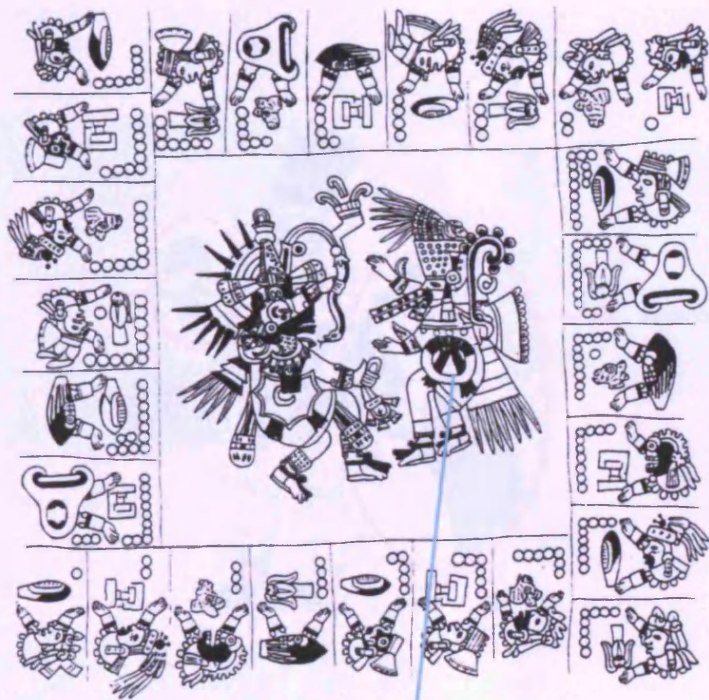


Figure 6.12 Solar disk

- a) Codex Telleriano-Remensis: fol. 31r
- b) Tonatiuh—the sun god—with solar disk on his back
(Codex Telleriano-Remensis: fol. 12v)

Figure 6.13 Tescatlipoca with solar disk on his back
(Codex Borgia: fol. 22)

- a) Whole view
- b) Tescatlipoca



a)



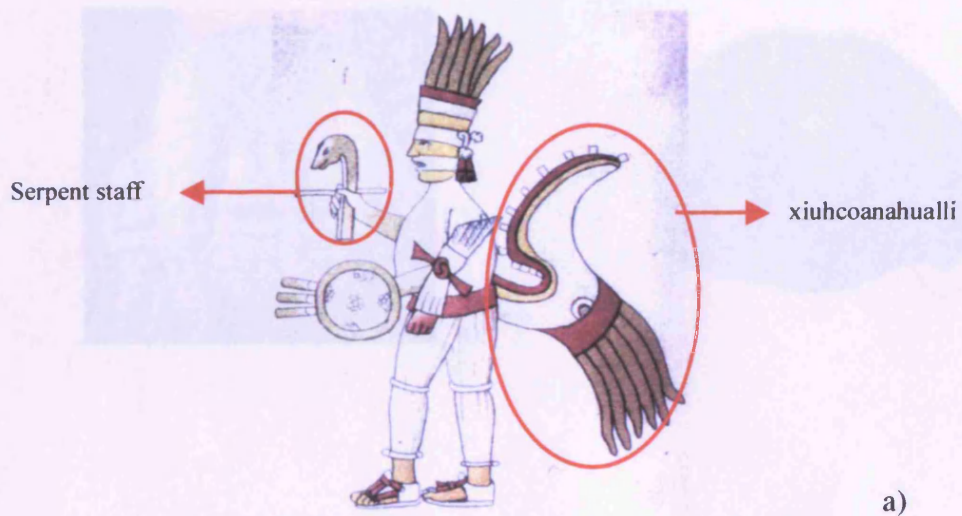
Xiuhcoatl

b)

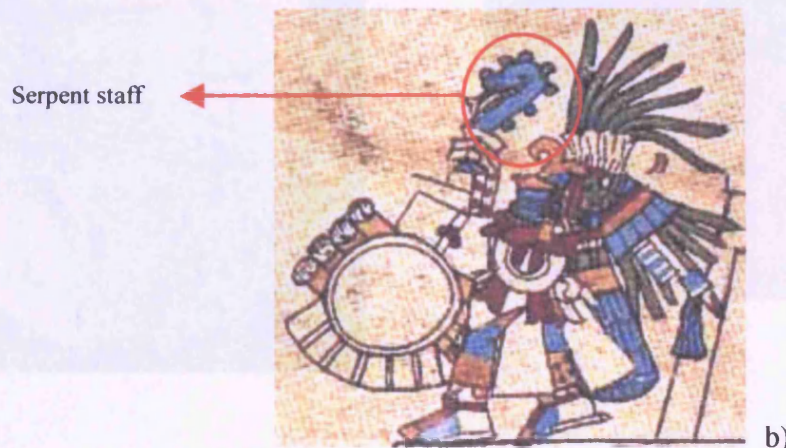
Figure 6.13 Tezcatlipoca with Xiuhcoatl (*xiuhcoanahualli*)
(Codex Borbonicus: pl. 22)

a) Whole view

b) Tezcatlipoca



a)



b)

Figure 6.14 Huitzilopochtli with Xiuhcoatl (*xiuhcoanahualli*)

a) Florentine Codex: pl. 1

b) Codex Borbonicus: pl. 34



a)



b)



c)



d)

Figure 6.15 Stone sculptures of Coyolxauhqui

a) 71 x 48 x 44 cm. Museo Nacional de Antropología, Mexico (MNA)

b) Green stone, 11 x 14.5 x 3.5 cm. Peabody Museum

c) Diameter: 330 cm. Museo del Templo Mayor (MTM)

d) Fragment. MTM



Figure 6.16 Chantico with ear ornaments of Xiuhcoatl
(Codex Telleriano-Remensis: fol. 21v)



a)



b)



c)

Figure 6.17 Stone sculptures of the Xiuhcoatl's head

a) 130 x 150 cm. MNA

b) Side view. MTM

c) Back view of b) with a date glyph '4 Reed'

(Matos Moctezuma, coord. 1990: 55)



a)



b)

Figure 6.18 Stone sculpture of a coiled serpent
(43.5 x 43.5 cm. Dumbarton Oaks)

a) Front view (Serra Puche & Castillo Mangas 1992: 198)

b) Bottom of the sculpture with a year sign and a name glyph
(Pasztor 1983: 252)

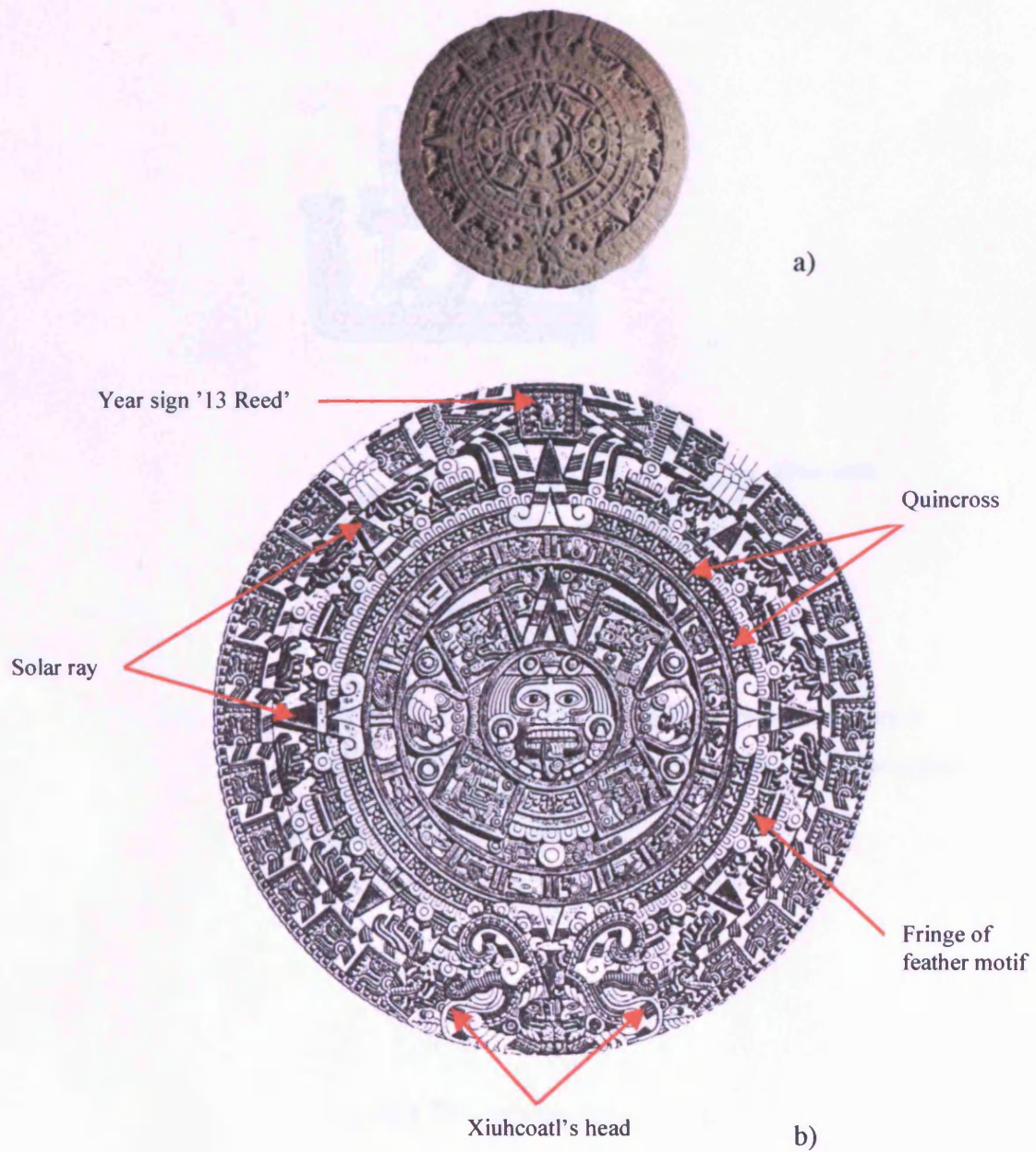


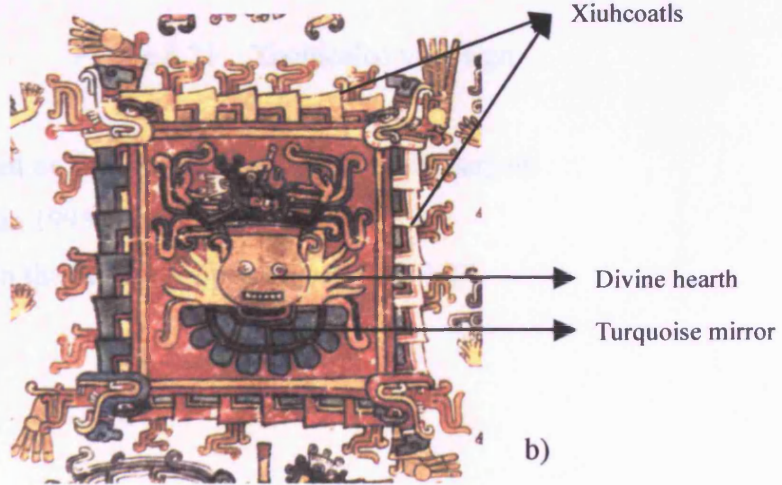
Figure 6.19 Aztec Calendar Stone

a) Diameter: 360 cm. MNA

b) Drawing of the sculpture (Graulich 1992: 293)



a)



b)

Figure 6.20 Mixtec fire serpent

a) Fire priest kindling fire on the fire serpent (Codex Laud: pl. 17)

b) Divine hearth surrounded by four fire serpents (Codex Borgia: pl. 46)



Figure 6.21 Xochicalco year sign

- a) Glyph carved on the Pyramid of the Feathered Serpent
(López Luján 1995: 113)
- b) Glyphs from the Stela 2 (López Luján 1995: 132)

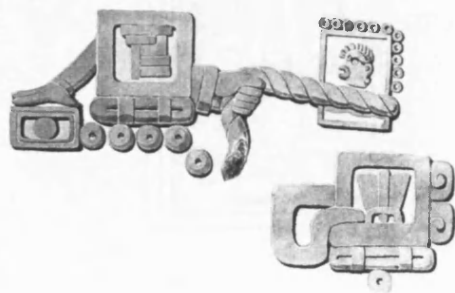


Figure 6.22 Glyphs carved on the Pyramid of the Feathered Serpent
The Year '9 House' is pulling the Day '11 Monkey' with a rope.
(López Luján 1995: 113)

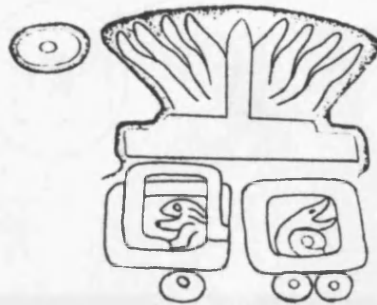


Figure 6.23 Glyphs for the first New Fire Ceremony in Xochicalco
(Sáenz 1967: 12)



Figure 6.24 Year sign '1 Rabbit' marked with a trapeze-and-ray sign and the
face of Xiuhtecuhtli, Late Postclassic Central Mexico
(Miller & Taube 1993: 113)

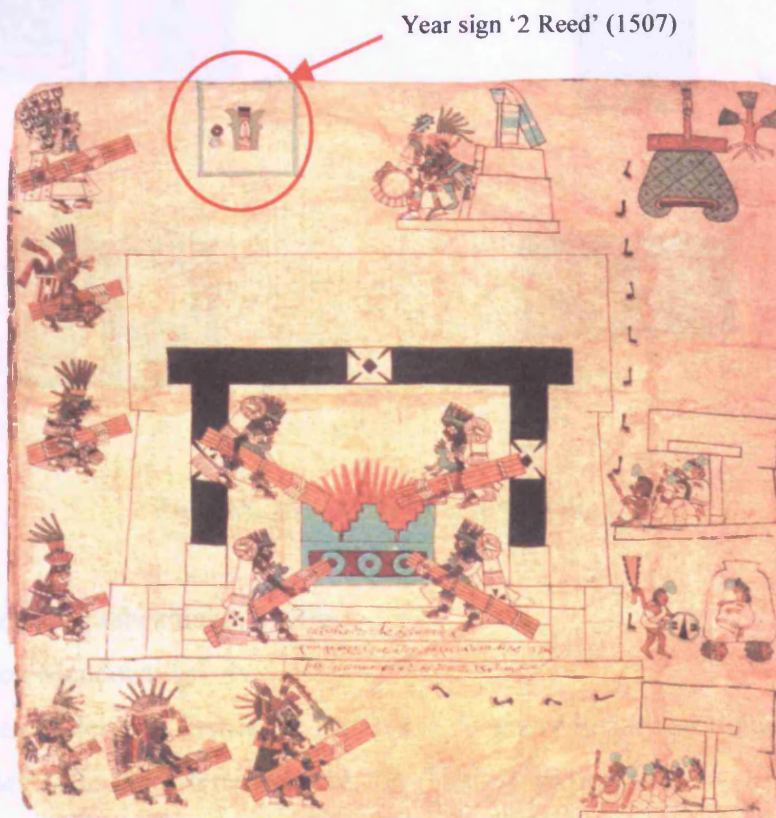


Figure 6.25 New Fire Ceremony (Codex Borbonicus: pl. 34)



Figure 6.26 Aztec square year sign

- a) Codex Magliabechiano: pl. 16r
- b) Codex Mendoza: fol. 4v
- c) Codex Telleriano-Remensis: fol. 28v (Legendary history section)
- d) Codex Telleriano-Remensis: fol. 29r (History section)



Figure 6.27 Turquoise glyph indicating the age of an old person (70 years old).
(Codex Mendoza: fol. 71r)

Turquoise year sign

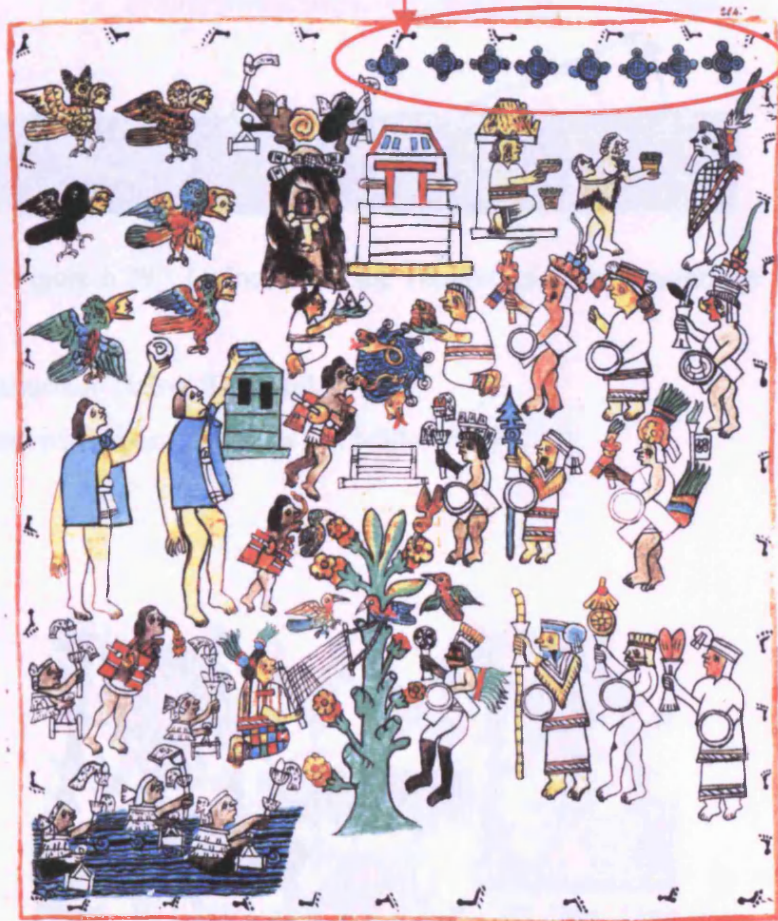


Figure 6.28 Turquoise year sign (Primeros Memoriales: fol. 254r)

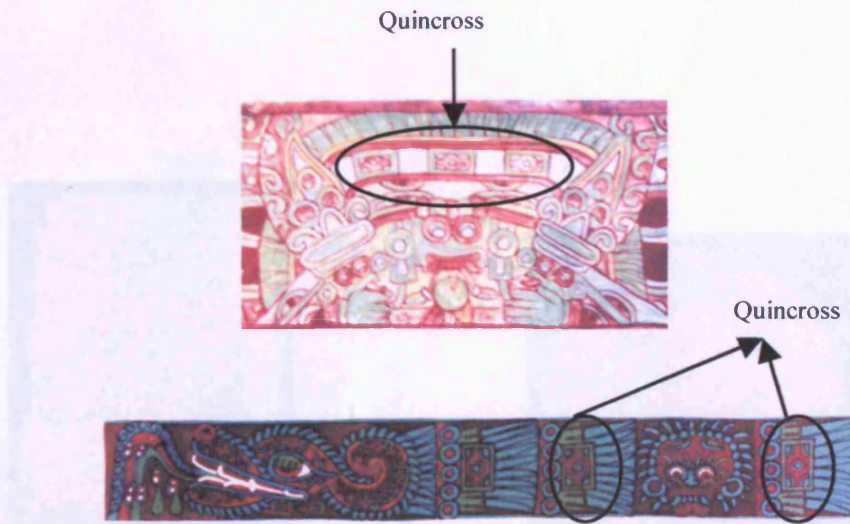


Figure 6.29 Quincross in the Teotihuacan mural paintings

a) Teotihuacan Tlaloc, Tepantitla

b) Feathered Serpent, Atetelco (A. Miller 1973: 165)

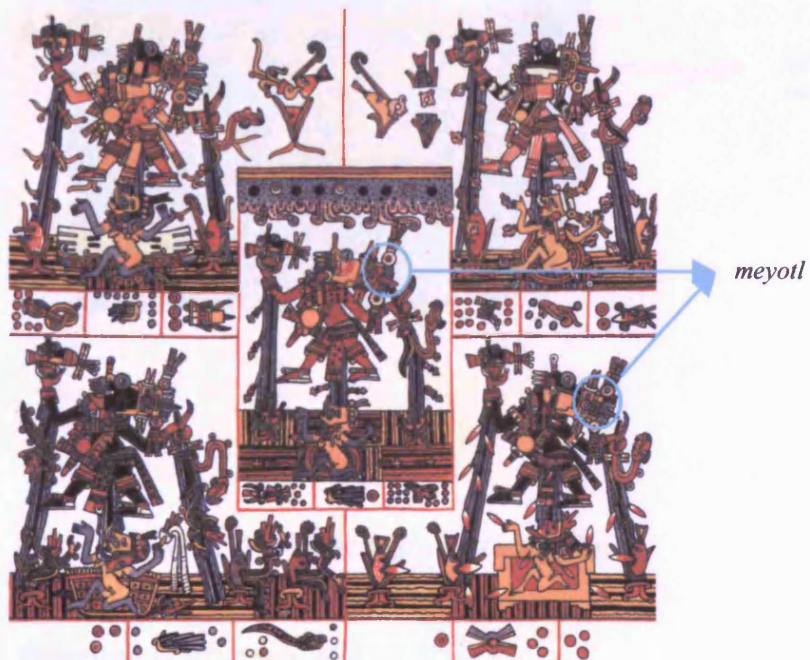


Figure 6.30 Five directions with rain deities and the first five years of the 52-year cycle (Codex Borgia: pl. 28)



a)



b)



Quincross in
a disk fringed
with feather

Solar ray or
sacrificial knife

c)

Figure 6.31 Three types of Tlaltecuhтли

a) Type 1 (Greenstone sculpture. MNA)

(Carrasco & Matos Moctezuma 1992: 91)

b) Type 2 (MNA)

c) Type 3 (Colonial column cut, 62 x 61.5 x 54 cm. MTM)

(Matos Moctezuma, et al. 1995: 172)



Figure 6.32 Stone sculptures with Tlaltecuhтли at the base

- a) Skeletal Goddess (Height: c. 76 cm. MNA)
- b) Feathered Serpent (Height: 115 cm. MNA)
- c) Coatlicue (Height: 350 cm. MNA)



a)



b)



c)



d)

Figure 6.33 Reused monoliths with Tlaltecuhli (cf. Figure 31c)

a) & b) MTM

c) & d) MNA

Figure 6.34 - *Stela of Tlaltecuhli* (Dissertation 770) *am. 1910* pp. 24-25

El arte de la escultura en piedra de la América Mexicana 1942: 200

El arte de la escultura en piedra de la América Mexicana 1942: 200

El arte de la escultura en piedra de la América Mexicana 1942: 200

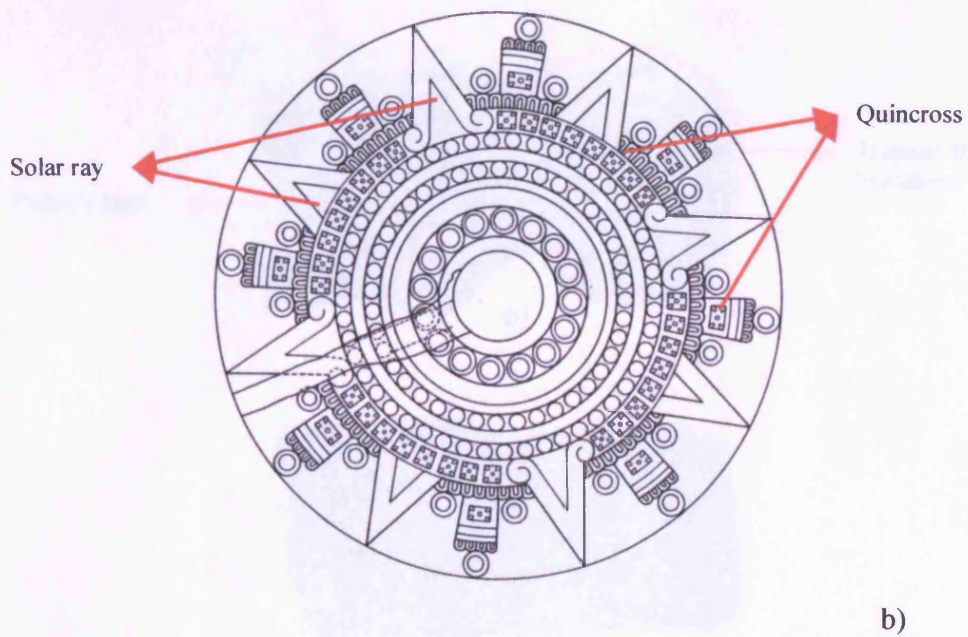


Figure 6.34 Stone of Tizoc (Diameter: 270 cm. Height: 90 cm. MNA)

a) Side view (Serra Puche & Castillo Mangas 1992: 200)

b) Drawing of the solar disk depicted on the top
(Serra Puche & Castillo Mangas 1992: 200)

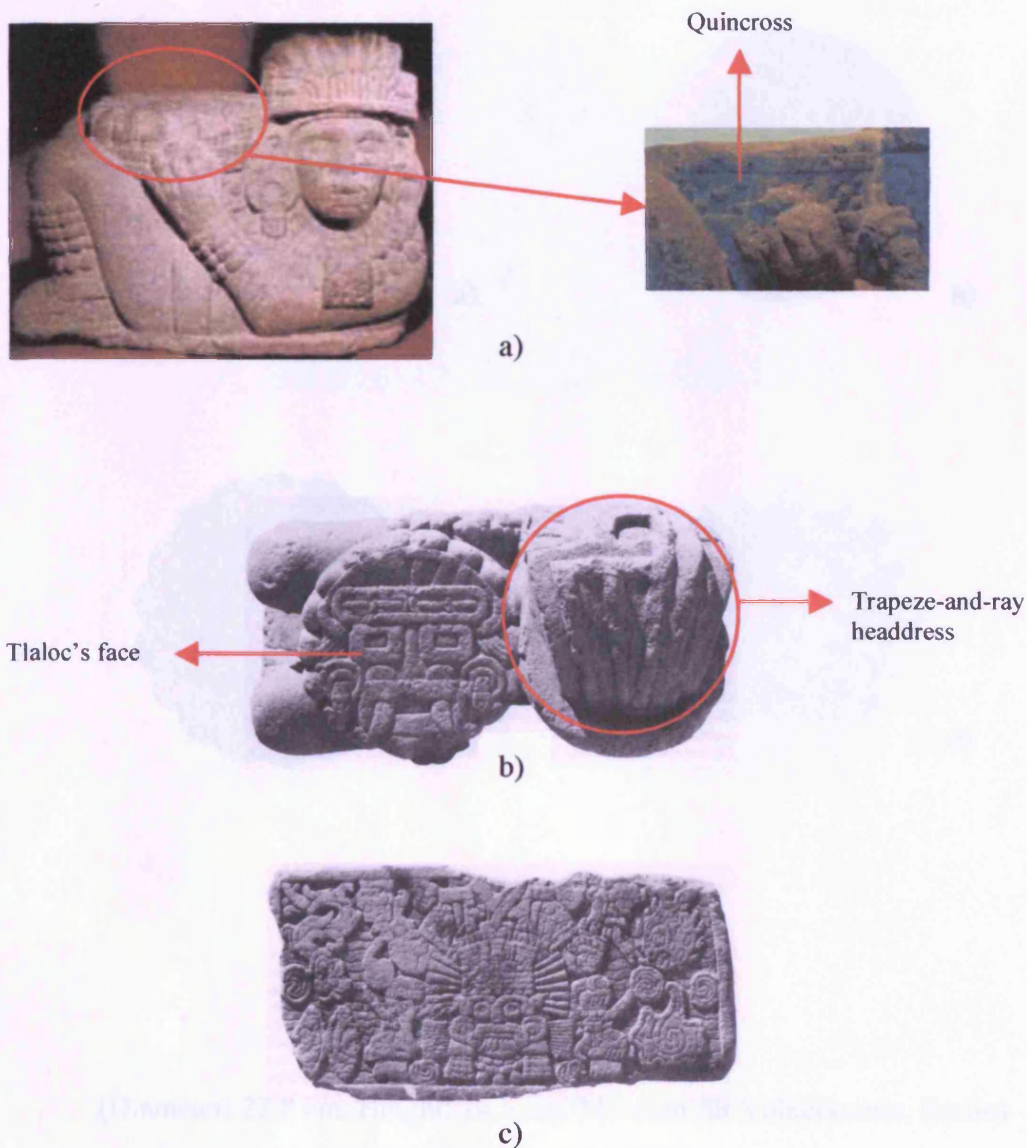


Figure 6.35 Rain Deity-Chacmool (54 x 78 cm. MNA)

- a) Front view. Quincross motifs depicted on the sacrificial vessel.
- b) Top view (Paszatory 1983: 174)
- c) Tlaloc-Tlaltecuhтли depicted on the base (Paszatory 1983: 174)

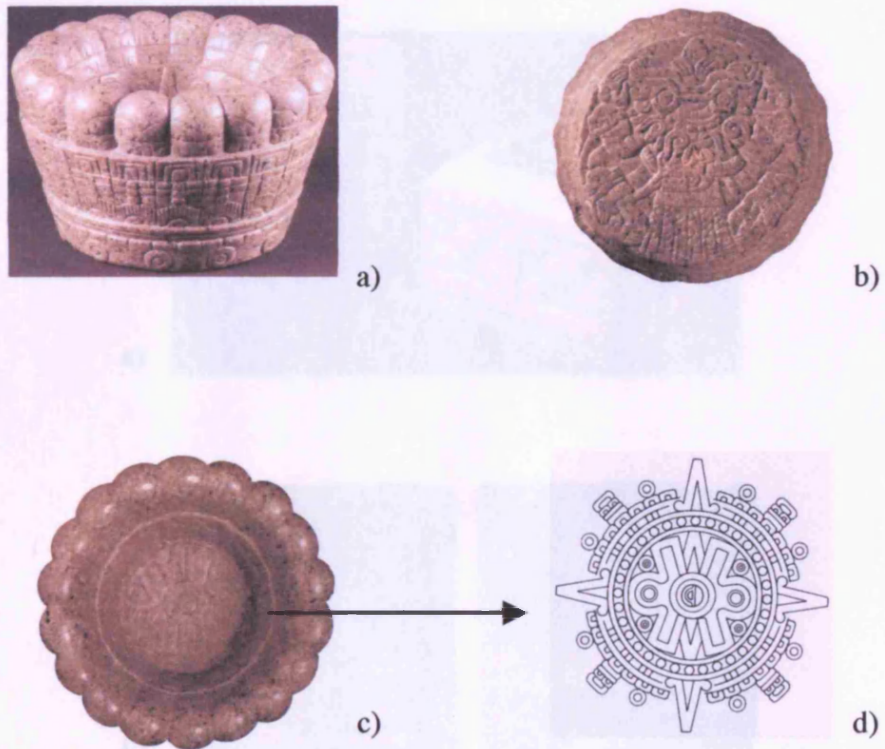


Figure 6.36 Sacrificial Vessel
 (Diameter: 23.8 cm. Height: 14.5 cm. Museum für Völkerkunde, Berlin)
 (Graulich 1992: 310)

- a) Side view
- b) Tlaltecuhтли depicted on the base
- c) Top view
- d) Drawing of the inside vessel. The day glyph '4 Movement' is depicted surrounded by the solar rings and rays.

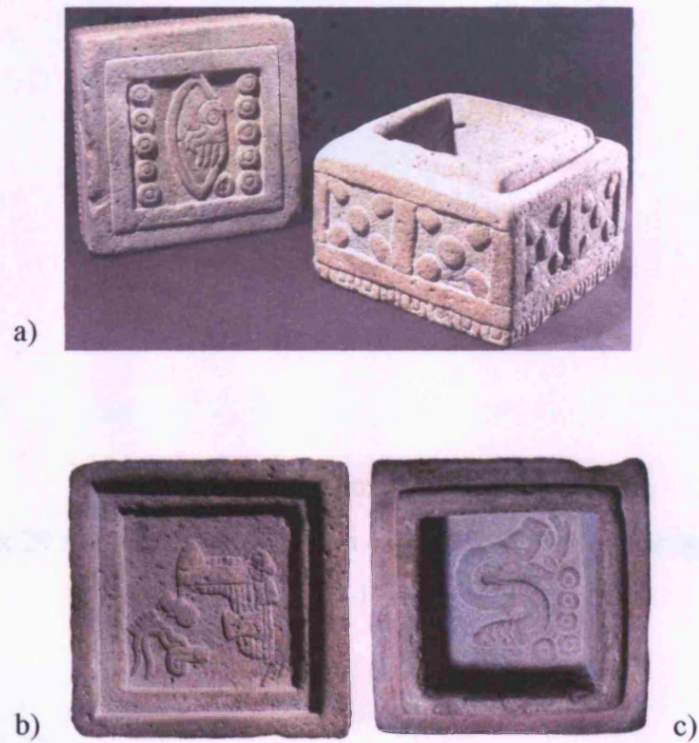


Figure 6.37 Stone box with quincross (14 x 23 x 23 cm. MNA)
 (Serra Puche & Castillo Mangas 1992: 209-10)

- a) Lid with a glyph '11 Flint'
- b) An emblem of Motecuhzoma II inside the lid
- c) A date glyph '5 Reed' at the bottom inside the box



Figure 6.38 Hochuicostl-Xitlanocotli with a back shield decorated with

Figure 6.38 Stone box with quincross
(27 x 29 x 37 cm. Field Museum of Natural History, Chicago)
(Baquedano 1992: 55)



Figure 6.39 A fragment of the base of a box (19 x 41.5 x 50.8 cm. MNA)

Figure 6.39 Stone box with quincross (19 x 41.5 x 50.8 cm. MNA)
(Boone 1992: 350)



Quincross
back shield

Figure 6.40 Huehuetotl-Xiuhtecuhtli with a back shield decorated with quincross (Codex Borbonicus: pl. 28)

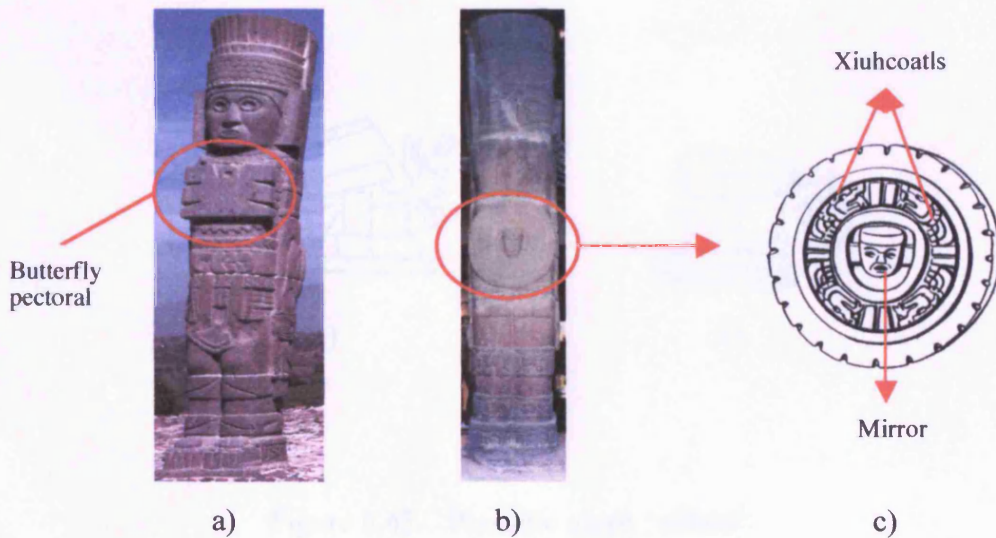


Figure 6.41 Atlantean of Tula (460 x 100 x 48 cm. Tula & MNA)

- a) Front view
- b) Back view
- c) Drawing of the back shield (Cobean & Mastache 1995: 180)

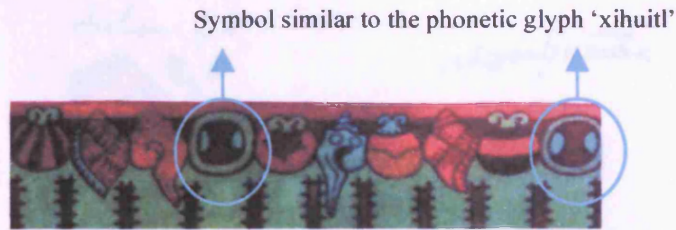


Figure 6.42 Aquatic symbols depicted on the mural of Atetelco, Teotihuacan
(A. Miller 1973: 165)

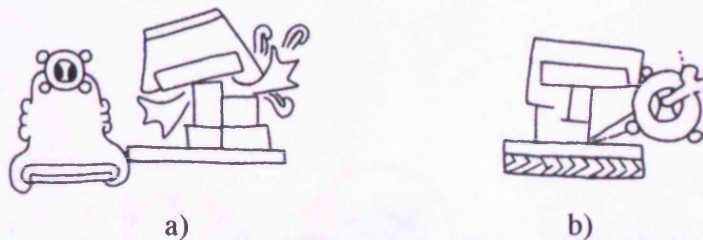


Figure 6.43 Phonetic glyph 'xihuitl'

- a) Xiuhtepec (Codex Mendoza: fol. 7v)
- b) Tlazoxiuhco (Codex Mendoza: fol. 20v)

See Figure 6.1e for colour.



a)

atezcacahuacan



b)

Figure 6.44 Phonetic glyphs *chalchihuitl* and *tezcacatl*

- a) Glyph *chalchihuitl* composing a toponymic name Chalco
(Codex Mendoza: fol. 4v)
- b) Glyph *tezcacatl* composing a toponymic name Atezcahuacan
(Codex Mendoza: fol. 42r)

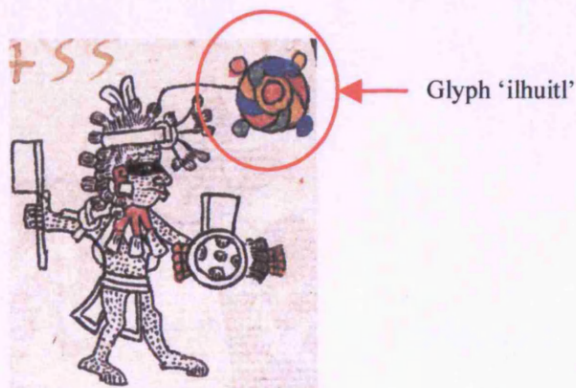


Figure 6.45 Glyph *ilhuitl* (Codex Telleriano-Remensis: fol. 32v)
A glyph *ilhuitl* (feast) attached to the white figure representing a sacrificial victim. (Quiñones Keber 1995: 217)

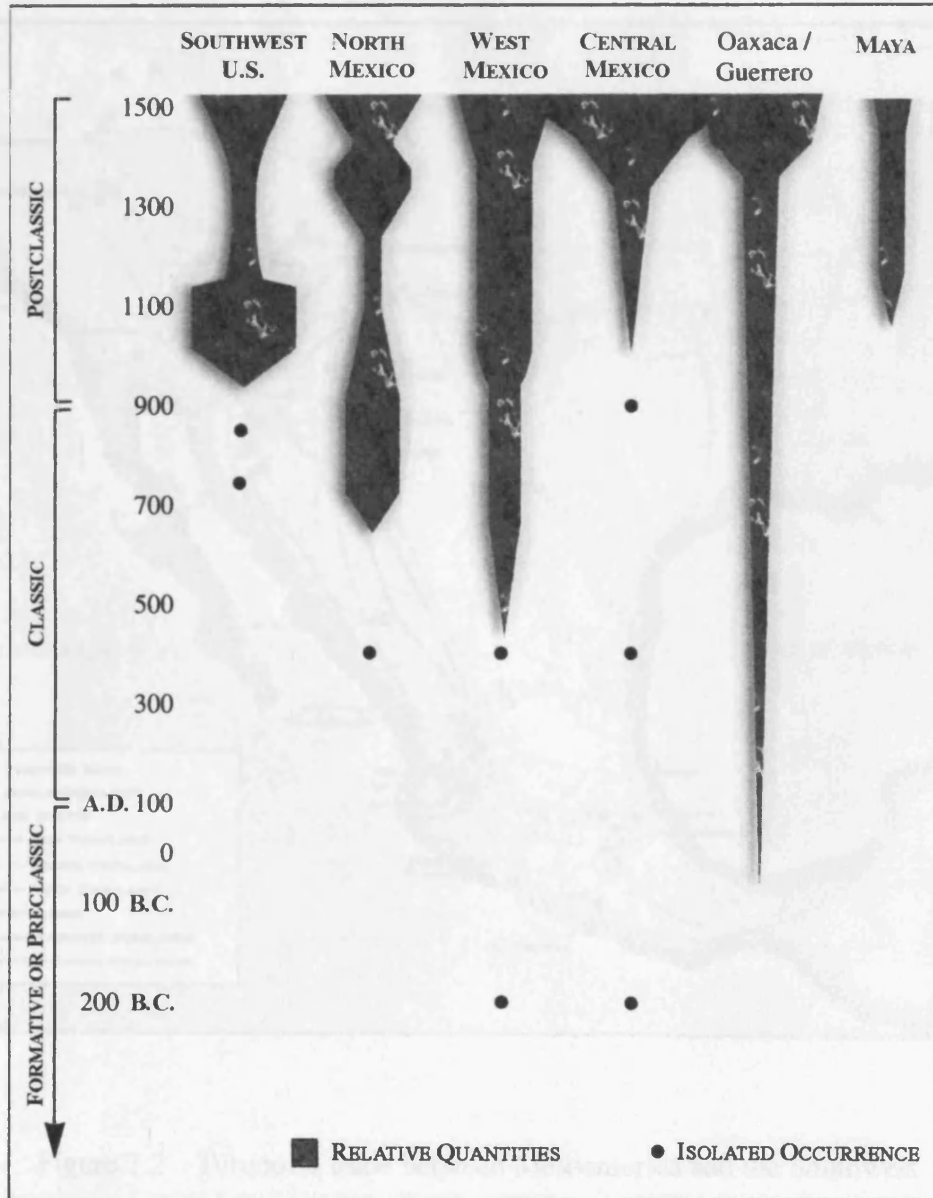


Figure 6.46 Quetzalcoatl with a headband in the form of a glyph 'xihuitl'
(Codex Telleriano-Remensis: fol. 8v)

Figure 7.1 Popularity of turquoise

Based on Harbottle & Wengert (1977: 30) and Wengert (1987: 22)

Chapter 7



Based on Harbottle & Weigand (1992: 59) and Weigand (1997: 28)

Figure 7.1 Popularity of turquoise

Based on Harbottle & Weigand (1992: 59) and Weigand (1997: 29)

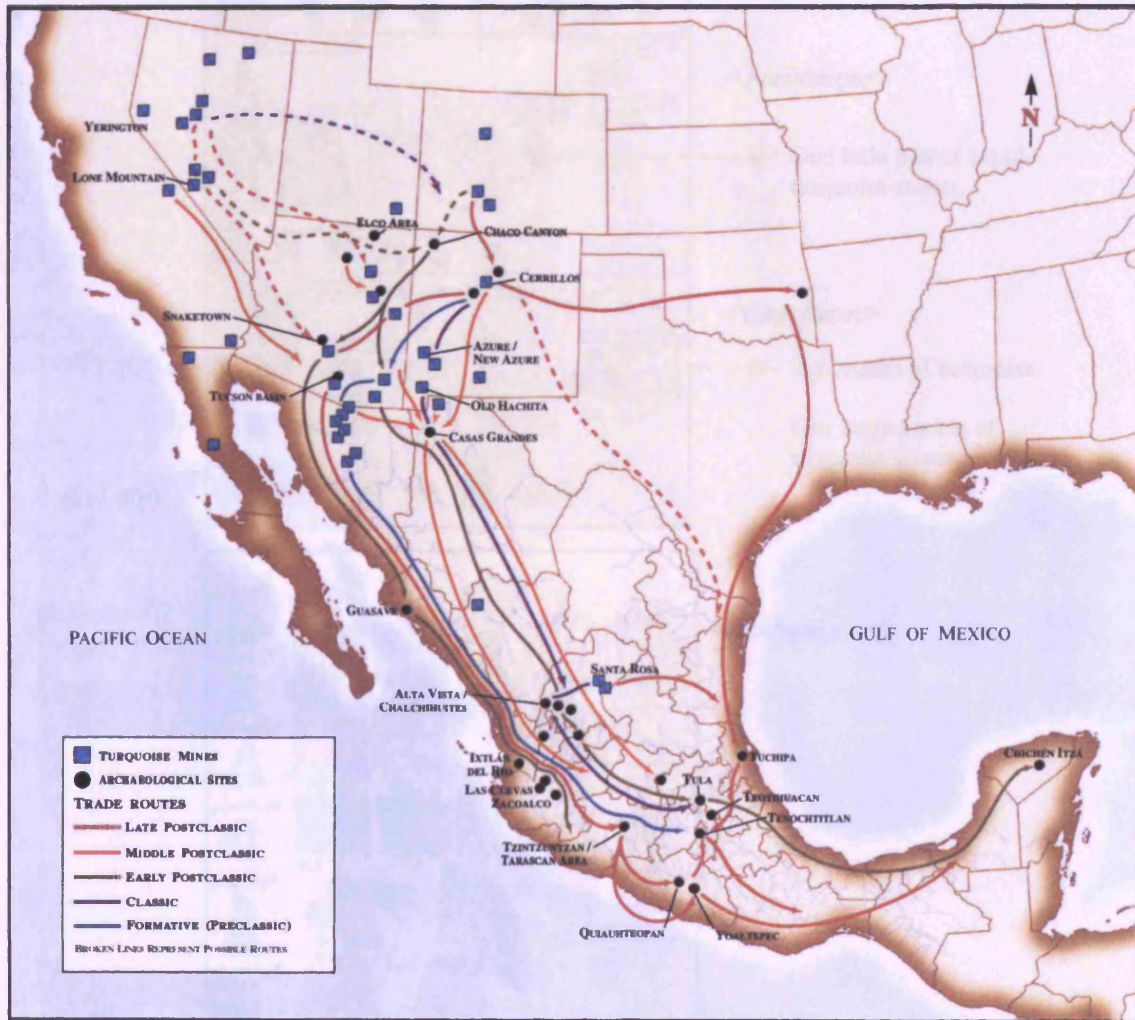


Figure 7.2 Turquoise trade between Mesoamerica and the Southwest
 Based on Harbottle & Weigand (1992: 61) and Weigand (1997: 28)

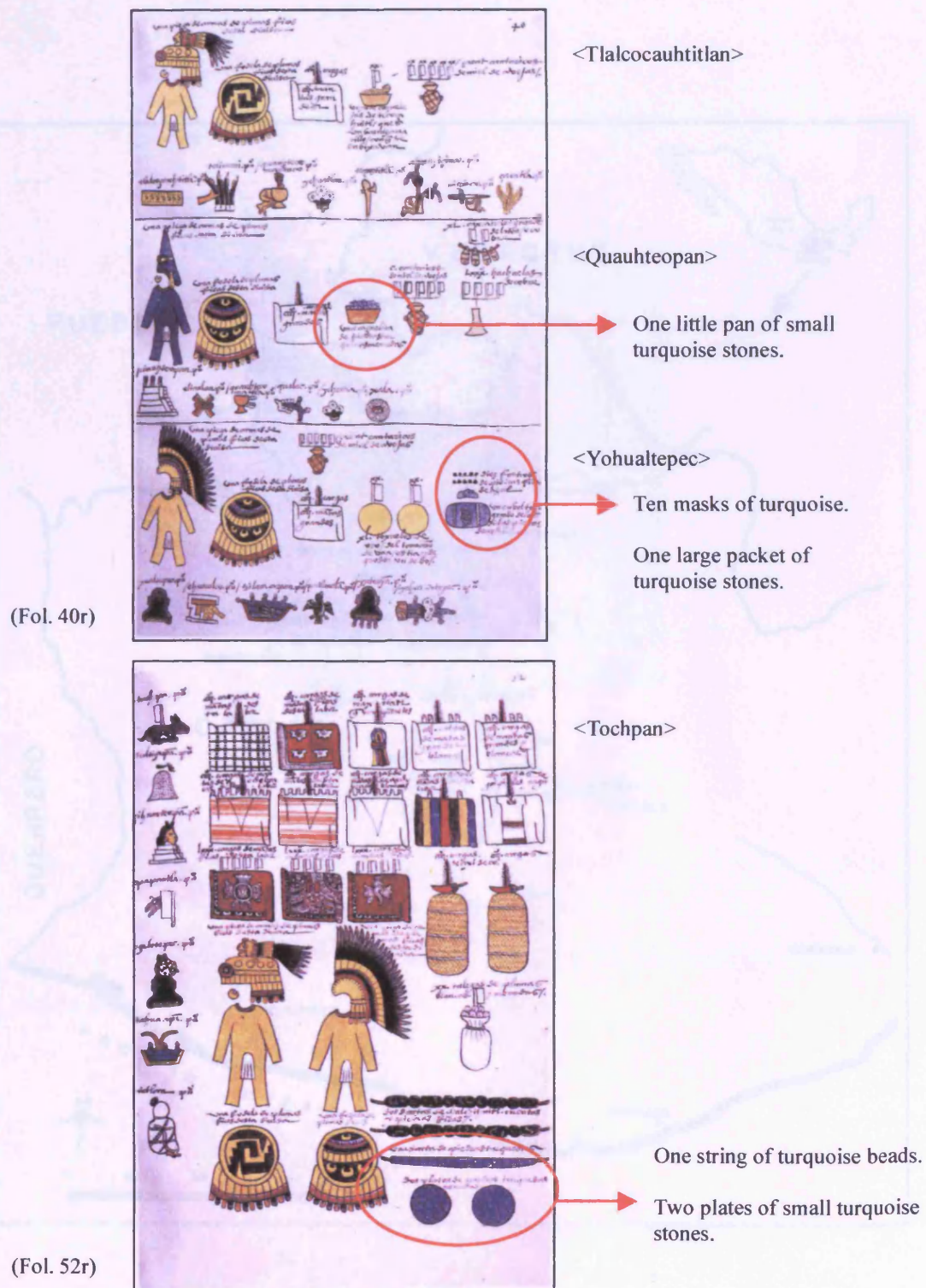


Figure 7.3 Tribute assigned to Quauhteopan, Yohualtepec, and Tochpan
Codex Mendoza (fols. 39v-40r, 51v-52r)



Figure 7.4 Map of the Zapotec-Mixtec region
 Based on González Licón & Márquez Morfín (1994: 224)



Figure 7.5 Skull mask with flints in the nose and mouth, from Offering 11 of the Temple Mayor
 Photo by Carrasco & Matos Moctezuma (1992: 116), and provenance by Matos Moctezuma (1988: 98)

- a) Turquoise mosaic surrounding bird of prey on stone, found in northern Arizona, Puchito III, c. A.D. 1100-1300
- b) Pre-Columbian turquoise mosaic on stone disk - Museum of Northern Arizona, Flagstaff
- c) Frog pendant, Mimbres, c. A.D. 1050 - School of American Research Collection, Museum of New Mexico
- d) Fragment of Anasazi frog effigy, red sand with turquoise - Puchito, Canyon Chaco, c. A.D. 1050-1100 - American Museum of Natural History, Laboratory of Anthropology, Santa Fe.



a)



b)



c)



d)

Figure 7.6 Examples of turquoise objects from the Southwest
(Karasik 1993: 122-3)

- a) Turquoise mosaic surrounding bird of pink sandstone, found in northern Arizona. Pueblo III, c. A.D. 1100-1300
- b) Pre-Columbian turquoise mosaic on stone disk. Museum of Northern Arizona, Flagstaff.
- c) Frog pendant. Mimbres, c. A.D. 1050. School of American Research Collection, Museum of New Mexico.
- d) Facsimile of Anasazi frog effigy, jet inlaid with turquoise. Pueblo Bonito, Chaco Canyon, c. A.D. 1050-1300. Museum of Indian Arts and Cultures, Laboratory of Anthropology, Santa Fe.



a)



b)

Figure 7.7 Turquoise ornaments of Mexica warrior

a) Codex Magliabechiano: fol. 72r. The comments in fol. 71v indicate that those ornaments are of paper and painted blue, possibly imitating the colour of turquoise.

b) Codex Borbonicus: pl. 9. It is part of the *trecena* scene of the day '1 Serpent' presided by the deities, Xiuhtecuhtli and Tlahuitzcalpantecuhtli (the god of Venus). It displays the ornaments of the warriors, namely, blue pointed crown, blue earplugs, blue nosepieces, and blue dog-shaped pectoral.

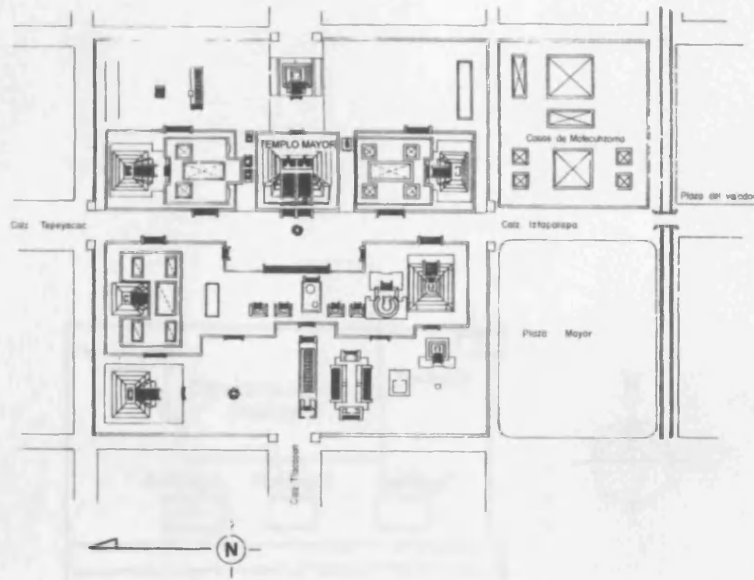


Figure 7.8 Hypothetical reconstruction of the Sacred Precinct of Tenochtitlan
Based on López Luján (1994: 59)

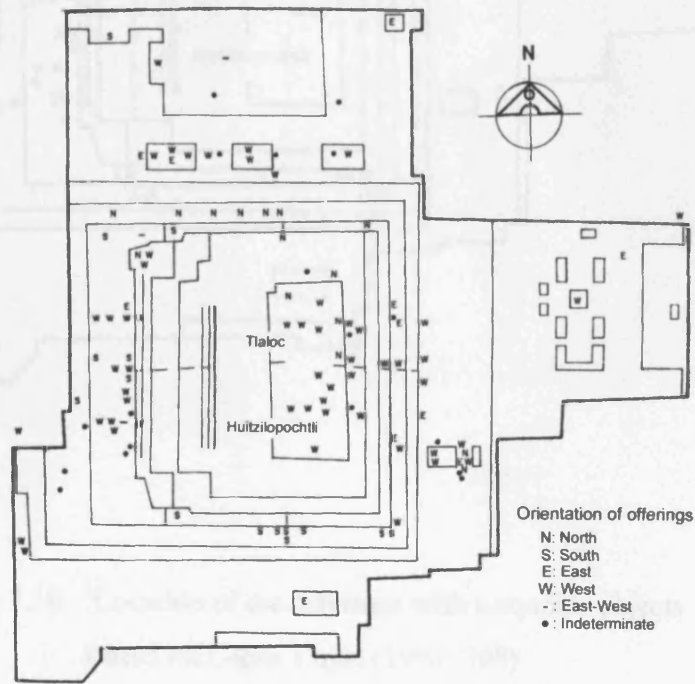


Figure 7.9 Location and orientation of the offerings
(as of 1994, total of 118 offerings)
Based on López Luján (1994: 116)

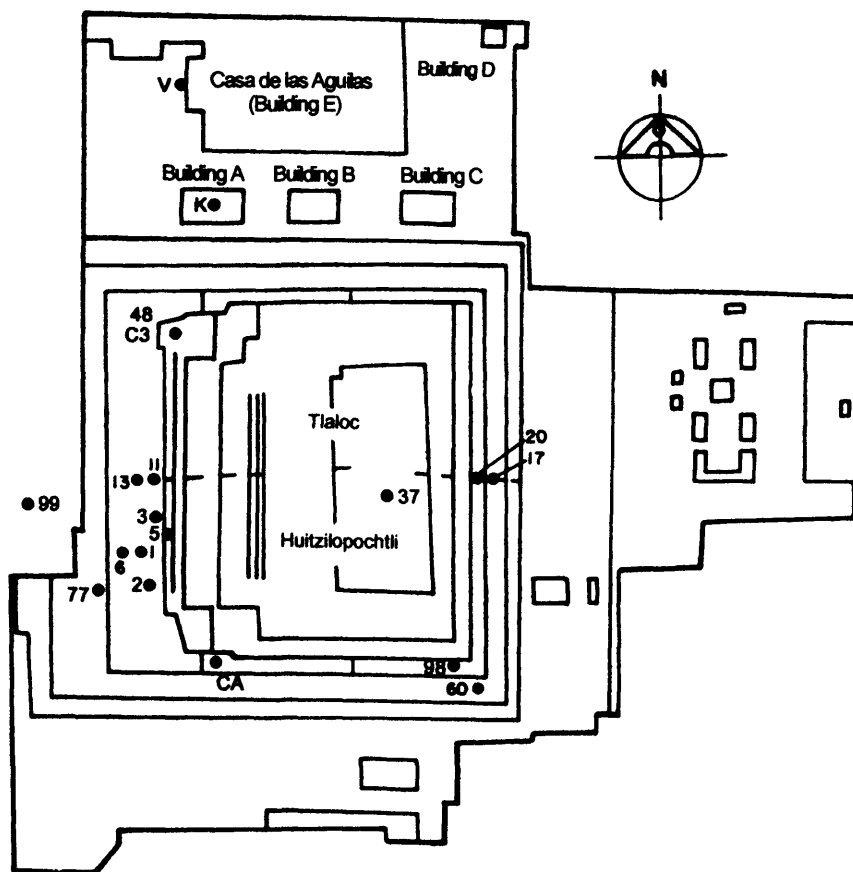


Figure 7.10 Location of the offerings with turquoise objects
Based on López Luján (1994: 308)



a)



b)



Front view



Turtle shell

c)

Back view

Figure 7.11 Turtle-related figures

- a) Turtle-Fire Serpent Sacrificer, Codex Nuttall: pl. 44
- b) Turtle-Fire Serpent Sacrificer with a turtle shell in the form of a solar disk, Codex Vindobonensis: pl. 30
- c) Green stone figure of Xiuhtecuhtli with a turtle shell on the back.
Size: 60 x 41 cm. MTM



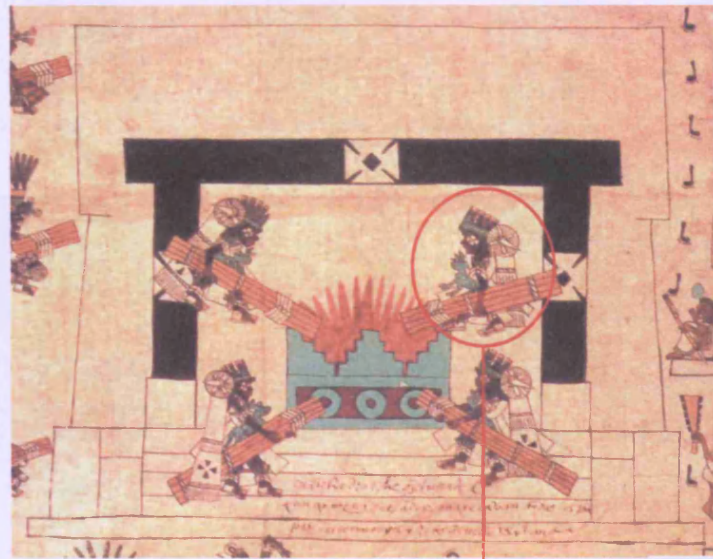
Figure 7.12 Itztapaltotec (Stone Slab Our Lord)
Codex Telleriano-Remensis: fol. 23v

Itztapaltotec represents an aspect of the fertility deity Xipe Totec, and was described as a human figure combined with a gigantic knife (Quiñones Keber 1995: 189).

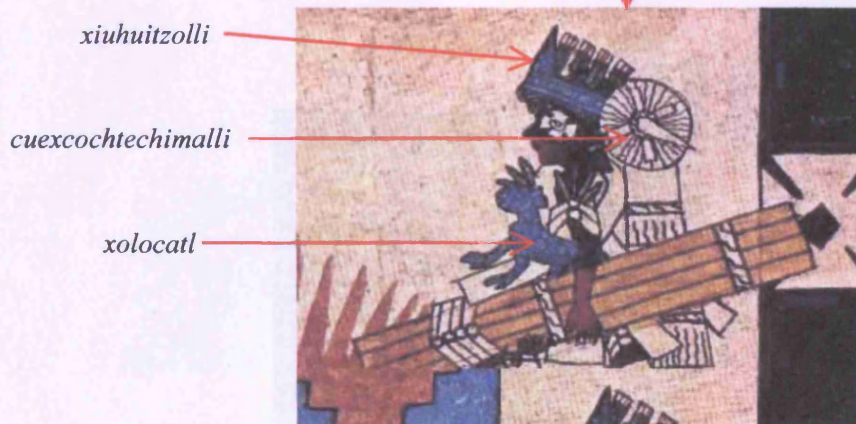
Figure 7.13 Ritual scene of Hueytlahuiztli (Codex Borbonicus, pl. 14)

- a) Hueytlahuiztli priest placing your bundles into fire
- b) One of the fire priests in the warrior and monetary coordinator with *xihuitlāhuitl*, *cuāxōtl*, *huēhuēhuētl*, and *uēhuēhuētl*.

Chapter 8



a)



xiuhuitzolli

cuexcochtechimalli

xolocatl

b)

Figure 8.1 Ritual scene of Panquetzaliztli (Codex Borbonicus: pl. 34)

a) Four fire priests placing year bundles into fire.

b) One of the fire priests in the warrior and mortuary decorations with *xiuhuitzolli*, *cuexcochtechimalli*, and *xolocatl*.

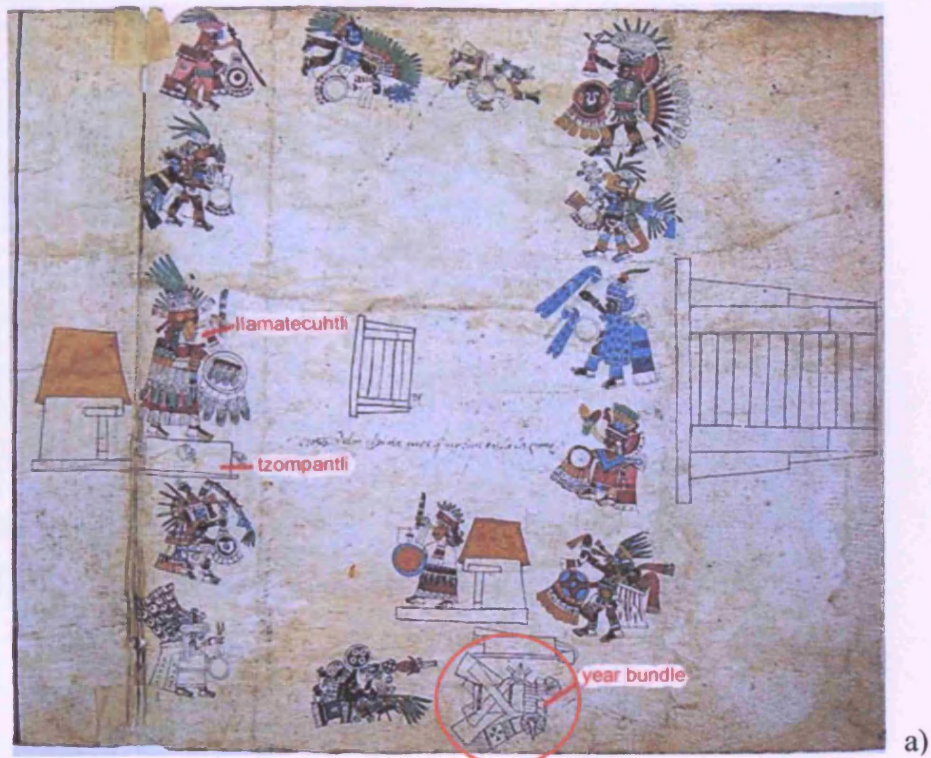


Figure 8.2 Burial of the year bundle in Tititl (Codex Borbonicus: pl. 36)

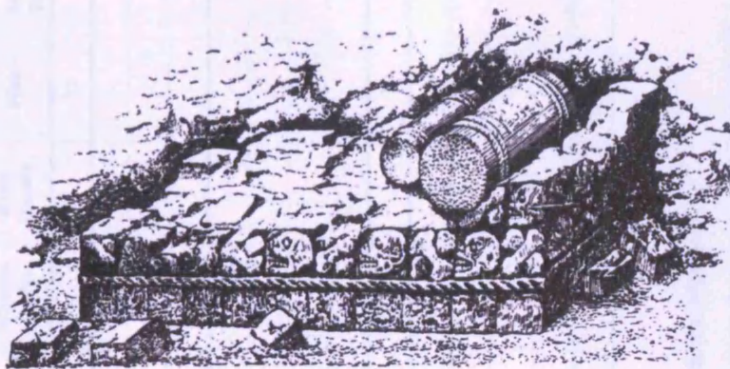
(Boase 1994: 134)

a) Ritual scene of burial of the year bundle.

b) The year bundle in mortuary decorations.



a)



b)

Figure 8.3 Tzompantli

a) Stone skull-rack altar to the north of the Templo Mayor
(Boone 1994c: 131).

b) Stone skull-rack altar with bundles of years, found in the Escalerillas Street,
Mexico City (Caso 1967: 135).

Appendix 1 Number of turquoise objects found in the Classic to Postclassic sites in Mesoamerica

		BEAD		MOSAIC														
		Bead Ornament	Mask	Skull Mask	Shield Disk	Wooden Tablet	Knife Handle	Flint	Deity Animal Figure	Pectoral	Small Disk	Ear Ornaments	Labret	Other Mosaic Ornaments	Other Mosaic Objects	Others	Total Entries	
MEXICA	Central Valley	Templo Mayor	2	-	-	3	-	-	12	-	-	16	-	-	5	-	127	165
		Tenochtitlan	1	-	-	-	-	-	-	-	-	-	-	-	3	-	-	4
		Aztec-Mixtec Style	-	4	2	2	-	3	-	9	2	1	-	-	1	-	-	24
		Toltec	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
NON-MEXICA	Zapotec-Mixtec	Caves	-	16	-	23	2	-	-	-	-	3	3	-	-	-	not counted	47
		Tombs of Monte Albán	55	-	1	-	-	-	-	-	-	-	2	-	-	1	35	94
		Other tombs	-	1	-	1	-	-	-	-	-	-	2	-	1	-	not counted	5
		Other sites	2	3	-	-	-	-	-	1	1	2	1	1	1	-	-	12
	Maya	Maya	-	1	-	4	-	-	-	-	1	-	4	-	-	4	-	14
	Guerrero	Guerrero	-	1	-	-	-	-	-	1	-	-	-	-	-	-	-	2
	West	Alta Vista	-	-	-	-	-	-	-	-	1	-	-	1	-	-	not counted	2
		Other Classic Sites	4	-	-	-	-	-	-	-	-	-	-	-	-	-	not counted	4
		Tarascan	4	-	-	-	-	-	-	-	1	1	4	2	-	-	not counted	12
	Total		68	26	3	34	2	3	12	11	6	23	16	4	11	5	162	386

Notes:

- 1) 165 entries of Templo Mayor Offerings include uncountable fragments.
- 2) The objects in the category of Aztec-Mixtec style are kept in the museums in Europe & USA with no information of provenance.
- 3) Caves: Acatlan, Santa Ana Teloxtoc, Tehuacan, in Puebla; Cheve, Ejutla in Oaxaca.
- 4) Other tombs: Zaachila, Cuilapan, Xoxo, Yanhuitlán, Huitzo
- 5) Other sites: Coixtlahuaca and Coxcatlan.
- 6) The 4 shields of Chichén Itzá were identical to the one found in Tula and are supposed to have been brought from Tula.

Appendix 2 List of turquoise objects found in Mesoamerica (Except objects from the Templo Mayor Offerings)

1. Mosaic Objects

- | | |
|-------------------------------|---------------------------------|
| 1.1 Masks (26) | 1.9 Ear ornaments (16) |
| 1.2 Skull masks (3) | 1.10 Labrets (4) |
| 1.3 Shields/Disks (31) | 1.11 Other Mosaic Ornaments (6) |
| 1.4 Wooden Tablets (2) | 1.12 Other Mosaic Objects (5) |
| 1.5 Knife Handles (3) | 1.13 Others |
| 1.6 Deity/animal figures (11) | |
| 1.7 Pectorals (6) | 2. Bead Objects |
| 1.8 Small Disks (7) | 2.1 Bead Ornaments (66) |

Abbreviations

AMNH: American Museum of Natural History, New York
BT: British Museum, London
EM: Ethnographical Museum, Berlin
INAH: Instituto Nacional de Antropología e Historia, Mexico
MA: Museo Amparo, Puebla, Mexico
MAG: Museo Arqueológico de Guatemala, Guatemala
MAH: Museo de Arqueología e Historia, Merida, Mexico
MNA: Museo Nacional de Antropología, Mexico
MRI: Museo Regional INAH, Puebla, Mexico
MRM: Museo Regional Michoacano, Mexico
MRO: Museo Regional de Oaxaca, Mexico
MTM: Museo de Templo Mayor, Mexico
NMD: National Museum of Denmark, Copenhagen
NMAI: National Museum of American Indians, Smithsonian Institution, New York
PEM: Prehistoric and Ethnographic Museum, Rome
PM: Peabody Museum, Cambridge
RMAH: Royal Museum of Art and of History, Brussels
SLAM: The Saint Luis Art Museum, St. Luis
SMNH: State Museum of Natural History, Vienna

Note

All the photos, otherwise indicated the sources, are taken by myself.

1. Mosaic Objects

1.1 Masks

1.1.1 Greenstone mask, found in a tomb in Malinaltepec, Guerrero (MNA)



Size: 21.7 x 21 cm. Teotihuacan, Classic (300-550).

It is of greenstone covered with an incrustation of small pieces of turquoise, with small bits of coral shell above the eyebrows and below the nose. Each eye was formed by an oval piece of pearl shell, with pupils of hematite (cf. Saville 1922: 54; Solís 1998: 59). The

mask was found in a cave in Guerrero, and is regarded a funeral mask (Gómez Tagle 1991: 39). The blue and red facial pattern and red nose ornament, similar to the mask 1.1.3, possibly show its identity as the divinity related to god of fire.

1.1.2 Wooden mask in the form of Ehecatl-Quetzalcoatl, a cave near Naco, Honduras (NMAI)



Size: H. 21.6 cm (8.5 in), three facial projections extend 10.2 cm (4 in) from face. Postclassic.

It is a mask of white cedar covered with mosaics of turquoise and other stones set in a thick gum or pitch with

which it was coated. Three greatly elongated straight projections represent the nose and the two lips. Holes were cut for the eyes and two small ones on the sides for the thongs which bound it to the head. A large cavity in the forehead was probably the setting of the crowning stone of the collection [Blackiston, A. Hooton (1910) Recent discoveries in Honduras. *American Anthropologist*. N. S. vol. 12. Quoted in Saville (1922: 67)]. It is also recorded that the mask was found in a cave near Naco, with hundreds of copper bells of varying sizes and shapes (Blackiston 1910). The possible identity of the mask is Quetzalcoatl-Ehecatl in the Central Mexican style, because of three projections analogous to the beak of the wind god.

1.1.3 Wooden mask, Cheve cave, Oaxaca <No figure>

The Cheve cave, located in the east of Cuicatlan, is composed of a main chamber of 70 meters wide and 200 meters long with two elongated galleries (González Licón 1994: 232-4). González Licón (1990: 201-3; 1994: 232-4) reports that a wooden mask covered with turquoise mosaic was found in the main chamber with numerous human bones scattered on the man-made stone altar and some on the floor, placed on a layer of grass and covered also with the same grass. Other objects found with the mask and the bones were many fragments of ceramics, some complete ceramic vessels, obsidian knives, projectile points, and stone beads. Based on the analysis of the artifacts, the main chamber is supposed to have been used during the Postclassic period by the group of people who buried their rulers and families with many offerings, and who venerated the cave as their place of origin (González Licón 1994: 233). The turquoise mask was possibly placed on one of the buried corpses.

1.1.4-5 Two wooden masks, Ejutla cave, Oaxaca <No figure>

Ejutla is a heavily looted Mixtec cave in La Cañada region, but two wooden masks with turquoise mosaic and at least forty-five burials were found inside it (Markman & Markman: 1989: 94-5; González Licón 1994: 230). The Ejutla masks are said to be very in style similar to the Cheve mask mentioned above (1.1.7) (González Licón 1994: 232). These burials are supposed to reflect Mixtec elite-style burials including the killing of servants as recorded by the chroniclers (Moser 2003: 272). These two masks were possibly placed over the faces of the dead Mixtec rulers.

1.1.6-13 Eight wooden masks, a cave in Acatlan, Puebla (NMAI)

Photos of 1.1.7-13: Saville (1922: plates IX, XI-XVI).

All the objects found in this cave are kept in the Museum of the American Indian, Heye Foundation, New York. As for the turquoise mosaic objects from the same site, eight masks, eight shields, and two earplugs were found. From the worn condition of the finds, it is supposed that the objects in this cave deposit were used by the natives after the Spanish Conquest, possibly until comparatively

recent times (Saville 1922: 64). All the masks are in damaged conditions and lack the chin. All the mosaic incrustations are set in a bed of gum. The first four masks (1.1.6-9) display the workmanship with higher skills nearly alike, and the others (1.1.10-13) are different in character, as the mosaic pieces are larger and coarser and considerable stone other than turquoise was employed in the decoration (Saville 1922: 63).

1.1.6 Mask-1 Size: H. 19 cm (7.5 in), W. 17.1 cm (6.75 in). Information based on Saville (1922: 63-4).



This is the best-preserved specimen. Bands of light and dark turquoise are observed on the forehead and temples. Around the lower margin of the face is a band of blackish to dark-brown stones. On the sides of the mask are two large black disks made of a composition resembling charcoal and sticky clay. The tip of the nose, as well as the chin, is gone. There are traces of red paint over the mouth and in the circular spaces on each side of the nose.

1.1.7 Mask-2 Size: H. 16.5 cm (6.5 in), W. 15.9 cm (6.25 in). Information based on Saville (1922: 64-5).



It is quite similar to the previous one (1.1.10), but lacks the encircling lower marginal band. The outer zone is of light turquoise, with zones of a darker shade toward the centre. There are traces of red paint above the mouth and in the spaces on each side of the nose. On the left temple are the remains of a black disk of the same material as on the last mask.

1.1.8 Mask-3 Size: H. 18.4 cm (7.25 in). Information based on Saville (1922: 65).



The turquoise incrustation is light-blue colour. There are traces of red paint above the mouth. The black composition inlay on the temple is square, and contains a biconical depression which does not pass through the wood. Around the eye is a

raised design, possibly a serpent's body. The entire lower zone is at present without decoration, and possibly was never covered with mosaic.

1.1.9 Mask-4 Size: H. 18.7 cm (7.38 in). Information based on Saville (1922: 65).



The small section of mosaic remaining on the forehead is dark-blue, while that on the rest of the face is light blue. There is a black composition disk on the temple, and traces of red paint above the mouth. The marking on the plain surface on the forehead appears to be ancient.

1.1.10 Mask-5 Size: H. 16.2 cm (6.38 in), W. 14.6 cm (5.75 in).

Information based on Saville (1922: 65).



A portion of the chin still remains, with mosaic decoration, indicating that the missing chins in the other masks were probably thus embellished. In general appearance this specimen differs widely from those just described above. The pieces used in the mosaic are rougher in shape and larger. A few bits of bright-green turquoise are found on the forehead, but the rest of the incrustation is a stone of a brownish- or grayish-green colour. The distinctive feature is the band which encircles the forehead, running downward and ending at the sides of the nose. It is of black composition, but is highly polished, and there are pieces of light-brown colour. Traces of red paint appear above the mouth.

1.1.11 Mask-6 Size: H. 17.1 cm (6.75 in), W. 13.3 cm (5.25 in).

Information based on Saville (1922: 65-6).



It lacks the chin, but still retains a good part of the mosaic. This specimen is somewhat different in treatment from the others, closely resembling in technique the following mask fragment. The mass of incrustation is outlined by a band of single light brownish-gray stones. The forehead has a mosaic

of blackish and dark-greenstones, the same effect being seen on each side of the plain space at the sides of the nose, merging into lighter zones on the cheeks. Red paint is above the mouth and on the spaces at the side of and below the nose. The space above the eyes is coated black, the material being probably obtained by thinning the black composition into a coarse paint by the addition of melted bum or wax. Two black composition disks are on the temples.

1.1.12 Mask-7 Size: H. 14.3 cm (5.63 in). Information based on Saville (1922: 66).



The mosaic, of large bits of stone, is outlined by a line of single lighter stones. The forehead contains a mosaic of greenish stones, and the space above the ridge of the nose has a patch of light-red shell bits. The space on each side of the nose and in the mouth is painted red, while that above the eyes is painted jet black. A black composition disk is on the temple.

1.1.13 Mask-8 Size: H. 17.5 cm (6.88 in), W. 13.3 cm (5.25 in).



Information based on Saville (1922: 66).

This mask no longer contains mosaic. This mask was once covered with mosaic decoration may be seen in the fragment remaining at the right side of the mouth. The eyes in this specimen are semi-lenticular in shape, differing from the others which are either ovate or lenticular in outline.

1.1.14-15 Two wooden masks, Santa Ana Teloxtoc cave, Puebla (MRI)

Size: 1.1.14: 15.5 x 15 cm. 1.1.15: 16 x 15 cm. Mixtec-Aztec, Late Postclassic (c. 1500). Photos of 1.1.14: Royal Academy of Arts (2002: 475); 1.1.15: Vargas P., et al. (1989: 124).

From a cave in Santa Ana Teloxtoc, Puebla, a total of ninety-five objects (later classified to sixty-five entries) were recovered including thirty-seven wooden masks, of which the six show some trace of mosaics and the two clearly with turquoise (Vargas P., et al. 1989: 107-8, 122-40). The cave consists of two



1.1.14



1.1.15

major galleries and its entrance is six meters wide, three meters high and one meter wide, and the main gallery parts in two ways, one to the left (Gallery 1), perpendicular to the other (Gallery 2) which extends in the same direction as the main gallery (Vargas P. & Cortés de B. 1989: 97-9). The seventy elements, including fragments of masks, shields, vessels and bone remains, were recovered scattered on the floor from the first gallery, and the two turquoise masks also belong to this gallery (Vargas P. & Cortés de B. 1989: 99, 104; Vargas P., et al. 1989: 122-4).

The first mask (1.1.14) retains most of its turquoise mosaic and its onyx inlays in the eyes and mouth. This mask displays a nose ornament in the form of two small wings, painted red, on either side of the nose, which is similar to the eight masks found in Acatlan (Royal Academy of Arts 2002: 475). The second mask (1.1.15) shows anthropomorphic feature with two protuberances on the head, and most of the mosaic have been lost (Vargas P., et al. 1989: 122, 124). The elements can be dated to the Classic to the early Colonial, but the purpose of the use of the cave is difficult to interpret because of the disordered and fragmental condition of the elements (Vargas P. & Cortés de B. 1989: 102-6). The great quantities of masks and bones may indicate that they were dedicated as offerings to some kind of ritual or burial (Vargas P. & Cortés de B. 1989: 98, 102-4).

1.1.16-7 Two wooden masks, a cave(s) in Tehuacán, Puebla (MRI)



1.1.16



1.1.17

Size: 1.1.20: 15 x 7 cm. 1.1.21: 17 x 16 cm. Photos: Royal Academy of Arts (2002: 475)

Two masks are kept in the Museo Regional de Puebla (Royal Academy of Arts 2002: 475).

The first mask (1.1.16) has two protuberances on the head, similar to the second mask of Santa Ana Teloxtoc, and

wide ear ornaments suggest that this mask may represent a supernatural being combining human and feline elements. Only a little remains of turquoise mosaic, a small piece of obsidian near the nose, a piece of silex near the mouth remains on the mask. Likewise, the second mask (1.1.17) contains only a few fragments of turquoise and patches of cement remain. The eyes of the mask are pierced to take inlays and the large rectangular mouth may have contained inlays representing teeth or fangs. Although no information has been recorded about this cave, it is possible that these masks were used for the Mixtec elite burial same as the others mentioned earlier in 1.1.14-15.

1.1.18 Wooden mask (half), a cave in Tehuacán, Puebla (EM)



Only half of this mask remains. According to Dr. M. Fischer of the museum (personal communication), this mask was found in a cave in the Tehuacán Valley, Puebla, but no detailed context has been recorded nor the mosaic materials have been analyzed yet.

Some mosaic incrustations, possibly of turquoise, on the cheek still remain, and the side of the nose and mouth seem painted red

like other masks found in the Mixtec caves. More than sixteen similar fragmental masks, some with remains of mosaics, were found in Santa Ana Teloxtoc (Vargas P., et al. 1989: 131-40). This may also have been related to the Mixtec elite burial.

1.1.19 Wooden mask, a tomb of Coixtlahuaca, Oaxaca (MNA)



Size: 13.5 x 11 cm. Mixteca, Postclassic (900-1521).

This mask was recovered from Coixtlahuaca, and was used in the burial/funeral context (Solís 1998: 175).

Coixtlahuaca was the most northerly Postclassic Mixtec capital in the Mixteca Alta (Evans & Pohl 2001: 161-2).

In Coixtlahuaca, three tombs were found in the same patio, the third of which was the richest, with five corpses and rich collections of jewelry, ceramics, crystal and alabaster glasses, remains of paintings, utilitarian instruments and turquoise mosaics (Dahlgren 1990: 268-9). This mask shows

the artistic traits similar to the other masks found in the Mixtec caves. Most of the turquoise mosaic remains on the mask and the eyes contain conch shell inlays. Although detailed information is not provided, it is possible that the mask was offered to the dead elite.

1.1.20-22 Three wooden masks (MNA)



1.1.20

1.1.21

1.1.22

All three masks show characteristics similar to the other Mixtec masks. The first mask (1.1.20) lacks upper left half of its face, but most of the mosaics are retained and the eye has an inlay. The second (1.1.21) does not retain much of its mosaic or the inlays of the eyes and teeth. The third (1.1.22) looks like an anthropomorphic face with a fang. The provenances of these three masks are unknown; however, it is possible that they belong to the tombs of Zaachila, because it is often mentioned that the Zaachila tombs contained some turquoise mosaic objects including masks (Bernal 1970: 361; Winter 1989b: 83; A. Miller 1995: 149-59). Zaachila, like Monte Albán, was one of the old Zapotec towns taken over by the Mixtecs in the Postclassic period, and the tombs were reused by them (Bernal 1970: 359-61, A. Miller 1995: 157, Duverger 1999: 394-5). The grave goods of the Zaachila tombs are comparably as rich as those of Tomb 7 of Monte Albán, and a number of turquoise objects have been found (Bernal 1970: 361, Winter 1989b: 83; A. Miller 1995: 157).

1.1.23 Wooden mask with inlaid teeth and eyes (BM)

Size: H.16.5, W.15.2 cm. Mixtec-Aztec, Late Postclassic (1400-1521).

This is a cedar wood mask, the outer surface of which is completely covered with a mosaic of turquoise. The inner side is thinly coated with red pigment. The eyes and teeth are of white shell. There are pierced squares of shell at each



temple. This mask is believed to represent Xiuhtecuhtli, the god of fire (cf. Royal Academy of Arts 2002: 476). A stylized butterfly picked out in mosaic of a darker hue across both cheeks of the mask indicates that it represents Xiuhtecuhtli (McEwan 1994: 70). Butterfly is an emblem (usually as a pectoral) of Xiuhtecuhtli (see Chapter 6 for iconographic characteristics of the deity).

1.1.24 Wooden mask with nose ornament (PEM)



Size: H. 25, W. 15 cm. Mixtec-Aztec, Late Postclassic (1350-1521). Photo: Biscione, et al. (1993: 29).

This mask is of wood with mosaics of turquoise, jadeite, shell, and mother-of-pearl. It looks like the face emerging from the open jaw of a serpent. This mask carries nose ornament and two fire serpents on its sides whose bodies continues intertwined across the forehead (cf. Toscano 1952: 482-3; Biscione, et al. 1993: 29). From these attributes, it is thought to represent Xiuhtecuhtli. It might have been part of the gifts sent by Motecuhzoma II to Cortés and from him to the King Carlos V during 1519-20, or collected in 1518 by Juan de Grijalva in the east coast of Mexico (Biscione, et al. 1993: 30). The mask might have been produced during the Late Postclassic period in the Valley of Mexico or in the Gulf Coast, where at the moment of the greatest expansion of the Aztec empire, the influence of the stylistic tradition of Mixteca-Puebla was extended (Biscione, et al. 1993).

1.1.25 Wooden mask (BM)



Size: H. 17.3 x W. 16.7 cm. Mixtec-Aztec, Late Postclassic (1400-1521). Photo: McEwan (1994: 74).

This is a cedar wood mask, and the face is formed by the intertwining and looping of two serpents whose bodies are in different shades of turquoise. The teeth are of shell and the rattles of the serpents seem to have been gilded.

This mask is thought to have been one of the masks of Quetzalcoatl, which was offered to Cortés, described in the Florentine Codex (Sahagún 1953-81: Bk 12, 11). It shows a double and twisted snake forming the nose and surrounding the eyes, as Sahagún records.

1.1.26 Wooden mask with the protruding tongue (PEM)



Size: H. 24 x W. 15 cm. Postclassic. Photo: Biscione et al. (1993: 30).

This mask is of wood with mosaics of turquoise, malachite, conch shell, mother-of-pearl, gilded bronze. The edges of the orbits and the protruding tongue are painted red, while the fangs are white. On the side of the face, below the right eye, is the head of an alligator, in the neck of which is set a garnet (cf. Saville 1922: 62-3; Biscione et al. 1993: 30). The face has some peculiar anatomic features; a long upraised nose, a deformed cut of the mouth showing a smirk, a long tongue that terminates in the form of an animal head. The mask is thought to represent a divine figure related to Quetzalcoatl, because the red protruding nose and tongue are analogous to the red beak of Ehecatl-Quetzalcoatl (Biscione et al. 1993: 30).

1.2. Skull masks

1.2.1 Decorated human skull, Tomb 7, Monte Albán, Oaxaca (MRO)



Mixtec, Monte Albán V (1325-1521).

The cache with treasure of gold and other precious objects in Tomb 7 was found at the Classic site of Monte Albán by Alfonso Caso in 1932. These offering are supposed to be made by the Postclassic Mixtec people, the successors of this Zapotec ceremonial centre. The original Zapotec construction and the use of Tomb 7 may have been as much as 800 years earlier than the date of the Mixtec burial (Miller 1995: 157). At some time after the collapse of the Monte Albán civilization, the Mixtecs came, reopened the tomb, and shoved the remains of the previous occupants to the back,

to make room for nine of their own dead with sumptuous offerings (Caso 1969: 59; 1974: 209; Furst & Furst 1980: 104). In this tomb a total of nine corpses were found scattered with more than 330 pieces of grave goods in two chambers (Caso 1969: 59 & Appendix; 1974: 206). According to Caso (1969: 147-9, Appendix), a total of ninety-four turquoise objects were found in Tomb 7. The turquoise objects include thirty-eight necklaces of turquoise beads; seventeen necklaces of turquoise beads mixed with other beads, such as gold, jade, and pearl; thirty plaques with mosaic incrustations; two earplugs; one carved bone with mosaic incrustations; five fragments; and one skull covered with mosaics.

This decorated skull was found in the southwest corner of the first chamber of the tomb. It was placed on the base made of the mix of copal and amaranth seeds. The base was painted red. Inside the skull was also painted red. The eyes and the nose are of shell. Caso (1969: 63-4) suggests that the shell inserted in the nose was a representation of flint knife, which looks similar to the skulls found in the offerings of the Templo Mayor (cf. Figure 8.5). Likewise, it is supposed that this skull represents Tezcatlipoca or Huitzilopochtli as Blue Tezcatlipoca, comparing with two skull masks kept in European Museums (1.2.2-3 of this Appendix), and that it was a trophy head of war or ritual object belonged to the buried person (Caso 1969: 59-69). This skull mask may have been associated with both ideas of trophy skulls and of other masks found in the Mixtec caves. In other words, this skull may have been an offering to the buried person, and its turquoise mosaic decoration may imply not only an aspect of the deities related to the solar-war cult but also the concept of death and funeral ritual like other Mixtec masks placed over the face of the dead.

1.2.2 Skull mask (BM)



Size: H. 19.5, W. 12.5 cm. Mixtec-Aztec, Late Postclassic (1400-1521).

This mask is formed of turquoise and lignite mosaic set on a human skull, the back of which has been cut away and the inside covered with soft leather. The mosaic forms broad alternating bands of lignite and turquoise, and the eyes

are of polished convex disks of iron pyrites set in circles of white shell. The nasal opening has been enlarged slightly and inset with slices of pink shell. This mask can be identified with Tezcatlipoca because of the pattern of the facial painting (cf. McEwan 1994: 75).

1.2.3 Skull mask (EM)



Size: H. 16.8 cm (6.63 in). Postclassic. Photo: Saville (1922: pl. XVIII).

This mask is of the front part of the skull, covered with sky-blue to pale slabs of turquoise (Saville 1922: 67). It is lost in World War II, and detailed information is not recorded (personal communication with Dr. M. Fischer).

1.3 Shields/Disks

1.3.1-3 Three wooden disk, Cheve cave, Oaxaca <No figure>

Three wooden shields with turquoise mosaics were recovered from one of the galleries of the same Cheve cave in which the one turquoise mask was found (González Licón 1994: 232-4). The details of the size, designs, condition and context of those shields are not provided. In the gallery, besides the three shields, greenstone beads, shells, ceramic plates, two wooden square tablets decorated with turquoise mosaics (see 1.4 of this Appendix), and two vessels in the form of the bat deity were found (González Licón 1994).

1.3.4-11 Eight wooden disks, a cave in Acatlan, Puebla (NMAI)

Photos of 1.3.4-10: Saville (1922: plates XXIII-XXIX).

From the same cave in which the eight turquoise masks were found, eight disks covered with turquoise mosaics were also recovered. Because of lack of contextual information, it is not clear if the disks were used as offerings to the dead elite together with the masks, or for the rituals other than burials.

The solar symbolism can be observed on the designs of these eight shields. Seven of them are apparently in damaged conditions, and five retain only half of

the disk. The design of each disk varies a little, but basically it consists of three to six rings of mosaics radiating from the centre. At least three disks have motifs of solar rays, which can be compared with the iconographic representation of the sun depicted in Postclassic Central Mexican codices and on sculptures, such as the Aztec Calendar Stone (Figure 7.19). For these seven disks, different shades of a soft light-gray stone was employed in the outer zones, whereas darker stones interspersed with turquoise of varying shades, some almost white; bits of lignite and obsidian were also used (Saville 1922: 77). More turquoise applied for the inner circles might represent the intensity of the heat of the sun at the centre. This concept can be observed in many iconographic representations of the sun depicted in the codices having the central part painted red and blue (e.g. Codex Telleriano-Remensis: fols. 40v, 42r, 42v, 44r). The eighth shield displays a complicated design in style similar to the two disks kept in the European museums (1.3.12 & 13) and the wooden tablets of Cheve (1.4).

1.3.4 Disk-1 Size: D. 38.1 cm (15 in), mosaic portion 26 cm (10.25 in).

Information based on Saville (1922: 78).



This disk is in two fragments, a portion of one edge being missing. It appears to be a sun shield, judging by the eight pointers which radiate from the band surrounding the circular design in the centre. In the centre the darker mosaics are obsidian.

1.3.5 Disk-2 Size: D. 38.1 cm (15 in). Information based on Saville (1922: 78).



It is also in two sections, and a larger section of the side is missing. This likewise is probably a sun shield, but it has no pointers. In the centre the black mosaics are lignite.

1.3.6 Disk-3 Size: D. 38.7 cm (15.25 in), thickness 2.5 cm (1 in).



Information based on Saville (1922: 78).

It consists of a half section only. It is a sun shield, and had four pointers identical with those on the Aztec Calendar Stone. The central disk, with the white lines made of very tiny mosaics, is similar to the central part of the Disk-1 (1.3.4).

1.3.7 Disk-4 Size: D. 37.8 cm (14.88 in). Information based on Saville (1922: 78-9).



It shows four pointers, which suggest a sun disk, but the symbol seems to be a conventional cross-section of a conch-shell, a symbol of Ehecatl-Quetzalcoatl, god of the wind. In this example, the light pieces of stone are larger than in any other piece, but they are cut exceedingly thin. Around the

outer edge of the mosaic is a faint incised line, and three lines can be seen projecting from the pointers.

1.3.8-9 Disk-5 & 6 Size: D. 38.1 cm (15 in). Information based on Saville (1922: 77, 79).



Disk-5

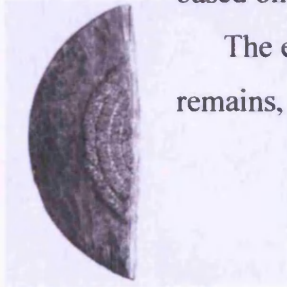


Disk-6

Disk-5 and 6 are similar in workmanship. In the outer band observed the irregular inner edges of the two lines of stones which form the border. In the Disk-5 the space is filled in with a sprinkling of gritty, almost sand-like, bits of faded whitish-blue bastard turquoise. It appears to have been spattered or

sprinkled on while the matrix was very soft. In the case of Disk-6, the material is somewhat coarser, and consists of rough bits of the same stone used in the broad light band within the outer border.

1.3.10 Disk-7 Size: D. 38.1 cm (15 in), H. 37.1 cm (14.63 in). Information based on Saville (1922: 79).



The encircling bands are found, but as no part of the centre remains, and so if there was a figure is unclear.

1.3.11 Disk-8 Size: D. 32 cm. Information based on Saville (1922: 72, 75).



Drawing of the shield:

Pasztory (1983: 277).

The wood is probably cedar. The mosaic incrustation has been set in a bed of gum, with alternating

of shading in light or dark bluish-green. It is estimated that nearly 14,000 individual pieces enter into the composition of this mosaic. The twenty-eight small holes around the edge of the shield were probably for the insertion of feathers or other ornaments. The incrustation is in a bed of gum that has been spread over the wood, which is common to the two shields kept in the European museum collections (1.3.12 & 13).

The design describes a mythological scene set in a solar representation with eight rays. At the top of the scene there is a horizontal sky band with a solar disk in the middle. From the solar disk a personage is falling down to a curved hill below, and two warrior figures flank the hill. It is widely accepted that the glyph of the curved hill represents Huey Colhuacan, one of the origin places of the Nahua people of Central Mexico, and that the scene is interpreted as the myth of dynastic origin from the Nahua point of view (Saville 1922: 71-4; Pasztory 1983: 277). This legend is pictured in *Tira de la Peregrinación Mexica* (1944) and Tezozómoc (1992: 18-9).

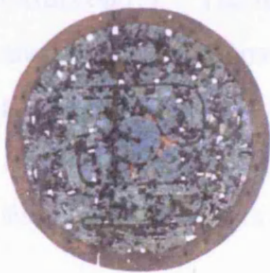
1.3.12 Wooden disk (SMNH)



Size: D. 42 cm. Postclassic.
Photo & drawing: Feest (1990: 2, 25).

The greater part of the mosaic has fallen out, but the impression of design can be traced in the gum matrix. At the top a horizontal sky band with a solar disk in the centre is depicted. There is a warrior figure standing inside the sun, and another figure is falling from the sun to the circular cave in the form of womb below. Although Feest (1990: 24) says the circle below is the moon, I think it is a cave because of its expression similar to Chicomoztoc, the womb-like cave from which the Nahuas originated, as described in the codices (e.g. Kirchhoff, et al. 1989: fol. 16r). The cave is emerging from the opened jaw of the earth monster at the bottom, and a personage is inside the cave. Between the sky band and the earth, twenty-one warriors are depicted. The composition of the sun, a descending man, the mythological place of origin (mountain or cave) and warriors is exactly the same as the Acatlan design (cf. Saville 1922: 71; Feest 1990: 24-5).

1.3.13 Wooden disk (BM)



Size: D. 31 cm. Aztec, Late Postclassic (1300-1521).
Photo & drawing: McEwan (1994: 76).

This disk shows a 1.9 cm (0.75 in) band of bare wood around the edge which contains twenty-four regularly spaced holes, which presumably were used for affixing feathers. (Carmichael 1970: 35). It bears a design with composition similar to the last specimen (1.3.12). At the centre a solar disk with four rays is depicted. The solar disk is inside a temple, around which a great serpent is coiling up. The composition of this temple is similar to the temple of the solar deity depicted in the Codex Borgia (pl. 34). The temple is

flanked by four warriors. Behind the temple there is a tree whose two branches spread horizontally at the top, and from the top centre of the tree a figure emerges. This tree may represent a Mixtec mythological place of origin. Therefore, this disk also displays the concept of origin and a solar cult in relation to warfare. The provenance and context of both the Vienna and London disks are unknown, but they may have had a function similar to the Acatlan shield.

1.3.14-19 Six wooden disks, Santa Ana Teloxtoc cave, Puebla



1.3.15

1.3.14

Only two figures. Photos of 1.3.14: Vargas P., et al. (1989: 190); 1.3.15 (1989: 117).

From the same gallery of the cave, in which the two masks with turquoise mosaics were

found, fragmental remains of ten wooden shields, six of which show traces of turquoise mosaics, were recovered (Vargas P., et al. 1989: 115-9). Two of them clearly show designs illustrated with turquoise mosaics. Both of the designs are composed of some four rings and other motifs, but it is difficult to identify because most of the mosaics have been lost (Vargas P., et al. 1989: 115-7). The disk 1.3.15 shows partial design of interlaced lines, possibly representing serpent (Xiuhcoatl?). The disordered condition of the objects makes it difficult to analyze the functions of these disks. Considering the similarities in style and form of the masks to those found in other caves of the same region such as Acatlan and Tehuacán, it is possible that the designs also represent solar motifs similar to other disks found in these caves.

1.3.20-24 Five wooden disks, a cave in Tehuacán, Puebla (EM)

The materials of the mosaic stone have not been analyzed, but I suggest that at least some of the mosaics are of turquoise. According to Dr. M. Fischer of the museum (personal communication), they were found in a cave in Tehuacán, Puebla, together with the half mask and four smaller mosaic objects and ornaments (1.1.18, 1.8.1-3, 1.9.3). They were brought to the museum by the

1.3.26 Gold Disk, Zacula, Oaxaca (MAH)



1.3.20



1.3.21



1.3.22



1.3.23



1.3.24

Belgian art seller, Emile Deletaille, in 1971. Most of the mosaics of the shields are fallen off, but all of them show the similar pattern of the rings and rays of the sun. Four of them (1.3.20-23) display a motif of asterisk (*) at the centre and four petal-like radiations, all of which may

represent solar rays. The other shield (1.3.24) shows the pattern of rings similar to the Acatlan shields.

1.3.25 Wooden disk, a cave in Tehuacán (RMAH)

Size: D. 45.5 cm. Mixtec, Postclassic (c. 1250-1521).

Photo: Royal Academy of Arts (2002: 474).



This is a wooden disk with turquoise and shell mosaics.

This is one of almost two hundred objects found in two caves in the Tehuacán region (Royal Academy of Arts 2002: 474-5). The objects from the caves include other

incomplete shields, which are undecorated or have lost

their decoration, a human mask, wooden armatures covered in *amatl* (native plant) paper and offerings of maize and bundles of vegetables (Royal Academy of Arts 2002). It is probable that the mosaic objects kept in Berlin (1.3.20-24) are part of the group of objects recovered from these caves. The shield consists of five rings of turquoise mosaics. The central circle bears the darker blue mosaics, which may represent the intensity of heat as in the case of the other shields of Acatlan.

1.3.26 Gold Disk, Zaachila, Oaxaca (MNA)



Size: D. 24 cm. Mixtec, Postclassic.

A gold disk with turquoise mosaics was found in the Mixtec tomb of Zaachila. The Zaachila tombs were reused by the Postclassic Mixtecs, and this gold disk was one of the rich grave goods offered to their buried elite (A. Miller 1995: 156-9). The backing material of the disk is unknown, but the surface is covered with gold leaf, and the circle at the centre and the two outer thin rings are filled with turquoise mosaics. Gold was regarded as one of the precious materials, and in the Mixtec elite tombs and burials, especially the Tomb 7 of Monte Albán and the Tomb 1 of Zaachila, many gold ornaments, such as, pectorals, rings earplugs, diadems, beads, pendants, were buried. In the Central Mexican religious thought, gold, as well as turquoise, was recognized to be a product of the sun, and the solar deities were often associated with it (Miller & Taube 1993: 90; Hosler 2001: 457). Therefore, the gold disk with turquoise mosaics may have meant not only a precious offering but also a symbol of the sun. It should be noted that turquoise mosaics at the centre of the disk infers the idea of the intensity of the heat as observed in other disks.

1.3.27 Back shield, from the offering in the Burned Palace, Tula (INAH)

Size: D. 24 cm. Toltec, Early Postclassic (900-1000). Information based on Cobean & Mastache (1995: 180). No figure.

This is a circular disk of wood covered with turquoise, and shell mosaic. The number of turquoise mosaics is counted at 3000. It has a quatrefoil design with serpents, which is very similar to the design of the shields worn by the atlantean warrior columns standing at the top of the Mound B at Tula, and also four back shields found in Chichén Itzá (1.3.28-31). Together with this shield, a breastplate of red-shell beads was found. As well as the shield, the breastplate is identical to that of the atlanteans, and these two offerings are considered to have been the ornaments of the governors of Tula, who were represented by the atlanteans.

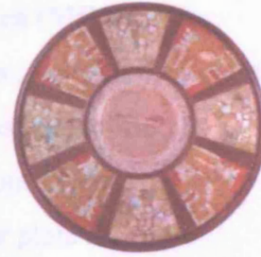
1.3.28-31 Four back shields, Chichén Itzá, Yucatán (MNA)



1.3.28



1.3.29



1.3.30

Size: D. 22-24 cm. Maya, Postclassic (1000-1250). Only three figures.

Photos of 1.3.28-9: *Arqueología Mexicana* (1998: 71); 1.3.30: Solís (1998: 142).

Information based on Toscano (1952: 492-4), Sharer (1994: 716-9), Cobean & Mastache (1995: 178, 180).

The first disk (1.3.28) was found cached in a covered limestone vessel beneath the floor of the Temple of the Chacmool, which was later incorporated into the platform of the Temple of the Warriors. Three similar disks were later found in the buried temple under El Castillo, two of which were in the same box with the carved jadeite (1.3.29-30), and the last one was on the seat of the Red Jaguar Throne. All of the disks have a quatrefoil design of four animal figures surrounding a circular disk at the centre. The mosaics are of turquoise, red shell and lignite. These animals are identified as Fire Serpents. This design is identical to the Toltec back shield, which was a symbol of the warriors of high rank.

1.4 Decorated Wooden Tablets

1.4.1-2 Two wooden tablets with codex type representations, Cheve cave,



1.4.1



1.4.2

Oaxaca (MRO)

Mixtec, possibly Postclassic.

Photos: Nicholson &

Quiñones Keber (1994:

colour plate D).

From the same cave in which a turquoise mosaic mask and three wooden disks with turquoise were found, two wooden tablets were recovered. These

tablets were found in a niche made of big stones. Both are broken in half and a good part of the mosaics have fallen off, but it can be still observed that the mosaics form a codex type representation. Both display war-related scenes. One of them (1.4.1) displays a scene of war, about fifteen human figures, warriors, slaves, some with the bird headdresses, and prisoners surrounding a solar element in the centre. There are also illustrated a temple and a ball game court. In addition it depicts a few calendric signs, which suggest that it possibly represents scenes of particular battles or incidents. The other tablet (1.4.2) represents a solar disk or shield pierced by four or five arrows, which is in style similar to the symbol of war and victory depicted in the codices. For example, in the scenes of the Mexica conquest of other towns described in the Codex Mendoza (fol. 3v-16v), a shield with crossing four arrows often appears with the image of the Mexica ruler (see also 1.11.6). Since the sophisticated style and technique of these illustrations seem similar to the Mixteca-Puebla painted manuscripts, it is highly possible that these tablets belong to Postclassic Mixtec culture (cf. González Licón 1994: 233).

1.5 Knife handles

1.5.1 Handle with flint (BM)



Size: L. 30.5 cm. Mixtec-Aztec, Late Postclassic (1350-1521).

This handle is carved in wood and covered with a mosaic of turquoise, malachite, white, pink, purple and orange

shell and a few pieces of pearl shell. It represents a crouching figure of a man wearing an eagle headdress the wings of which extend over his shoulders. The blade is held in a socket clutched to the chest of the crouching figure (Carmichael 1970: 35). The human figure of the handle represents an eagle warrior, a title which was offered to a brave warrior who provided a number of victims to be sacrificed to the sun. Sahagún (1953-81: Bk 7, 1) states that the sun was regarded as 'the soaring eagle, the turquoise prince, the god'. Therefore, this handle perfectly represents the solar cult, and its use in ritual of human sacrifice offered to the sun is highly possible.

1.5.2 Knife handle (PEM)



Size: 9 x 13 cm. Mixtec-Aztec, Late Postclassic (1350-1521). Photo: Biscione, et al. (1993: 28).

It is a wooden handle, whose knife has been lost, representing a crouching human figure wearing a long manta or cotton cloak. The materials are turquoise, dark-green malachite, white shell, mother-of-pearl, and red shell. The identity of the human figure is unclear, but it is thought to represent a priest engaged in sacrificial rites (Royal Academy of Arts 2002: 474). According to Toscano (1952: 489), it is almost sure that this specimen and the next one were sent by Grijalva to Europe, as in his inventory various knives obtained in Tabasco were listed.

1.5.3 Knife handle (PEM)

Size: L. 12.5 cm. Mixtec-Aztec, Late Postclassic (1350-1521). Photo:

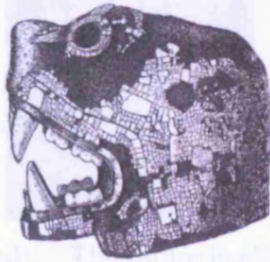
Biscione, et al. (1993: 28).



This is also a handle, whose knife has been missing, representing a crouching animal, which has been interpreted as a fire serpent due to its back turning snout (Biscione, et al. 1993: 28; Toscano 1952: 489). The materials used for the incrustation are turquoise, reddish shell, dull white shell, mother-of-pearl, and small flakes of gold (cf. Saville 1922: 84).

1.6 Deity/Animal Figures

1.6.1 Jaguar head (EM)



Size: H. 14.6 cm (5.75 in). Postclassic. Photo: Saville (1922: pl. XXXII A).

It is of wood covered with mosaic of turquoise, malachite and shell (Saville 1922: 80). This piece has been lost in World War II (personal communication with Dr. M. Fischer), and no contextual information is provided.

1.6.2 Two headed jaguar figure (EM)



Size: L. 32.1cm (12.63 in). Postclassic. Photo: Saville (1922: pl. XXXIV A).

This wooden piece is covered with bits of turquoise and malachite, together with some obsidian, shell, and mother-of-pearl, and the eyes are of malachite (Saville 1922: 81). This has been also lost in World War II, and no contextual information is provided.

1.6.3 Animal head (SNHM)

Size: L. 9.7, W. 8.5, H. 5.2. Postclassic.

It is a wooden object and much of the mosaic has fallen off. The pieces of



jadeite, obsidian, and shell are larger and the work is generally coarser than in any of the other examples in Europe (Saville 1922: 80). Feest (1990: 28) states: 'this animal represents a predator, but conclusive evidence for its being either a canine or feline has not been presented'.

However, I think it can be a jaguar because the large part of its mosaic is of obsidian, which is a symbol of Tezcatlipoca, who has a strong association with a jaguar (cf. Heyden 1988: 221-2). Toscano (1952: 490) also says that it is a head of a feline, associated with rituals related to Tezcatlipoca.

Ritual (Royal Academy of Arts 2002: 474)

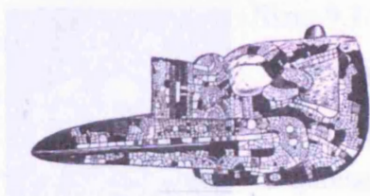
1.6.4 Seated animal with receptacle on its back (BM)



Size: H. 18 cm. Mixtec-Aztec, Late Postclassic (1350-1521).

This is a seated figure of a jaguar with a cup-like receptacle on its back (Carmichael 1970: 29). The mosaic covering is mostly turquoise with some pink shell, malachite and iron pyrites. The cup shows some traces of gilt. The figure itself is carved from pale brown wood. It could perhaps have been used as a small offering vessel or a ceremonial mortar; the depression is scarcely deep enough to have been used for a cup (Carmichael 1970).

1.6.5 Bird head (Museum, Gotha in Germany)



Postclassic. Photo: Saville (1922: pl. XXXIV B).

It is a wooden piece covered with mosaic of turquoise, malachite, obsidian, mother-of-pearl, red coral, and white shell (Saville 1922: 81). It possibly represents the god of wind, Ehecatl-Quetzalcoatl because of the shape of the beak (Toscano 1952: 490).

1.6.6 Human head with headdress (NMD)

Size: 29 x 12 x 17 cm. Mixtec-Aztec, Late Postclassic (c. 1500). Photo: Royal Academy of Arts (2002: 329).



It is considerably damaged, much of the mosaic incrustation having disappeared. The upper projecting part rising from the top of the head probably simulated a plumed headdress. This piece is covered with mosaic of turquoise, malachite, shell and mother-of-pearl (Saville 1922: 80). It possibly served as a ceremonial cup (cf. Toscano 1952: 488). Its goggle-like eyes and fangs (actually one of which is

missing) infer that its identity is Tlaloc, but it is also possible to think from its protruding mouth and a tall feathered headdress that it represents Ehecatl (Royal Academy of Arts 2002: 474).

1.6.7 Serpent head with human face in open jaw (NMD)



Size: Extreme L. 34.3 cm (13.5 in), H. 21 cm (8.25 in).
Postclassic.

It is of wood covered with mosaic of turquoise, malachite, reddish shell, but much of the incrustation has fallen off (Toscano 1952: 490; Saville 1922: 80). This figure is a serpent's head from whose open jaws a human face emerges. From the association with turquoise serpent or Xiuhtcoatl, the identity of the human face can be Xiuhtecuhtli or Huitzilopochtli.

1.6.8 Figurine of deity (SNHM)



Size: 9.1 x 7.1 cm. Mixtec-Aztec, Postclassic or Colonial.

It is a small figurine with two horns, and small head projecting from abdomen. It is of wood inlaid with shell, turquoise tesserae, carved jet, and silver nails. The eyes and the six small teeth consist of milk-white shells; the two hook-like canines consist of white mother-of-pearl-like shells. The two large ear lobes, as well as the inferior part of the nasal septum, are perforated transversely. The little human head at the navel of the figure probably consists of pitch-black obsidian. The ear-pendants are missing on the left side. The pupils of the eye (right one missing) are enclosed in small rings of mother-of-pearl. This

figure has been identified as Xolotl, the twin deity of Quetzalcoatl often depicted in the form of a dog (Saville 1922: 82; Feest 1990: 28-32).

1.6.9 Animal head (BM)



Size: L. 10 cm. Mixtec-Aztec, Postclassic. Photo: Pasztory (1983: 266).

It is an animal head carved in yellowish wood and encrusted with mosaic of turquoise and malachite, with eyes of iron pyrites set in shell. The eyebrows are formed of seed pearls; the inside of the mouth is covered by a mosaic of garnet sections, and shows some traces of thin gold foil beneath the stones. The shell loop at the top indicates that it was to be worn as a pendant. The open mouth contains seven shark or fish teeth. This piece has been identified as monkey, but from some angles it looks like a fish head, and its fish teeth supports this identification (Carmichael 1970: 35-6). A rim of gum on the inner side of the head could have held a flat mosaic mirror, and the object would then have been a small looking glass to be worn around the neck (Carmichael 1970: 28-9).

1.6.10 Stone statue of Coatlicue, Coxcatlan, District of Tehuacán, Puebla

(MNA)



Size: 115 x 40 x 35 cm. Aztec, Late Postclassic (c. 1500). Photo: Antiguo Colegio de San Ildefonso (1995: 84).

This stone statue represents the earth goddess Coatlicue, 'She of the serpent skirt' or the mother of Huitzilopochtli. The statue has a discarnate face and a body with flesh and wears a skirt of intertwined snakes. She raises the hands to the level of the breast, which is the typical pose of Cihuateteo or 'the spirit of the women died in labor'. This figure displays circular ear-ornaments of turquoise, and disks of turquoise mosaic in each cheek. Normally earth deities are not associated with turquoise ornaments, but it is possible that in this case, the aspect of sacrifice is accentuated by

turquoise (see Chapter 8 for the symbolism of turquoise mosaics). The teeth are made of white shell; the inner part of the mouth is of red shell; the nose is inlaid with white shell. There are traces of incrustation around the eyes, but this mosaic feature is practically destroyed. In the breast is set a circular mirror of iron pyrites. Around the upper part of the forehead are small holes which probably at one time contained stone or shell inlays (Saville 1922: 49). This statue was found in a set with another stone statue of Xiuhtecuhtli, which carries a symbol of solar ray or the tail of Xiuhcoatl on its back (cf. Royal Academy of Arts 2002: 463) (cf. Figure 7.11).

1.6.11 Jet Worm, Guerrero (NMAI)



Size: L. 5.2 cm (2.06 in), W. 5.5 cm (1.38 in), thickness 1.1 cm (0.25 in).

It is of jet with the eyes inlaid with turquoise.

Its detailed information about the context and date is not provided. However, the eyes of turquoise are noteworthy, because, generally speaking, in Mesoamerican cultures normally turquoise mosaics or beads comprise ornamental part of the figures but never represent parts of the body as in the case of this specimen. The similar application of turquoise for the eyes can be often observed in the Southwestern cultures, such as the Zuñi fetish of Blue Coyote of the West made of white limestone with large turquoise eyes (Karasik 1993: 115) (cf. Figure 8.6d). Thus, this jet worm may be an example of the Southwestern cultural influence on Mesoamerican cultures, especially on West Mexican cultures.

1.7 Pectoral

1.7.1 Serpent pectoral (BM)



Size: H. 20.5, W. 43.3 cm. Mixtec-Aztec, Late Postclassic (1400-1521). Photo: McEwan (1994: 80).

It is a pendent ornament in the form of a

double-headed serpent, the outer surface of which is covered with a mosaic of turquoise, slightly larger and more irregular pieces forming a line along the centre. It is carved out of wood which is hollowed out at the back along the coils of the body so that it is U-shaped in section. The heads are also entirely covered with mosaic, mostly of turquoise but with some features, the gums, nostrils and a band across the nose, picked out in red shell. The teeth are of white shell. There are holes at the tops of the two loops for suspension (Carmichael 1970: 36). It is believed to have been worn as a pectoral by a priest or noble on ceremonial occasions (Royal Academy of Arts 2002: 473). As the turquoise serpent is called Xiuhcoatl in Nahuatl, this pectoral might have been used in a ritual related to Huitzilopochtli or Xiuhtecuhtli (cf. Royal Academy of Arts 2002).

1.7.2 Jaguar pectoral (SLAM)



Size: 7.6 x 17.1 x 3.2 cm. Mixtec, Postclassic (c. 1500). Photo: Royal Academy of Arts (2002: 305).

This is a pectoral of wood in the form of a jaguar, covered with mosaics of stone, shell and turquoise. In Mesoamerican cosmology jaguars represented a double duality as creatures of the underworld and death as well as creatures representing the sun during the night, while the eagles represent the sun of the daytime (Royal Academy of Arts 2002: 476). It is slightly curved so as to fit comfortably on the chest of the wearer (Royal Academy of Arts 2002). This pectoral was probably worn by a jaguar warrior, another aristocratic warrior category along with the eagle warriors (see 1.5.1 for an example of the eagle warriors).

1.7.3 Mixtec pectoral (MA)



This is a small (miniature) pectoral, possibly of wood, covered with turquoise mosaics. The details of the provenance and context are not provided. However, its form in a stylized butterfly, with three projections on each side, is a typical form of the pectorals attached to the Toltec warriors (cf.

Figure 7.41a). Thus, this pectoral may be a material example of the Mixtec association of themselves with the Toltec heritage (cf. Dahlgren 1990: 61-9).

1.7.4 Butterfly pectoral, Chichén Itzá (MNA) <No figure>

Toscano (1952: 492) informs us that a plaque with turquoise mosaic in the form of a stylized butterfly, in the Toltec style, was recovered from a building in Chichén Itzá. Based on the information concerning the Toltec style, it can be suggested that this pectoral may be in the form similar to the specimen mentioned above (1.7.3).

1.7.5 Pectoral, San Gregorio, Michoacan (MNA)



Size: L. 5 cm, W. 10 cm. West Mexico, Classic (?).

This is a pectoral of shell in the form of a bird, covered with turquoise mosaics. It shows two circular perforations and four in the form of a T. Nárez (1996: 223) dates this specimen as a Classic object, but since turquoise became popular in Postclassic, it is highly possible that it was found in a Postclassic context. It can be observed that the manufacturing technique is less developed comparing with the Mixtec specimens, as the mosaics are coarser and the shade of colours do not seem paid much attention.

1.7.6 Circular pectoral, Alta Vista, Zacatecas

Size: D. 7 cm, thickness 0.9 cm. No figure.

Saville (1922: 53) tells us that in 1908, Manuel Gamio excavated the site of Alta vista, and found two mosaic objects in a small circular compartment in the concrete floor of the large chamber called the Hall of the Columns. One of these was a disk of yellow pottery encircled by a ring of wood. The wooden ring bore traces of a coating of resin and many tiny fragments of turquoise, beryl and steatite, which possibly once formed a mosaic incrustation. From the fact that this disk contained perforations possibly for suspension, this object is supposed to have been a breast ornament (Saville 1922: 53). For the other mosaic object from Alta Vista, see 1.10.4.

1.8 Small Disks

1.8.1-3 Small disks, Cave, Tehuacán (EM)



1.8.1

1.8.2

1.8.3

These small disks were reportedly recovered together with the five mosaic shields from a cave in Tehuacán region (personal communication with Dr. M. Fischer) (cf. 1.3.20-24).

Although their material analysis has not yet been carried out, some mosaics of possibly turquoise can be observed in these objects. Some motifs can be interpreted as solar-related symbols: on the object 1.8.1, four rays-like mosaic motifs seem radiating from the centre; on the 1.8.3, regularly placed mosaics form some six ring-motifs.

1.8.4 Small disk with a hole, Mixtec (MNA)



This is a small disk with a perforation in the centre, covered with mosaics of turquoise and possibly red shell. It displays a design similar to the Chichén shields, such as a rim with regular notches, and eight divisions marked by red ray-like motifs (cf. 1.3.28-30).

It is possible that this design was taken by the Mixtec craftsmen as a Toltec heritage. It might have been used as a pendant with a suspension.

1.8.5 Small disk, Mixtec (MNA)



This is another small disk with solar motifs. At least part of the mosaics include turquoise, and the mosaics form rings and radiating rays, similar to the Chichén Shields and other Mixtec disks such as 1.3.11, and small disks such as 1.8.1 and 1.8.4.

1.8.6 Small disk, Mixtec (Bliss)



Size: D. 12 cm. Mixteca-Puebla, Postclassic.

Photo: Dumbarton Oaks (1963: pl. 453).

This is a small pendant disk of wood with mosaics of turquoise and shell (Dumbarton Oaks 1963: pl. 453). It shows three solar rays surrounding a central ring, in which a human figure is depicted. The artistic style is similar to the so-called codex style or Mixteca-Puebla style, which can be observed on the disks 1.3.11-13 and on the mosaic tablets 1.4.1-2. Thus, it may represent a mythological scene related to the solar cult or the origin myth, as in the case of the other Mixtec shields (1.3.11-13).

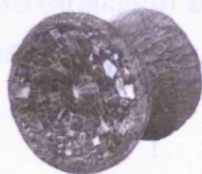
1.8.7 Small disk, Tarascan (MNA)



This is a small disk with turquoise mosaics. This can be compared with the Mixtec disks mentioned above, in terms of its manufacturing technique, namely coarser mosaics without any motifs.

1.9 Ear Ornaments

1.9.1 Wooden earplug, a cave in Acatlan, Puebla (NMAI)



Size: H. 3.8 cm (1.5 in), D. 4.4 cm (1.75 in). Photo: Saville (1922: pl. XXX).

Saville (1922: 79) informs us that together with the eight turquoise mosaic masks and shields, one wooden earplug was recovered from the cave in Acatlan. It is spool-shaped, the bottom flat, the upper part concave and covered with a mosaic of dark-green turquoise, with a central disk of dark rose-colored shell. The sides of the spool show the small gouges of the cutting instrument with which it was fashioned, and the entire surface not covered with mosaic was painted rose-red. As the ear lobes are part

of the body from which the Mexica offered blood to the solar-war deities in autosacrifice, and also the turquoise ear ornaments were worn by the Mexica warriors, turquoise ear ornaments are supposed to have been related to the solar cult (Sahagún 1953-81: Bk 2, 35, 164, 204; cf. Bk 1, 30; Bk 8, 43; Bk 10, 177). Thus, the round shape and turquoise mosaics of this specimen probably represent the sun.

1.9.2 Earplug, Ejutla cave, Oaxaca <No figure>

Moser (2003: 270) reports that in the Ejutla cave part of a wooden ear spool covered with turquoise mosaics was recovered together with the turquoise masks mentioned before (1.1.4-5). As it is described as a 'spool', it is highly possible that this ear ornament resembles to the Acatlan specimen (1.9.1).

1.9.3 Ear ornament (?), Tehuacán (EM)



This object was found together with a mask, five shields and three small disks in a cave in Tehuacán (cf. 1.1.18, 1.3.20-24, 1.8.1-3) (personal communication with Dr. M. Fischer). It looks very similar to the trapeze-and-ray ear ornaments of Coyolxauhqui (cf. Figure 7.15). Therefore, this ear ornament in the form of the tail of the Fire Serpent implies that rituals related to the solar cult were performed in this cave.

1.9.4-5 Two ear ornaments, Tomb 7, Monte Albán <No figure>

Two earplugs of shell with turquoise mosaics were found in the Tomb 7 (Caso 1969: 250). The detailed contextual information and description are not provided.

1.9.6-7 Two ear ornaments, Tomb, Huitzo <No figure>

In Tomb 1 of Huitzo, a richly decorated warrior of high rank was interred (Flannery 2003b: 318-22; A. Miller 1995: 163). These two turquoise earplugs are supposed to have been put on the principal skeleton, although only the remains of turquoise mosaics were found at the level of the ears of the dead (Flannery

2003b: 319). It seems possible that in Postclassic Zapotec-Mixtec region, ear ornaments were also associated with warriors as in the case of the Mexica.

1.9.8 Earplug (AMNH)



Size: D. 3.5 cm (1.38 in). Probably from Puebla. Photo (drawing): AMNH.

This is a spool-shaped earplug of wood with turquoise inlays. It retains only the half but the original form is supposed to have been a spool-shaped like the one from Acatlan (1.9.1). Its round shape with turquoise mosaics may represent the sun, as in the case of the Acatlan specimen.

1.9.9-10 Two Earplugs, Uaxactún, Guatemala (MAG) <No figure>

These earplugs show motifs of the sun 'in the Maya style' (Toscano 1952: 489). The city of Uaxactún thrived mainly during the Classic period, contemporary with Teotihuacan in the Central Mexico (Tate 2001: 287-9). However, based on the facts that turquoise was not popular in Maya cultures in general and that most of turquoise objects were produced during Postclassic, these earplugs were also Postclassic objects. Since the figure is not provided, it is difficult to picture the objects, but it infers that the Maya and the Central Mexicans shared a similar concept related to the solar cult at that time.

1.9.11-12 Two Ear flairs, Santa Rita, Corozal, Belize (MB)



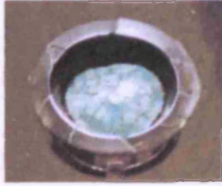
Size: H. 6.2, W. 3.5, L. 4.5 cm. Late Postclassic (1250-1500). Photo: Musa & Morris (n.d.: 20).

n.d.: 20).

These ear flares of gold and turquoise were found in a burial of Santa Rita. Finely worked gold bells dangle from each ear flare (Musa & Morris,

1.9.13 Earplug, Tzintzuntzan, Michoacan (MNA)

Size: 2.7 x 7.5 cm. Tarascan, Postclassic (1300-1521). Photo: Solís (1998: 206).



This earplug of obsidian with turquoise mosaics is said to have been found in the Tarascan capital of Tzintzuntzan, Michoacan (Solís 1998: 206). In Tarascan society, only the elites were allowed to wear lip plugs, earplugs, necklaces and bracelets of gold and turquoise (Michelet 1998: 55).

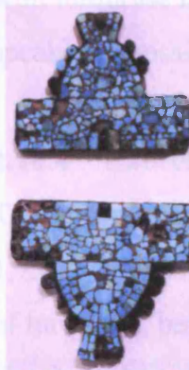
1.9.14 Earplug (MRM)



Tarascan, Postclassic (1300-1521). Photo: Michelet (1998: 55).

This is another example of earplug of obsidian with turquoise mosaic. This was also possibly worn by the Tarascan elite.

1.9.15-16 Ear ornaments, Jalisco



Size: H. 5.2 cm, W. 6.6 cm (top), H. 5.6 cm, W. 7.7 cm (bottom). West Mexico, Postclassic (c. 1300-1500). Photo: Danien (2002: 63).

These are wooden ear ornaments with turquoise mosaic. They can be an example of the less developed manufacturing technique in West Mexico than in Central Mexico and the Zapotec-Mixtec region, as there are gaps among tesserae, and the shades of the colour do not seem paid much attention.

1.10 Labrets

1.10.1 Labret, Mixtec (SLAM)



Size: 2.5 x 4.1 x 1.9 cm. Mixtec, Late Postclassic (c. 1500). Photo: Royal Academy of Arts (2002: 255).

This is a labret of black obsidian with turquoise inlay.

In ethnohistorical documents and in visual representations of Central Mexico, turquoise labrets are not the ornaments that were particularly described. It is supposed that this specimen was imported from West Mexico, where turquoise labret was attributed to the elite.

1.10.2-3 Two labrets (MNA)



1.10.2



1.10.3

Size: 1.6 x 2.6 cm (1.10.3). West Mexico, Postclassic. Photos of 1.10.2: Schöndube (1995: 163); 1.10.3: Michelet (1998: 54).

These are obsidian labrets with turquoise mosaic. In pictorial manuscripts the Tarascan elites are often depicted with turquoise labrets (Craine & Raindorp 1970: plates 29, 34, 44). Generally speaking, mosaics are coarser than those of Central Mexican and Mixtec objects.

1.10.4 Labret, Alta Vista, Zacatecas <No figure>

This specimen was recovered with a disk pectoral in the Hall of the Columns (see 1.7.6). The surface of the ornament had been covered with small spherical plates of turquoise, beryl, and steatite. Saville (1922: 53) explains the appearance of the object by referring to the statement given by Gamio in the following way [Gamio, M. (1910) Los monumentos arqueológicos de las inmediaciones de Chalchihuites, Zacatecas. *Anales del Museo Nacional de Arqueología, Historia y Etnología*, Vol. II: 469-92, pls. 1-8. Mexico]. It is of wood in the form of two symmetrical figures of an alligator (or caiman) united at the belly. Crowning the head are two head plumes, each having two branches. Above the point of union of the two reptiles there is a square projection with a perforation.

Since Alta Vista is a Classic site where developed the processing technique of

turquoise mosaic, this labret and the pectoral (1.7.6) may be a few of the earliest examples of Mesoamerican turquoise objects (see 2.1.59-61).

1.11 Other Mosaic Ornaments

1.11.1 Helmet (BM)



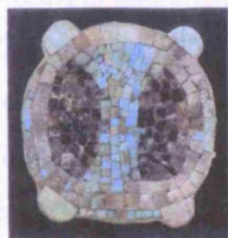
Size: Extreme H. 19 cm, D. 18.4 cm, W. 20.5 cm.

Mixtec-Aztec, Late Postclassic (1350-1521).

This is a wooden helmet with two beak-like projections once covered, except for the outer surface and the lower inside parts (which show traces of red colour), with mosaics of turquoise, malachite, pearl shell and pink shell. Many of the stones are missing but those that remain clearly define on one side the intertwining bodies of two serpents. The inside is painted green.

Helmets of wood, some gilded, some decorated with mosaic work appear in the inventories, often described as having crests of plumes, or even complete birds of feather mosaic work to ornament them (Carmichael 1970: 33). Likewise, Anonymous Conqueror (1969: 22) states that wooden helmets used in war were covered with feathers, jewels of gold and precious stones, which served for the protection of the warriors' heads. This description infers that this helmet was manufactured for such a use, because war was considered to be a ritual related to the solar cult in Mesoamerica.

1.11.2-4 Three headbands in the form of xihuitl, Templo Mayor (MNA)



1.11.2



1.11.3



1.11.4

D. 4.7 cm. Aztec, Late Postclassic (1325-1521). Photos: García Moll, et al. (1990: 177).

These are small disks set in wood bases and covered with turquoise, jade and obsidian mosaics,

found in the Santa Teresa St., near the Templo Mayor, in the present Mexico City. They are in the form of the phonetic glyph 'xihuitl', studied in Chapter 7. They are thought to be head ornaments, because they look very much alike the ornament that Quetzalcoatl and Xolotl put as headbands in the codices (cf. Codex Borbonicus: pl. 22, 26, 27, 34; Telleriano-Remensis: fol. 8v, 10r, 19v). These specimens might have been worn by the impersonators of these deities in rituals (cf. Alcina Franch 1992: 49; García Mall 1990: 177).

1.11.5 Small mask, Mixtec (MNA)



This is a small mask of wood, with mosaics of turquoise and possibly shell. Detailed information concerning context and provenance is not provided. It may have served as a pendant head, considering its small size.

1.11.6 Ornament in the form of a shield, tomb in Yanhuitlan, Oaxaca



(MNA) Museo Chichén Itzá (PM)

Size: 8 x 8.3 cm. Mixtec, Postclassic (900-1521).

It is a specimen of the combination of gold with turquoise mosaic, found in a tomb in Yanhuitlan. It is in the form of a shield, with four arrows or darts and pendent bells, a symbol of war and victory in Central Mexican visual representations (cf. 1.4.1-2). The design was an insignia of one of the four principal chiefs of the Mexica army, who governed one of the four wards, or *calpullis*, into which Tenochtitlan was divided (Saville 1922: 51-2). The zigzag design of the shield is of turquoise mosaic and other parts are covered with gold. Some shields with the similar design as tribute payments can be found in the Codex Mendoza (e.g. fols. 19r, 20r, 20v, 21v, 23r, 24v, 25r, 26r, 27r, 28r, 29r, 30r, 31r, 33r, 34).

1.12 Other Mosaic Objects

1.12.1 Bone with incrustation of turquoise, Tomb 7, Monte Albán (MRO)



Mixtec, Monte Albán V (1325-1521).

Photo: Caso (1969: lam. XXXVI).

This is a carved bone with incrustation of turquoise, recovered from Tomb 7. The practice of recording events and other things on carved bones was one of the Mixtec customs (Marcus 2003b: 283). From Tomb 7, a total of thirty-four carved bones with inscriptions or pictorial scenes were found (Marcus 2003b: 283). However, this specimen is the only one with turquoise incrustation. It can be suggested that some other carved bones also contained mosaic incrustations, but by now the mosaics have fallen off and lost. Scenes depicted on the bones often represent genealogical records, historical events, and divinations, and so their function seem to have been similar to that of painted manuscripts (Marcus 2003b: 283-5). Therefore, the carved scene on this specimen may also describes information possibly related to the buried person.

1.12.2 Diving figure scepter, Cenote, Chichén Itzá (PM)



Back view

Size: L. 39 cm, W. 8.1 cm. Middle Postclassic (1300-1450). Photo: Coggins & Shane III (1984: 113).

This is a wooden scepter recovered from the Cenote of Chichén Itzá. There are traces of red pigment around the mouth and eyes, and more than one hundred tiny jade and turquoise mosaics remain on the face. It is possible that the headdress was also once similarly incrustated. The lower end of this staff originally had the recurved tip of a dart-thrower, or *atlatl* (dart-thrower) (Coggins & Shane III 1984: 113). As on some Classic scepters in the form of a human figure, this vestigial hook refers to the origin of the Maya scepter rooted in *atlats* that were once held as a personal and national insignia by Central Mexican warriors (Coggins & Shane III 1984). This 'diving' figure scepter, with a large bow at the forehead and a rounded collar, descends holding balls that may represent copal

(Coggins & Shane III 1984: 113). Smoke from burning copal probably poured from the chamber between its bent legs, and small perforations near the rim suggest that a lid may have directed the smoke out the side slots and through the lattice at the back (Coggins & Shane III 1984). Descent from the heavens is one of the dominant symbolic themes at Chichén Itzá throughout the Postclassic period; for example, in the Mixtec and Maya manuscripts, descending figures often represent heavenly bodies, and copal-burning ones might be *buts'ek'* meaning smoking stars or comets (Coggins & Shane III 1984). The objects offered to the waters of the Cenote may have been regarded as descended from above like the copal offered by this figure (Coggins & Shane III 1984).

1.12.3 Wooden rattle with copper bell, Cenote, Chichén Itzá (PM)

Size: L. 22 cm, Rim D. 4.2 cm. Middle Postclassic (1300-1450).

Photo: Coggins & Shane III (1984: 112).



This is another object with trace of turquoise mosaic recovered from the Cenote, a rattle of wood within which is a copper bell.

Only two tesserae of turquoise of the mosaic decoration remain.

The chamber is open at the back and through the flaring top, with charring inside and at the rim, so this may have been a simple copal-burning scepter that was later converted to a rattle (Saville

1922: 57).

1.12.4-5 Two Jaguar tooth effigies, Cenote, Chichén Itzá (PM)

Size: L. 5.8 cm (1.12.4). Postclassic (900-1520).

Photos of 1.12.4: Coggins and Shane III (1984:

104); 1.12.5: Saville (1922: 57).



1.12.4



1.12.5

These objects were also recovered from the Cenote. Both are wooden objects in the form of canines covered with turquoise mosaic. It is suggested that these objects may have originally

comprised the projecting canine of a mosaic incrustated mask or figure (Saville 1922: 57; Coggins and Shane III 1984: 104).

1.13 Others

In this category mainly uncountable fragments and tesserae of turquoise, which may have originally formed mosaic designs or decorations of various objects, and other not-counted and not-specified turquoise objects are included. These fragments were found in caves and tombs in the Mixtec-Zapotec region, Alta Vista, and other sites in West Mexico. Some of the references are as follows: regarding Xoxo and Cuilapan, Saville (1922: 50-1); re. Zaachila, Bernal (1970: 361), A. Miller (1995: 156); re. Cheve and Ejutla caves, González Licón (1990: 202-3), González Licón & Márquez Morfín (1994: 232-3), re. Alta Vista, Saville (1922: 53), Weigand (1992: 58); re. West Mexico, Braniff, et al. (2001: 125-9), Pollard (2001: 280).

Caso (1969: 249-62) reports a detailed list of the material finds from Tomb 7, Monte Albán. Among them a total of ninety-four entries of turquoise objects can be found, and thirty of them are small plates (plaquitas) without original backings or forms and five fragments of turquoise. These plates and fragments show that there must have been more objects covered with turquoise mosaic.

2. Bead Objects

2.1 Bead Ornaments

2.1.1 Tenochtitlan (MNA)



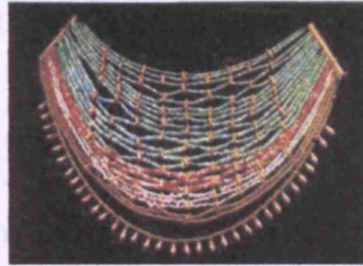
This is a turquoise bead ornament, possibly bracelet by its relatively short length, displayed with three turquoise mosaic headbands in the form of xihuitl in MNA

(1.11.2-4). This specimen is not part of the Templo Mayor offerings, and so it is included in this Appendix, same as the case of the headbands. Turquoise bracelets are often mentioned in ethnohistorical documents as one of the elite ornaments (cf. Sahagún 1953-81: Bk 8, 27-8, 55-6). Therefore, this specimen is an example of such elite ornaments and possibly was considered to contain healing power, as Sahagún (Bk 11, 189) states.

2.1.2-56 Turquoise necklaces, Tomb 7, Monte Albán (MRO)



2.1.2



2.1.3



2.1.4



2.1.5

Mixtec, Monte Albán V (1325-1521). Only four figures. Photos of 2.1.2: Caso (1969: plate XXXV); 2.1.3: (1969: LXII); 2.1.4: (1969: LX); 2.1.5 (1969: LXI).

Caso (1969: 147-9) records that a total of fifty-five bead ornaments were recovered from Tomb 7, thirty-eight of them are of beads of turquoise-only or of turquoise and jade of similar colour, and seventeen are mixed beads of turquoise, pearl, silver, and gold. As for jade beads mixed in the turquoise-only bead ornaments, it is possible that jade and turquoise were regarded as the same material in terms of colour (cf. Caso 1969: 148). These luxurious ornaments are supposed to have been offered to the dead elites buried in this tomb.

2.1.2 Necklaces of turquoise (including some jade).

2.1.3 Necklaces of turquoise, shell, pearls, and gold.

2.1.4 Necklaces of gold, jade, crystal of rock, and turquoise.

2.1.5 Necklaces of gold, jade, pearl, and turquoise.

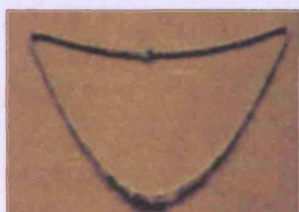
2.1.57 Necklace, Caballito Blanco, Oaxaca (MNA)



Mixtec, Postclassic. Photo: Carmona Macías (1994: 73).

This is a necklace of gold and turquoise bead. The gold pendant is in the form of a head of monkey. Details of its provenance and context are not provided.

2.1.58 Necklace, Postclassic Mixtec (MNA)



This is another example of the Mixtec turquoise bead necklaces. Its provenance and context are not provided, but it may have been part of the grave goods, as in the case of those recovered from Tomb 7

(2.1.2-56). Comparing to bead ornaments from West Mexico (e.g. 2.1.59-66), beads of this specimen are smaller and regularly shaped, a fact which may indicate the scarcity of turquoise mineral in this region as well as the highly developed skill of Postclassic Mixtec artisans.

2.1.59-61 Three Grave goods, Cerro del Huistle, Jalisco



2.1.59

2.1.60



2.1.61

West Mexico, Classic (550-850). Photo: Braniff, et al. (2001: 128-9).

These necklaces were recovered from a tomb in Cerro del Huistle in West Mexico. Turquoise mosaics and beads are reportedly a predominant element of these three grave goods (Braniff, et al. 2001: 128-9). These are a few of the early examples of turquoise objects from Classic West Mexico (see also 1.7.6 & 1.10.4). In these specimens turquoise beads are mixed with other blue-green

minerals such as amazonite. This mixed use of stones infers that the people in this region did not distinguish turquoise from other minerals of similar colour (cf. Braniff, et al. 2001: 125). Beads are almost regularly shaped but not as precisely as the Mixtec specimens (cf. 2.1.2-56, 58). Likewise, the carelessness in choosing colours of the stones can be observed.

2.1.59 Necklace with turquoise, shell, kaolinite, and amazonite beads.

2.1.60 Necklace with turquoise, shell, ceramic, and amazonite beads.

2.1.61 Necklace with more than 100 plates of amazonite and 6 triangular turquoise pendants.

2.1.62 **Necklace, Jiquilapan, Michoacan (MNA)**



Classic (600-900).

This is a necklace with three pieces of turquoise stone as pendants. The use of turquoise mineral as pendants is not common in other Mesoamerican regions, possibly because of the scarcity of the sources. This specimen shows relative richness of

turquoise in this region, already in the Classic period.

2.1.63-66 **Four Necklaces, West Mexico (Tarascan) (MNA)**



2.1.63



2.1.64



2.1.65



2.1.66

These necklaces are reportedly from the Tarascan region of Postclassic West Mexico. The Tarascan region occupied part of the route of the long distance trade to the Southwest from Central Mexico, but the Tarascans are said to have been continually engaged in offensive or defensive military actions with the Aztecs (Pollard 2001: 188). Therefore, the Tarascans had an access to turquoise and it was regarded as an elite material (Michelet 1998: 55). However, the standard of the quality of finished objects seems less sophisticated than that of the Mixtec and other Central Mexican crafts, as in the cases of these specimens.

2.1.63 This necklace is made of the combination of beads of greenstone, crystal, shell, and pendants of turquoise ore (Gómez Tagle 1991: 126). This is another example of the use of turquoise stone as pendants, which was not common in other Mesoamerican regions (cf. 2.1.62).

2.1.64 This is a necklace possibly of shell, grass stone and turquoise beads. Relatively larger pieces are used for turquoise beads, comparing to the Mixtec specimens (cf. 2.1.2-56, 58).

2.1.65 & 2.1.66 These are necklaces of turquoise beads. Comparing to the Mixtec specimens, the size of beads is larger and the shade of colours is not unified.

Appendix 3 Description and plans of the offerings of the Templo Mayor

1. Offerings on the Huitzilopochtli side and central section

1.1 Complex A: Offerings 1, 6, 60, 11, 13, 17, 20

1.2 Complex Q: Offerings 2, 77

1.3 Complex D: Offerings 3, 5

1.4 Complex E: Offering 37

1.5 Complex C: Offerings CA, 98

1.6 Isolated: Offering 99

2. Offerings on the Tlaloc side

2.1 Complex F: Offering 48

2.2 Complex B: Chamber 3

3. Offerings in the buildings within the sacred precinct

3.1 Complex H: Offering K

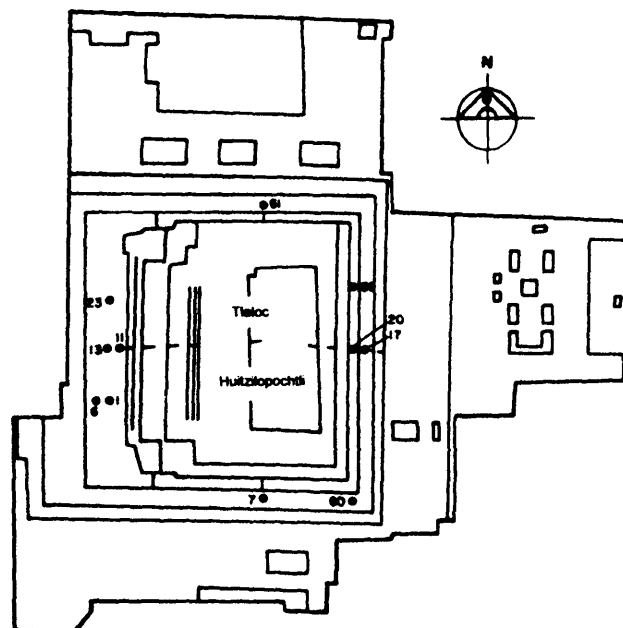
3.2 Isolated: Offering V

Notes

- 1) Data information are based on López Luján (1994: Appendix 2), otherwise indicated the sources.
- 2) Plans are based on the *planos de las ofrendas* recorded by the Museum of the Templo Mayor.
- 3) Layer levels in the plans indicate the excavation levels, corresponding to Appendix 4.
- 4) Numbers and capital letters in the plans indicate element numbers, corresponding to Appendix 4.

1. Offerings on the Huitzilopochtli side and central section

1.1 COMPLEX A



Offerings 1, 6, 7, 11, 13, 17, 20, 23, 60, 61, 88

Quantity and diversity of objects

Range of the number of elements: 49-249

Range of the number of object types: 28-40

OFFERING 1

Building: Huitzilopochtli, Templo Mayor

Building stage: IVb (1469-1481)

Container: sillares box

Primary orientation of objects: W

Number of excavation levels: 4

Number of proposed levels: not indicated

Maximum internal dimensions of the offerings (cm): N-S axis (102), E-W axis (94)

*No layer plans recorded.

OFFERING 6

Building: Huitzilopochtli, Templo Mayor

Building stage: IVb (1469-1481)

Container: sillares box

Primary orientation of objects: W

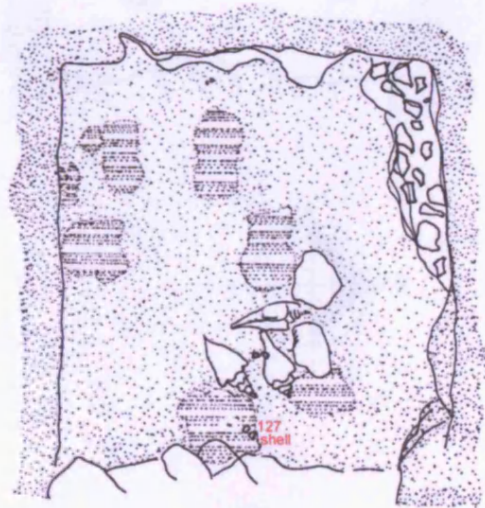
Number of excavation levels: 4

Number of proposed levels: 5

Maximum internal dimensions of the offerings (cm): N-S axis (65), E-W axis (65)

Off. 6

Level 2



Off. 6
Level 1



OFFERING 60

Building: Huitzilopochtli, Templo Mayor

Building stage: IVb (1469-1481)

Container: sillares box

Primary orientation of objects: S

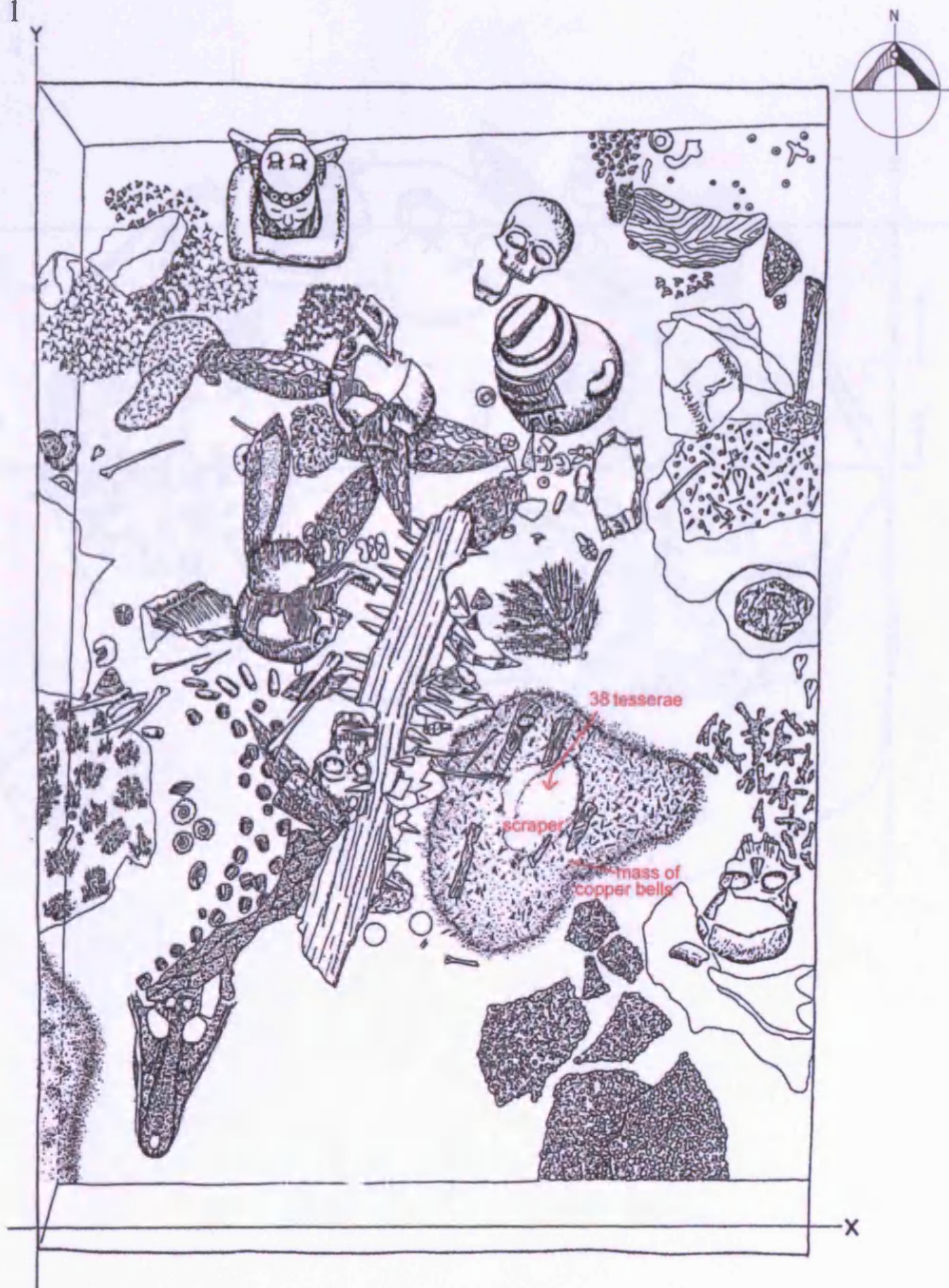
Number of excavation levels: 1

Number of proposed levels: 5

Maximum internal dimensions of the offerings (cm): N-S axis (165), E-W axis (125)

Off. 60

Level 1



OFFERING 11

Building: Central section, Templo Mayor

Building stage: IVb (1469-1481)

Container: fill below floor

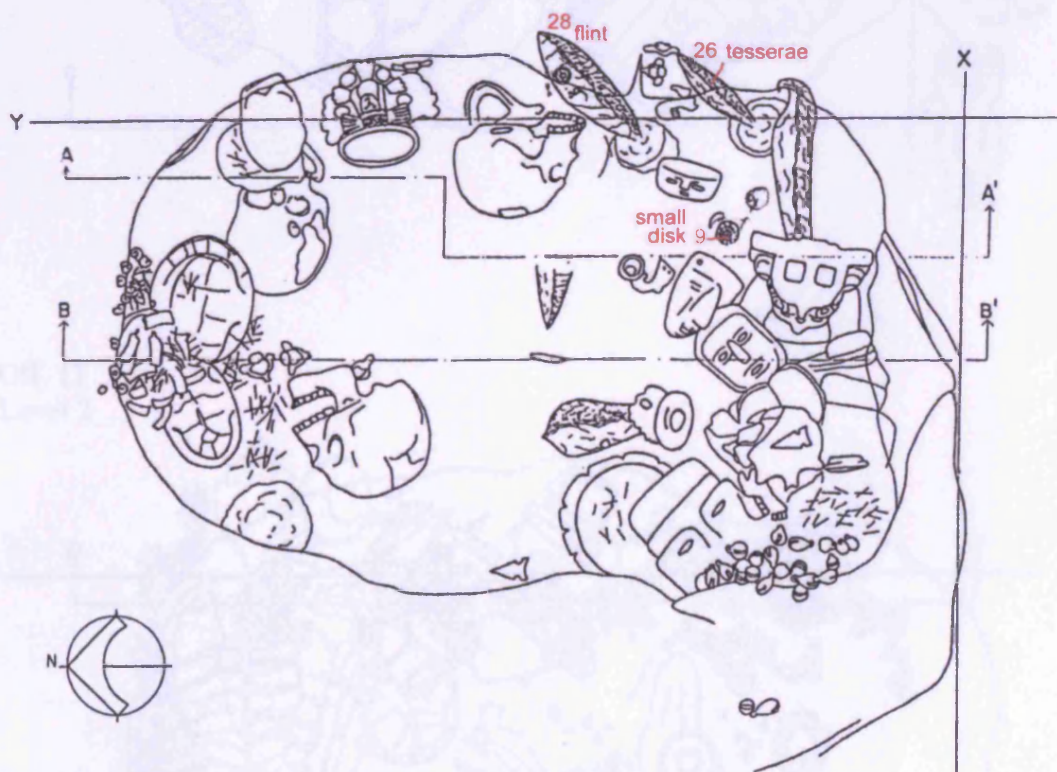
Primary orientation of objects: W

Number of excavation levels: 4

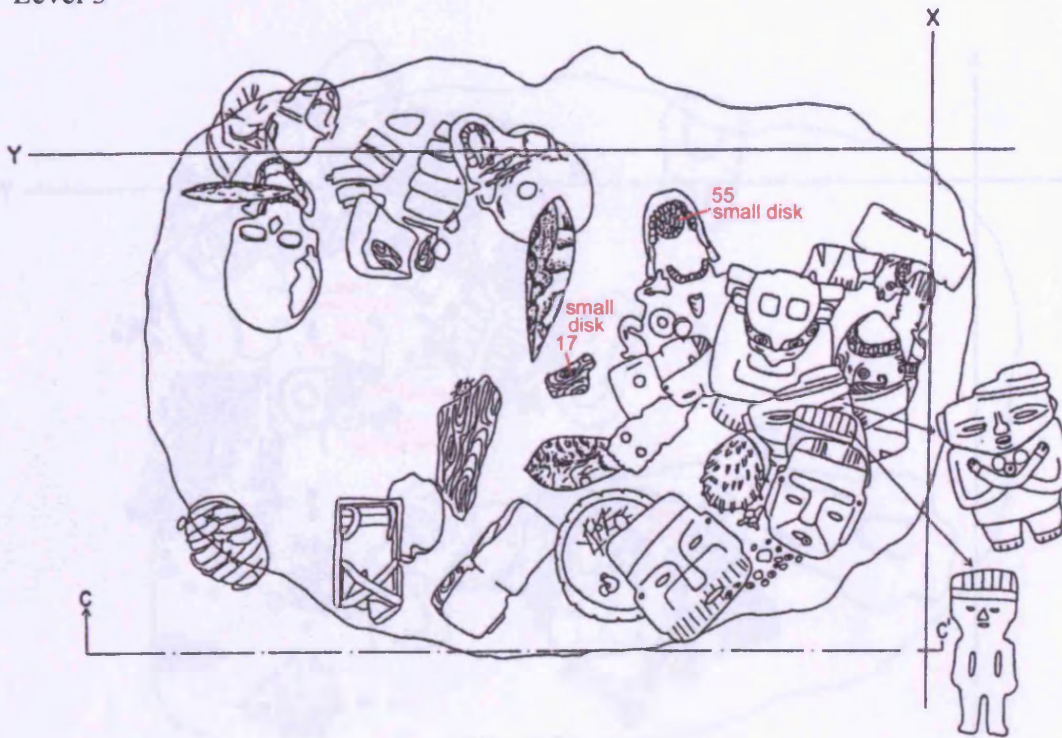
Number of proposed levels: 5

Maximum internal dimensions of the offerings (cm): N-S axis (125), E-W axis (90)

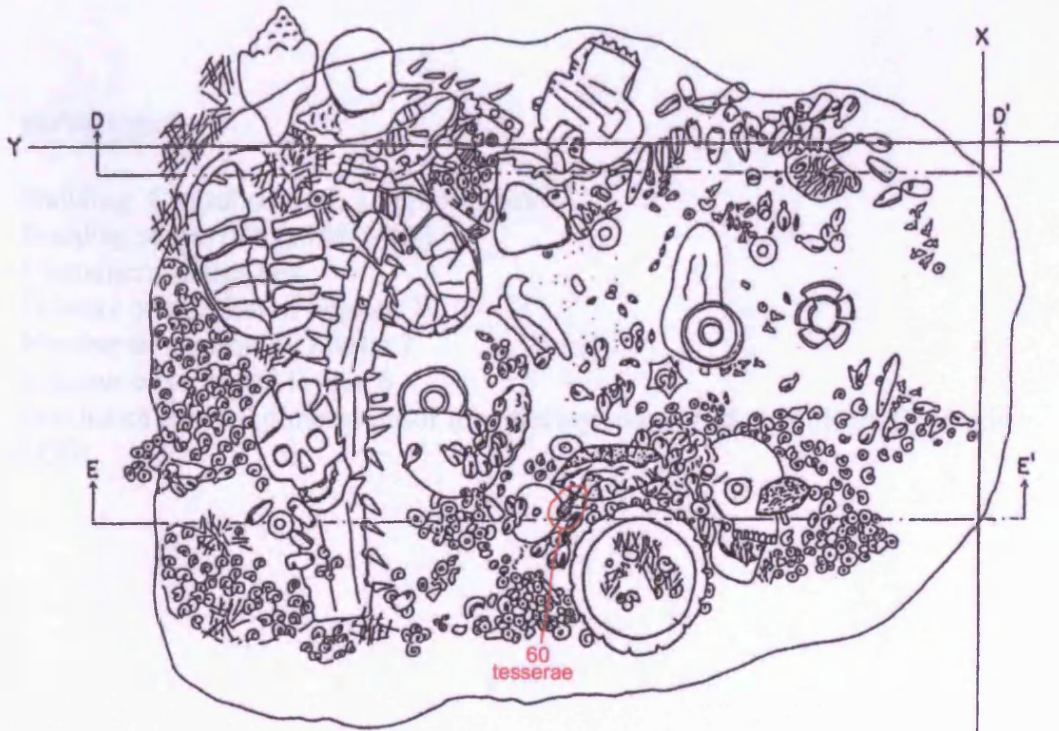
Off. 11
Level 4



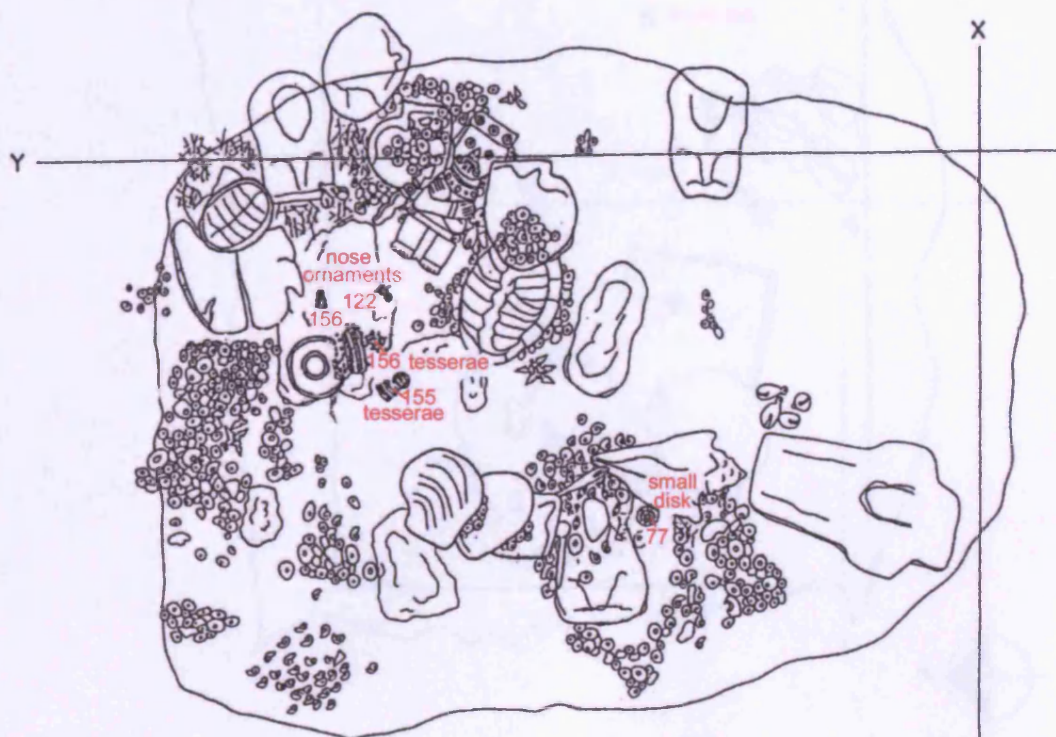
Off. 11
Level 3



Off. 11
Level 2



Off. 11
Level 1



Off. 13
Level 3

OFFERING 13

Building: Central section, Templo Mayor

Building stage: IVb (1469-1481)

Container: sillares box

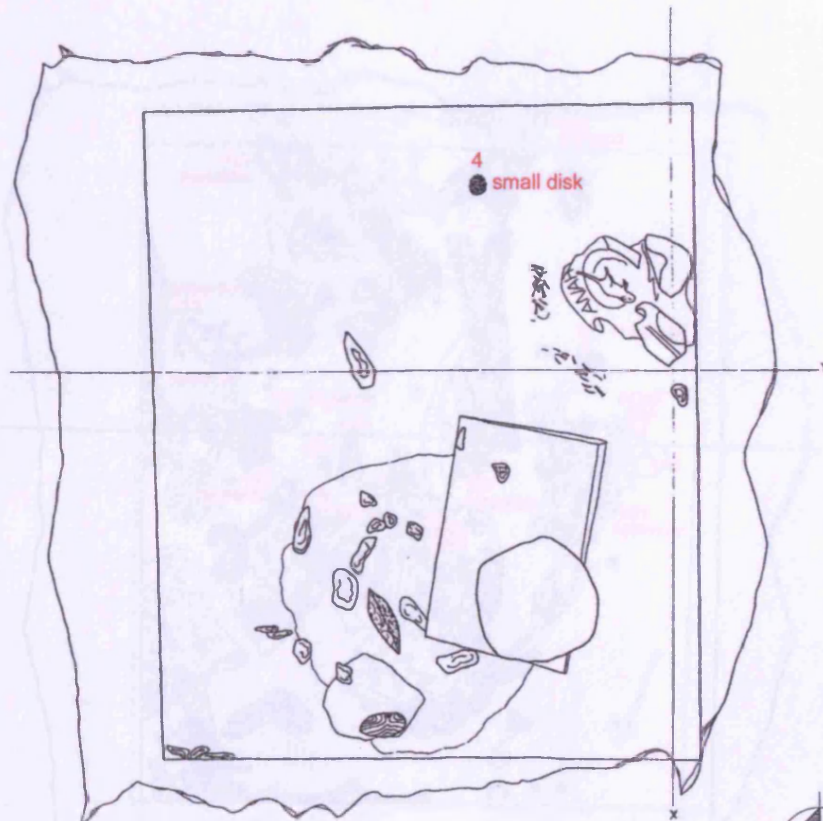
Primary orientation of objects: W

Number of excavation levels: 7

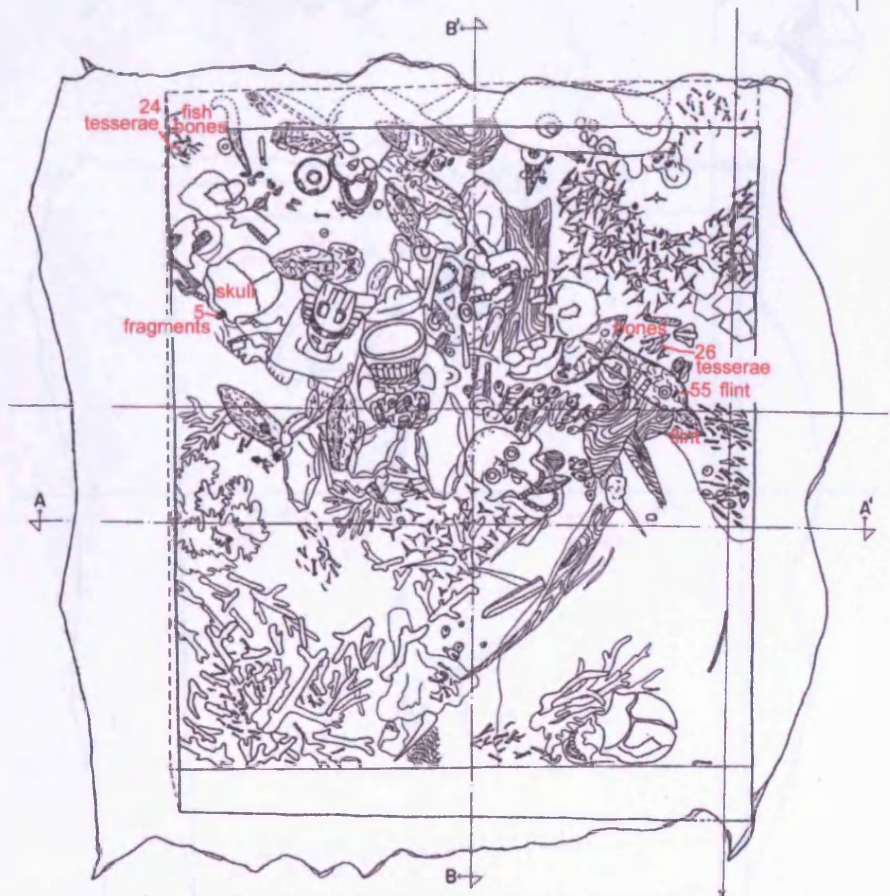
Number of proposed levels: 6

Maximum internal dimensions of the offerings (cm): N-S axis (130), E-W axis (150)

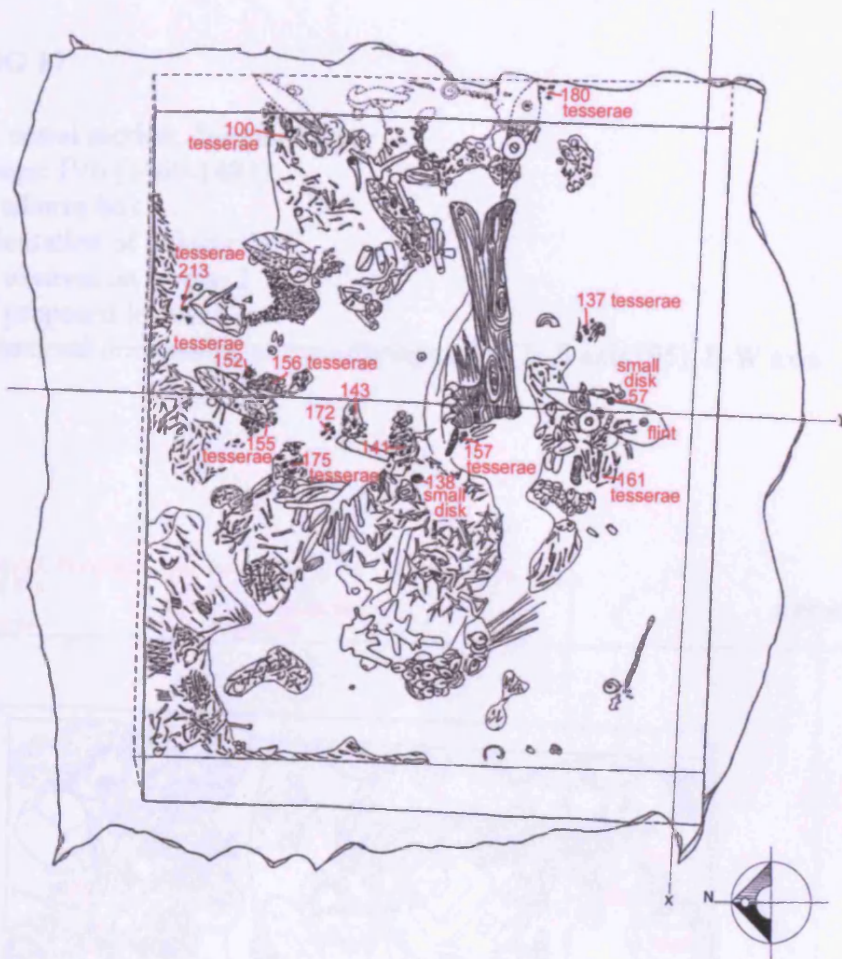
Off. 13
Level 4



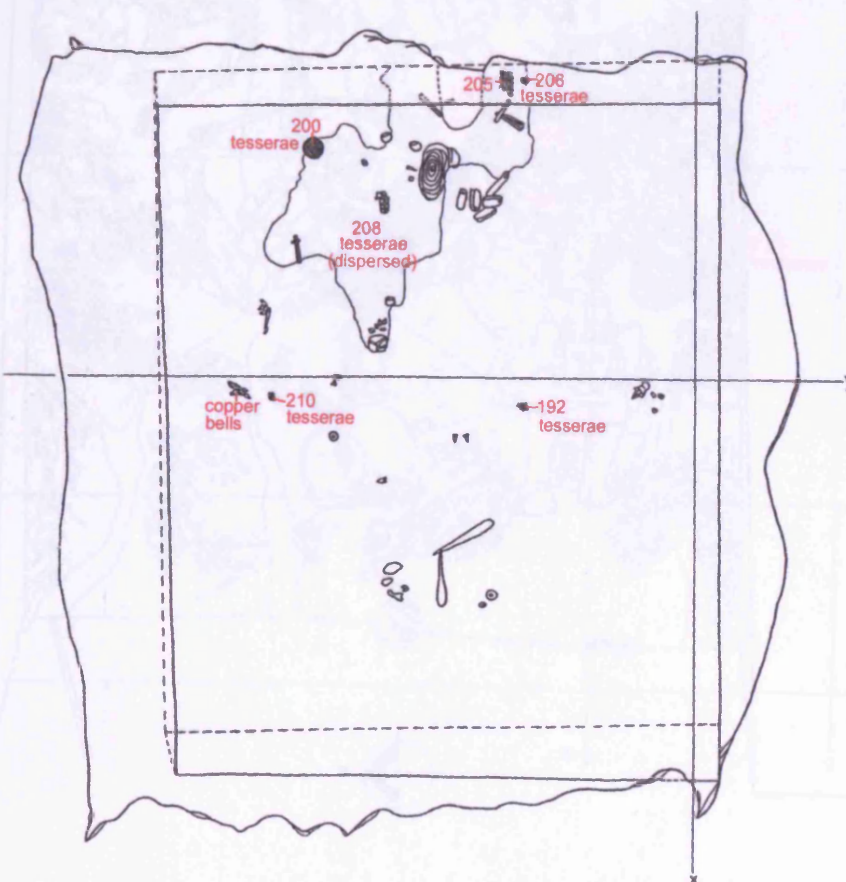
Off. 13
Level 3



Off. 13
Level 2



Off. 13
Level 1



OFFERING 17

Building: Central section, Templo Mayor

Building stage: IVb (1469-1481)

Container: sillares box

Primary orientation of objects: W

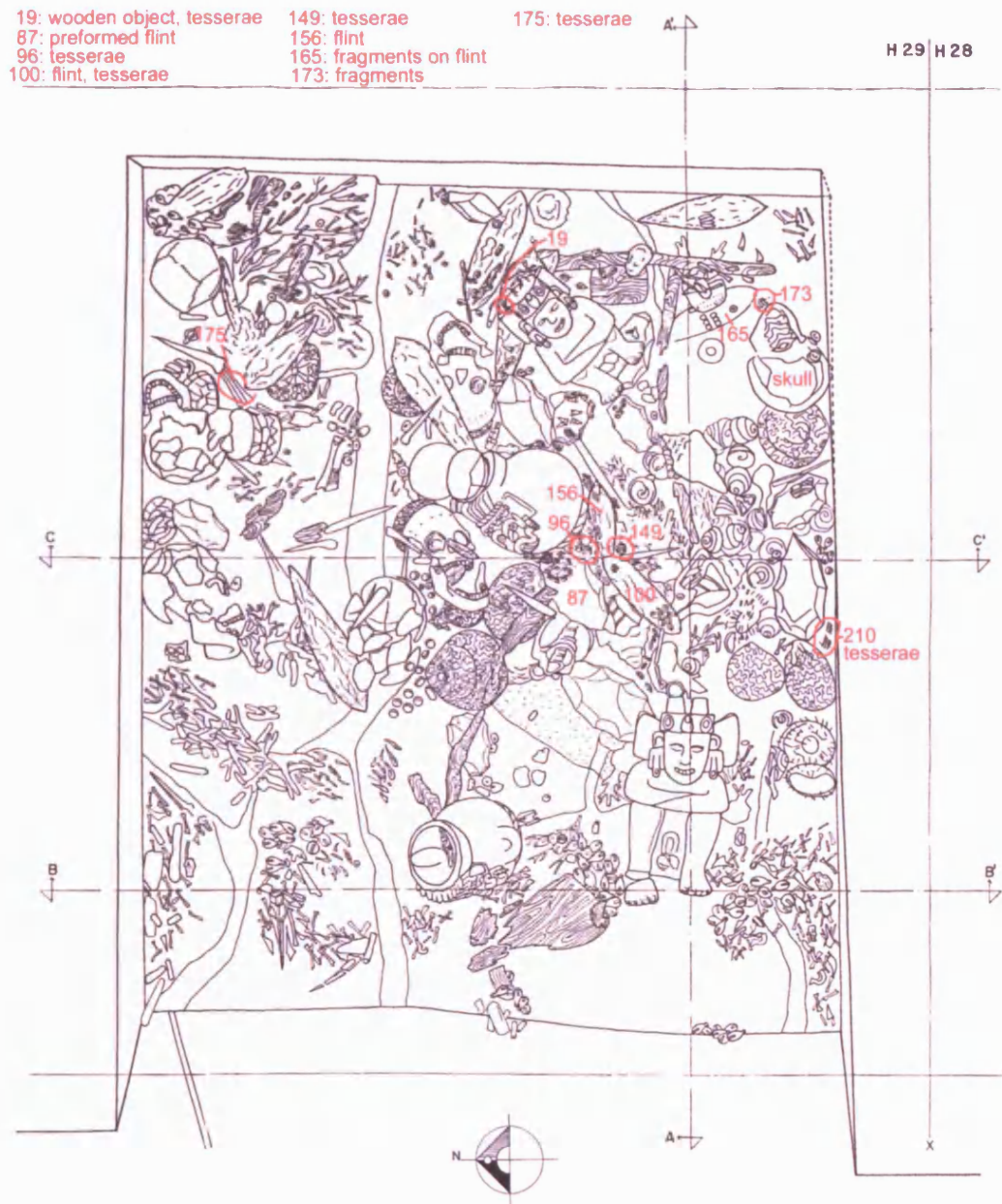
Number of excavation levels: 2

Number of proposed levels: 5

Maximum internal dimensions of the offerings (cm): N-S axis (95), E-W axis (170)

Off. 17

Level 2

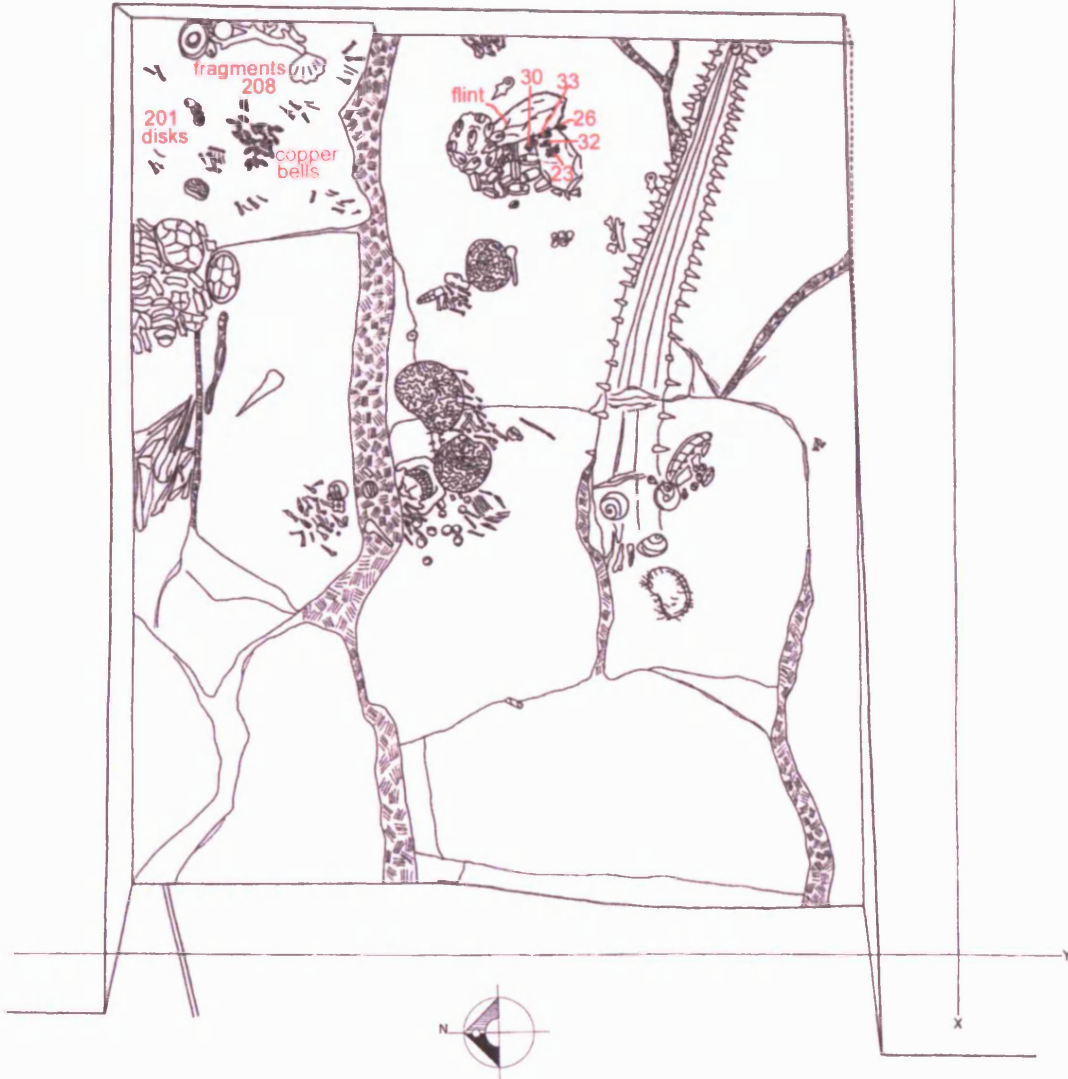


Off. 17
Level 1

23: tesserae
26: tesserae, small pectoral
30: tubuler mosaic

32: tubular mosaic
33: copal object

H 29 | H28



OFFERING 20

Building: Central section, Templo Mayor

Building stage: IVb (1469-1481)

Container: fill below floor

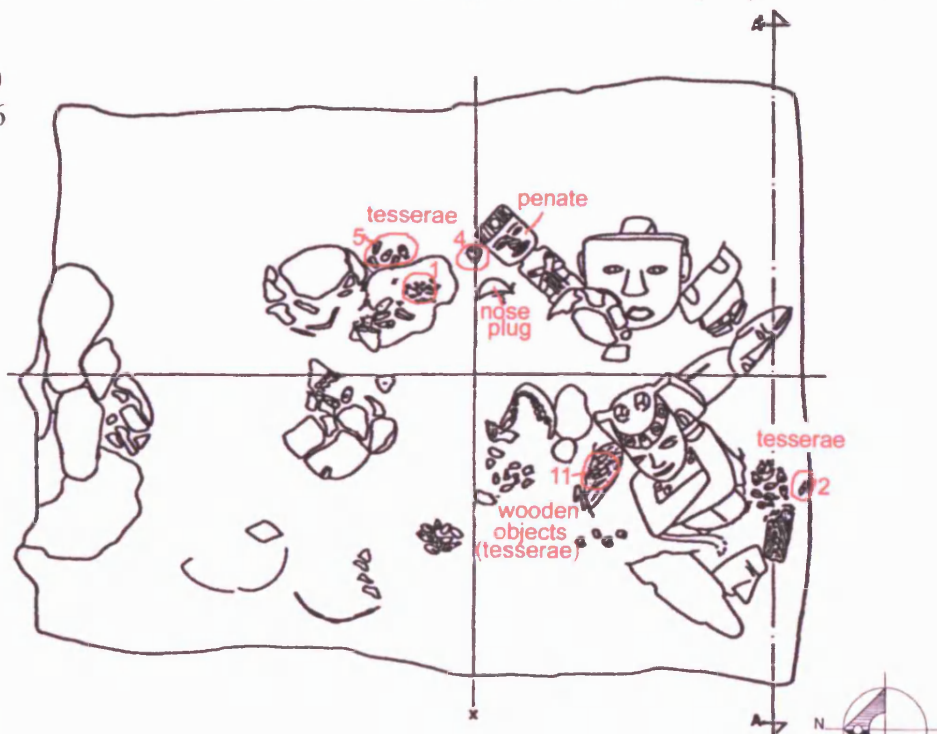
Primary orientation of objects: W

Number of excavation levels: 3

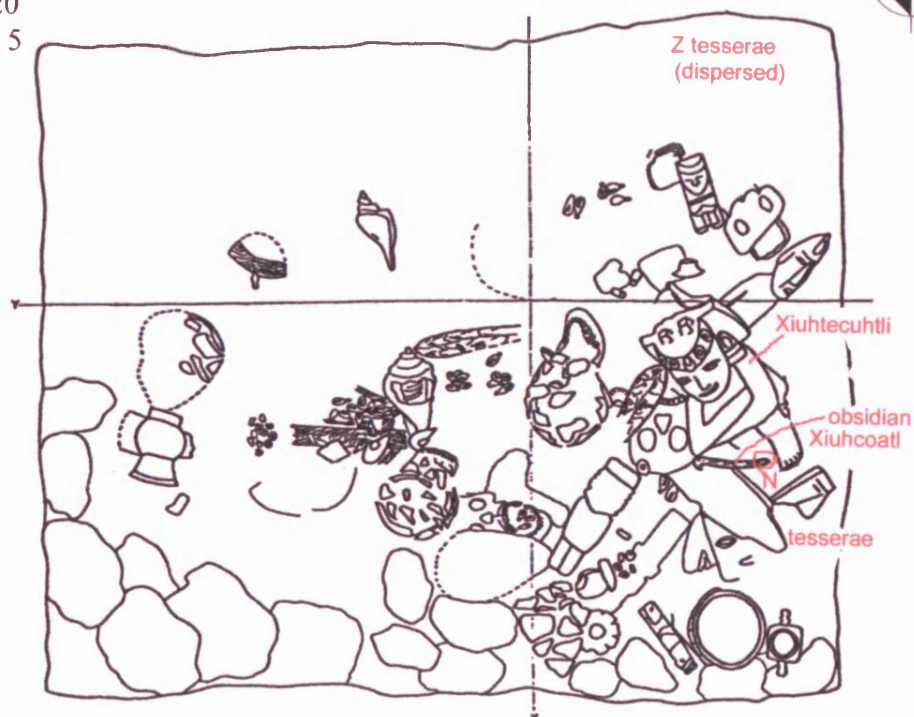
Number of proposed levels: 5

Maximum internal dimensions of the offerings (cm): N-S axis (155), E-W axis (125)

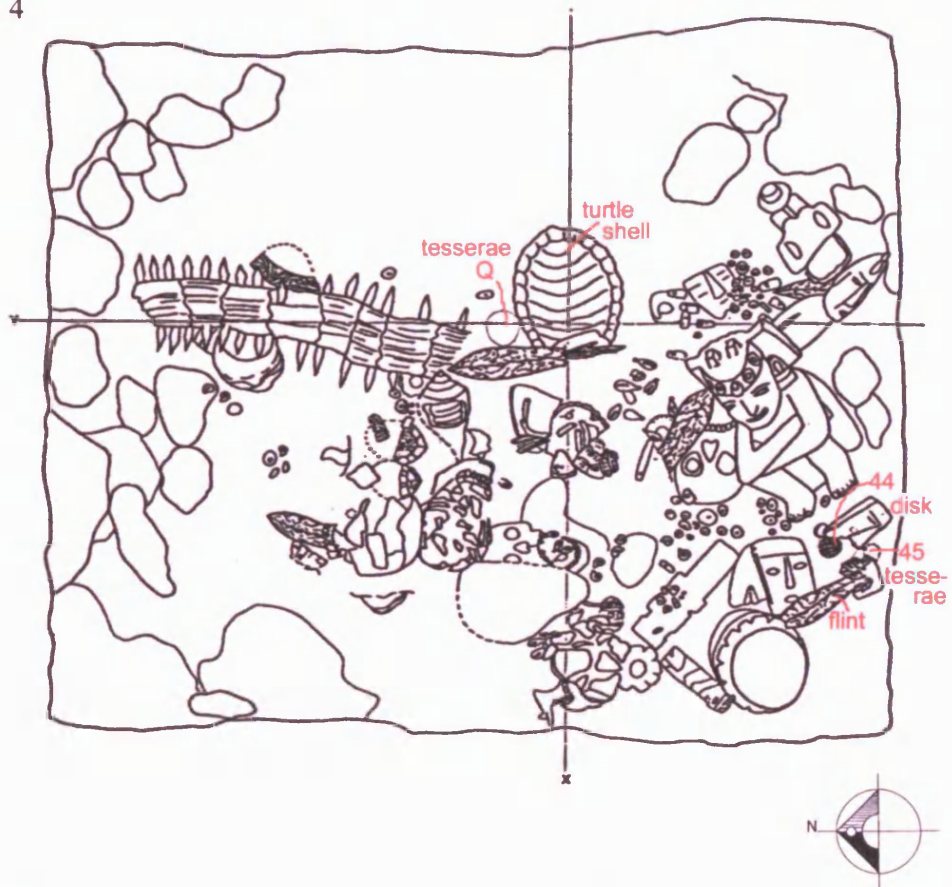
Off. 20
Level 6



Off. 20
Level 5



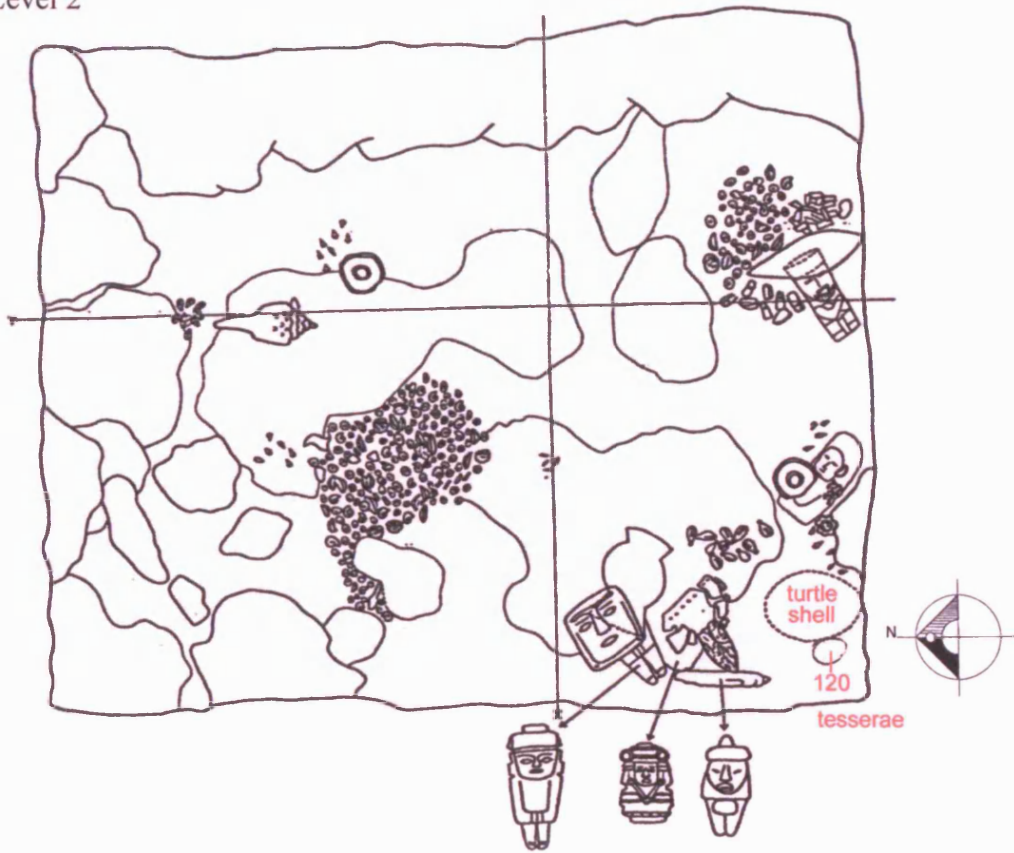
Off. 20
Level 4



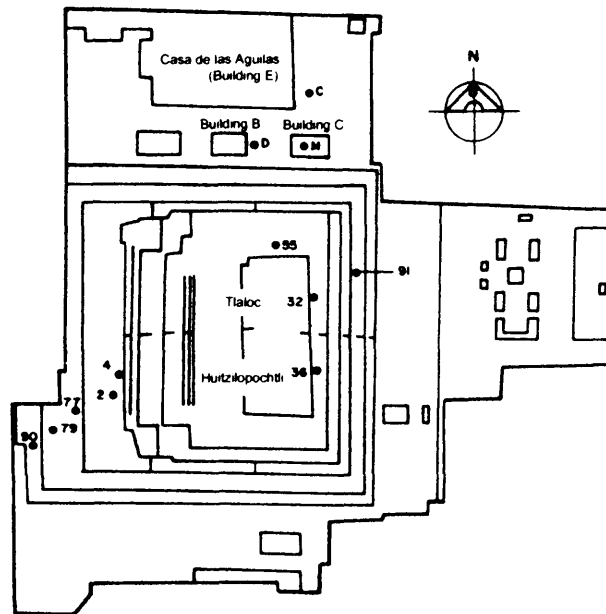
Off. 20
Level 3



Off. 20
Level 2



1.2 COMPLEX Q



Offerings 2, 4, 32, 36, 55, 77, 79, 90, 91, C, D, M

Quantity and diversity of objects

Range of the number of elements: n/a

Range of the number of object types: n/a

OFFERING 2

Building: Huitzilopochtli, Templo Mayor

Building stage: IVb (1469-1481)

Container: sillares box

Primary orientation of objects: undetermined

Number of excavation levels: 1

Number of proposed levels: 1

Maximum internal dimensions of the offerings (cm): N-S axis (40), E-W axis (50)

*No layer plans recorded.

OFFERING 77

Building: Huitzilopochtli, Templo Mayor

Building stage: V (1481-1486)

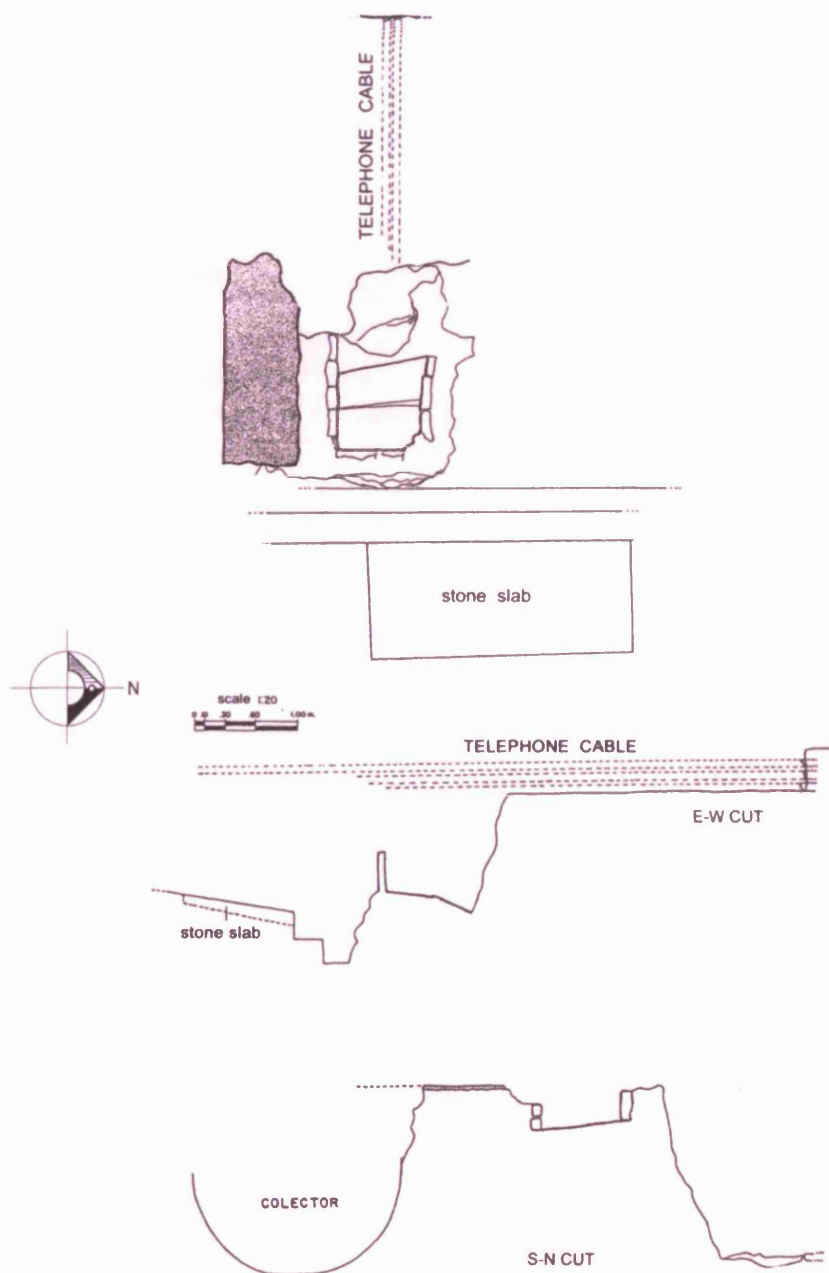
Container: sillares box

Primary orientation of objects: undetermined

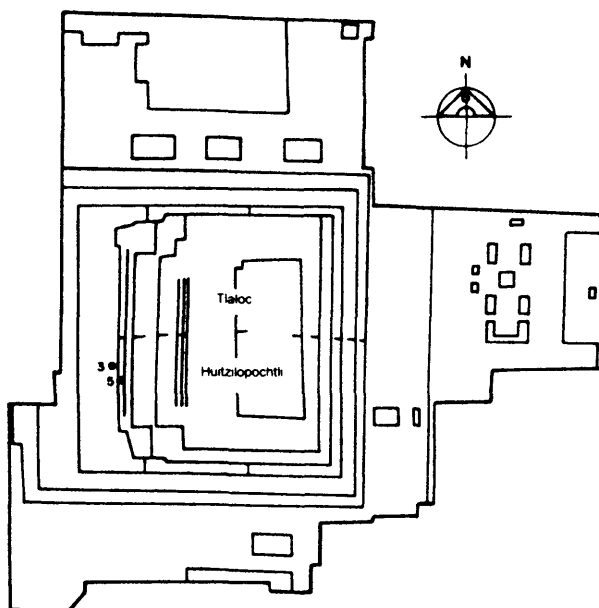
Number of excavation levels: 1

Number of proposed levels: 1

Maximum internal dimensions of the offerings (cm): N-S axis (80), E-W axis (100)



1.3 COMPLEX D



Offerings 3, 5

Quantity and diversity of objects

Range of the number of elements: 119-152

Range of the number of object types: 17-20

OFFERING 3

Building: Huitzilopochtli, Templo Mayor

Building stage: IVb (1469-1481)

Container: sillares box

Primary orientation of objects: W

Number of excavation levels: 1

Number of proposed levels: 3

Maximum internal dimensions of the offerings (cm): N-S axis (60), E-W axis (60)

*No layer plans recorded.

OFFERING 5

Building: Huitzilopochtli, Templo Mayor

Building stage: IVb (1469-1481)

Container: sillares box

Primary orientation of objects: W

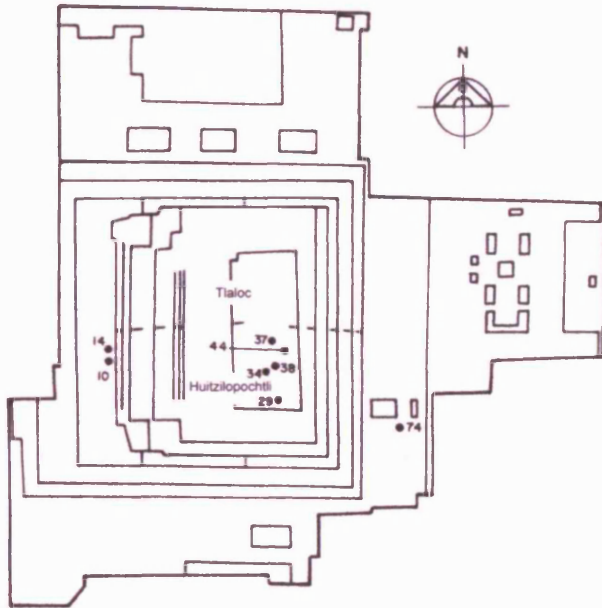
Number of excavation levels: 1

Number of proposed levels: 1

Maximum internal dimensions of the offerings (cm): N-S axis (150), E-W axis (200)

*No layer plans recorded.

1.4 COMPLEX E



Offerings 10, 14, 29, 34, 37, 39,
44, 74

Quantity and diversity of objects

Range of the number of
elements:

3-78

Range of the number of object
types:

3-15

OFFERING 37

Building: Huitzilopochtli, Templo Mayor

Building stage: II (1375-1426)

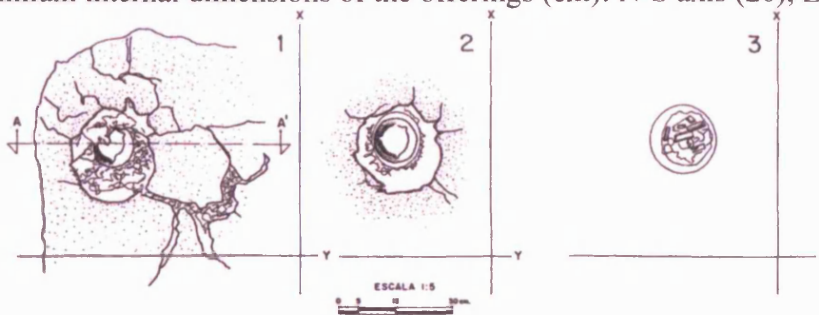
Container: fill under floor

Primary orientation of objects: W

Number of excavation levels: 3

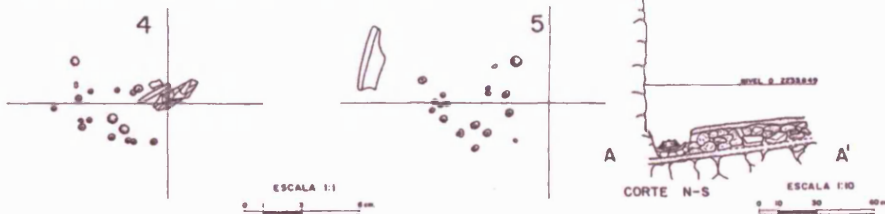
Number of proposed levels: 1

Maximum internal dimensions of the offerings (cm): N-S axis (20), E-W axis (20)

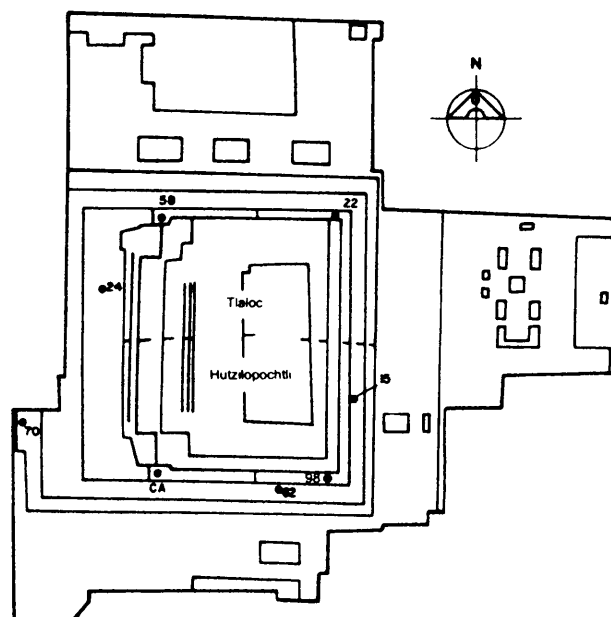


*No contextual information recorded.

Twenty-two turquoise beads were recovered from the funeral vessel.



1.5 COMPLEX C



Offerings 15, 22, 24, 58, 62, 70, 98, CA

Quantity and diversity of objects

Range of the number of elements: 44-126

Range of the number of object types: 19-25

OFFERING CA

Building: Huitzilopochtli, Templo Mayor

Building stage: IVb (1469-1481)

Container: fill below floor

Primary orientation of objects: S

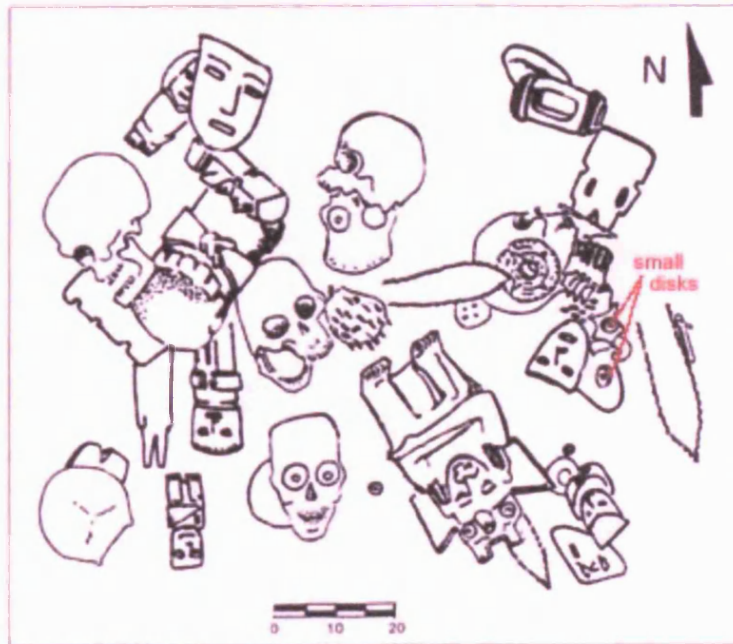
Number of excavation levels: 3

Number of proposed levels: 3

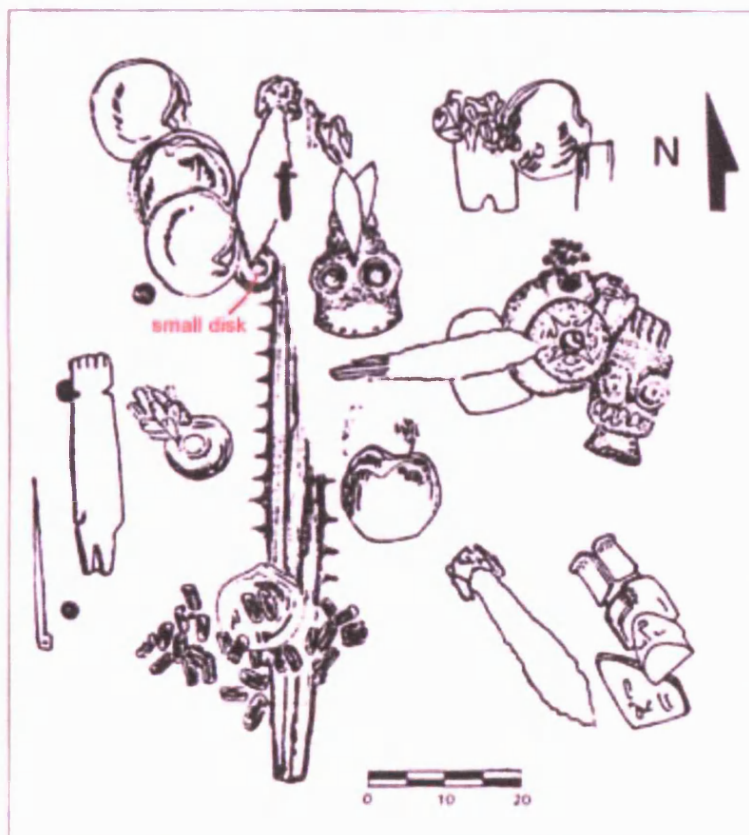
Maximum internal dimensions of the offerings (cm): N-S axis (100), E-W axis (100)

*Layer plans and contextual information are based on Olmo Frese 1999 (82-8).

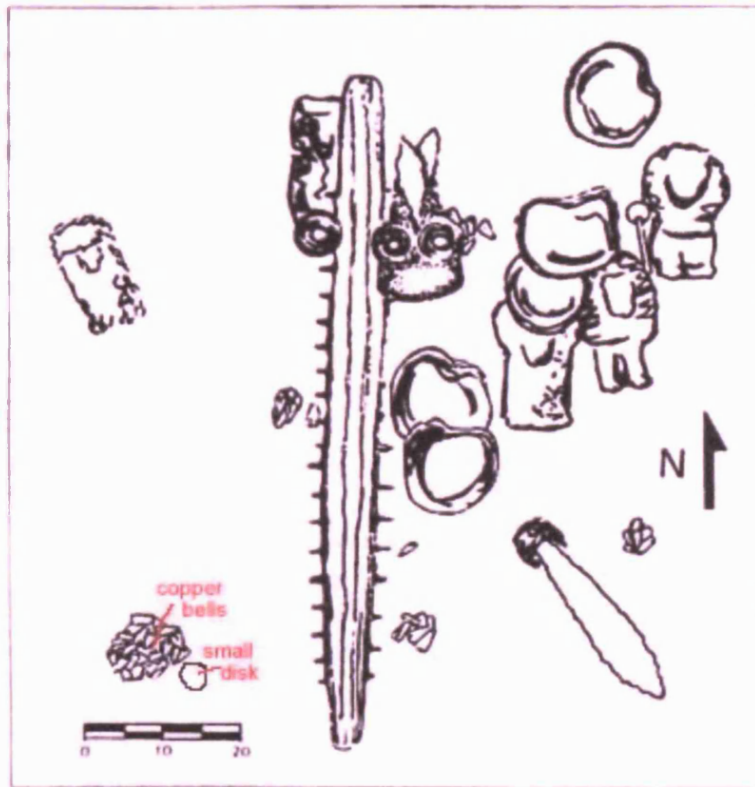
Off. CA
Level 4



Off. CA
Level 3



Off. CA
Level 2



OFFERING 98

Building: Huitzilopochtli, Templo Mayor

Building stage: IVb (1469-1481)

Container: fill below floor

Primary orientation of objects: S

Number of excavation levels: 5

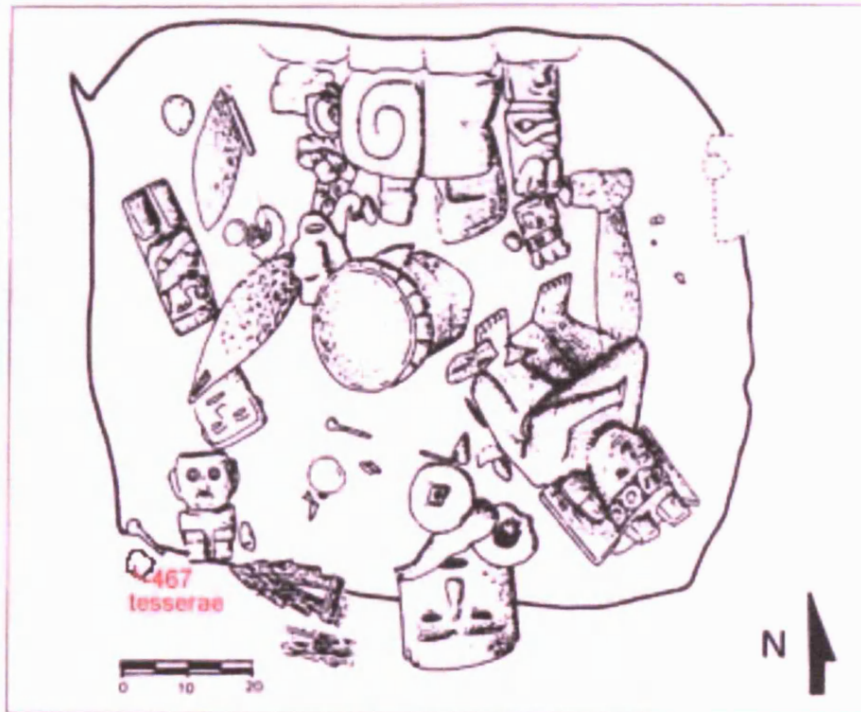
Number of proposed levels: n/a

Maximum internal dimensions of the offerings (cm): N-S axis (117), E-W axis (105)

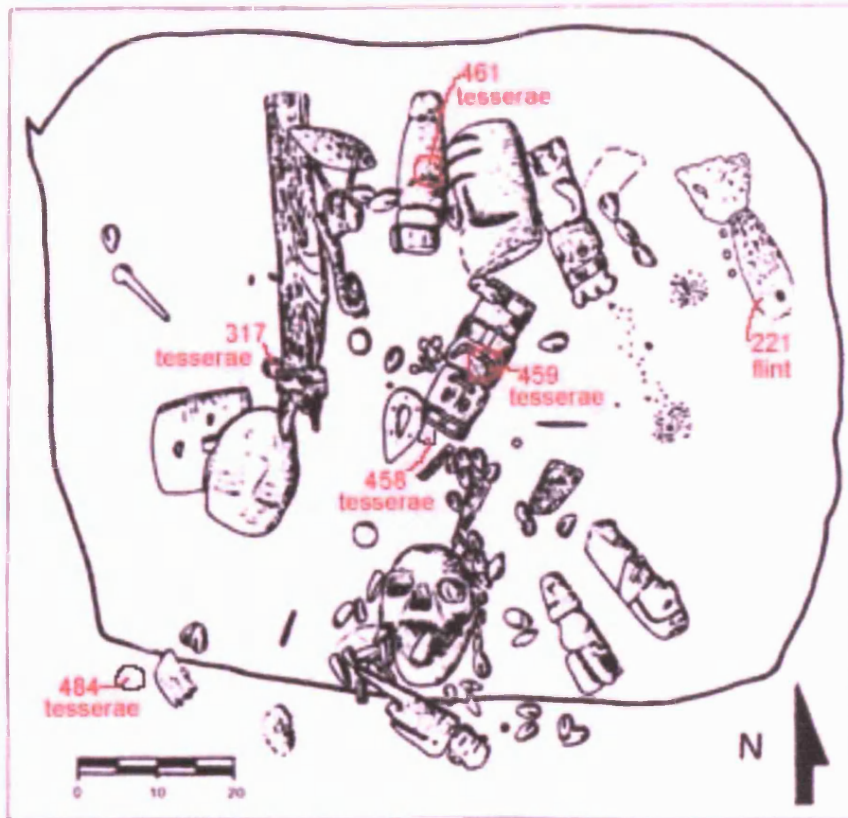
*Layer plans and contextual information are based on Olmo Frese 1999 (65-74).

Off. 98

Level 4



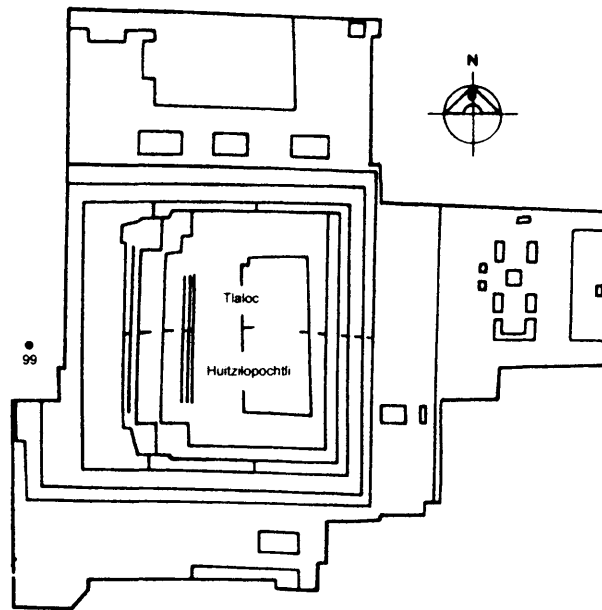
Off. 98
Level 3



Off. 98
Level 2



1.6 ISOLATED



OFFERING 99

Building: Huitzilopochtli, Templo Mayor

Building stage: VI (1486-1502)

Container: fill below floor

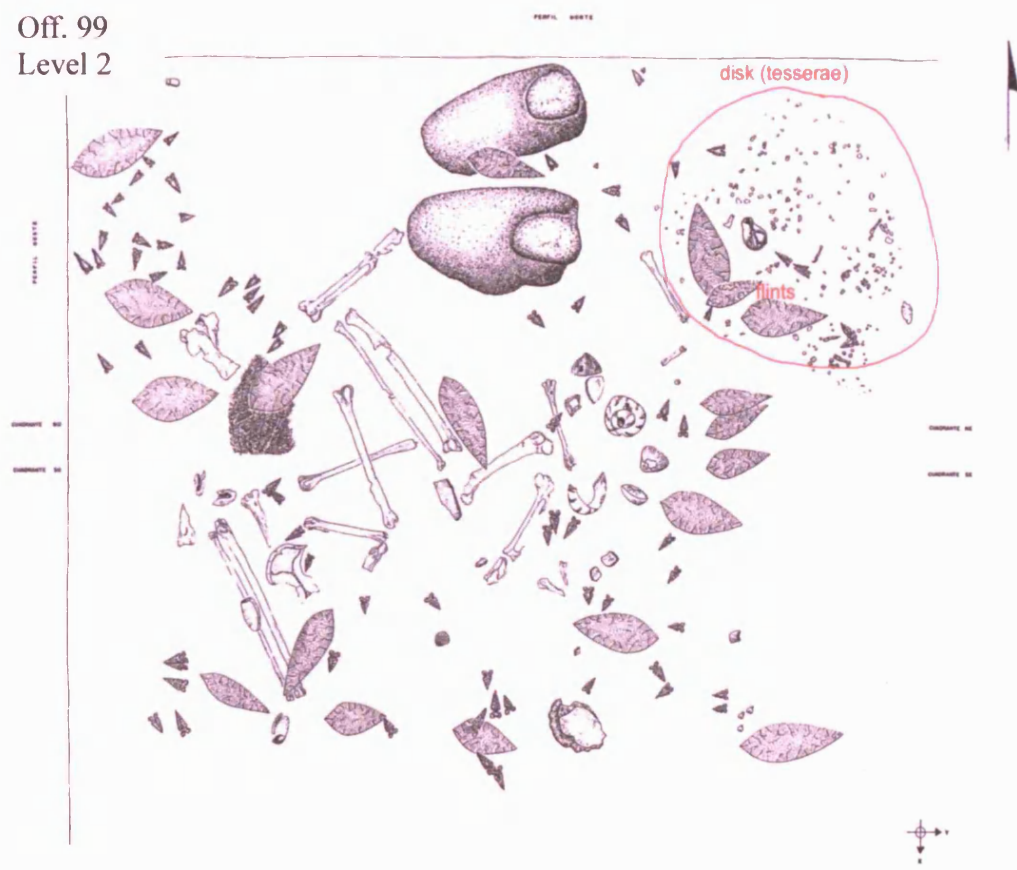
Primary orientation of objects: n/a

Number of excavation levels: 2

Number of proposed levels: n/a

Maximum internal dimensions of the offerings (cm): N-S axis (-), E-W axis (-)

Off. 99
Level 2

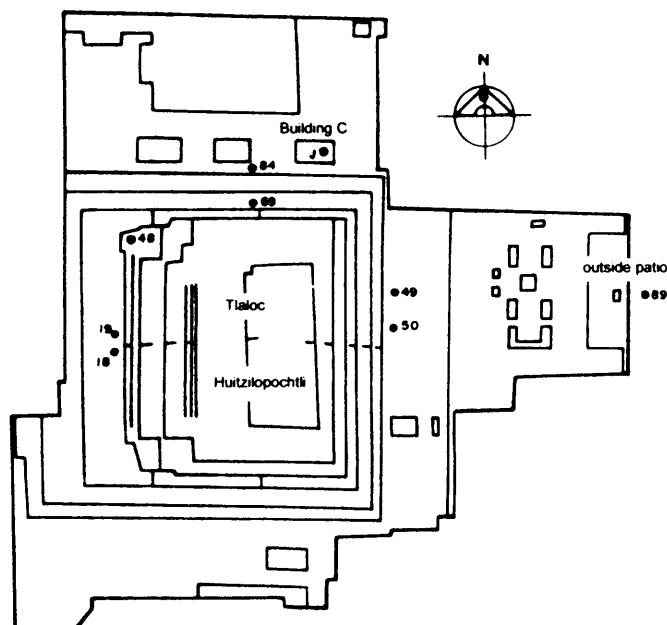


Off. 99
Level 1



2. Offerings on the Tlaloc side

2.1 COMPLEX F



Offerings 18, 19, 48, 49, 50, 69, 84, 89, J

Quantity and diversity of objects

Range of the number of elements: 11-157

Range of the number of object types: 9-14

OFFERING 48

Building: Tlaloc, Templo Mayor

Building stage: IVa (1440-1468)

Container: sillares box

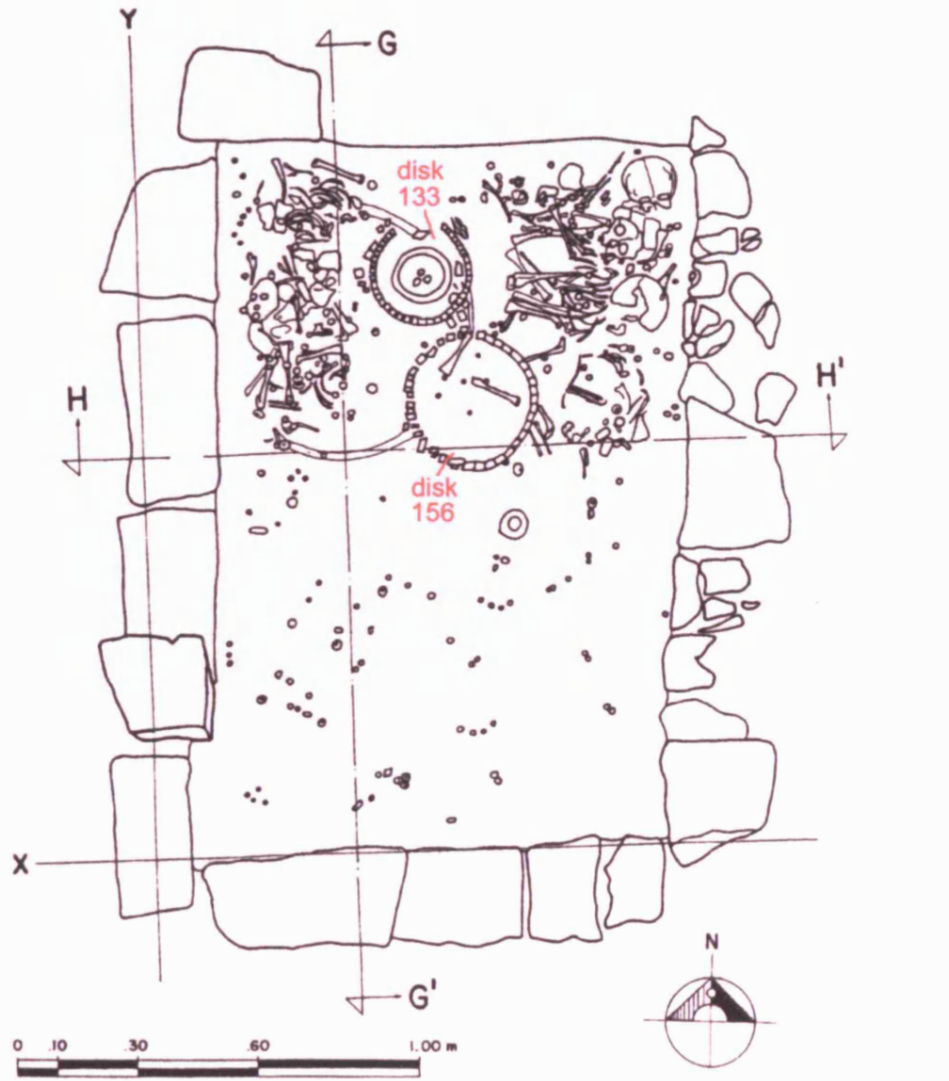
Primary orientation of objects: N

Number of excavation levels: 5

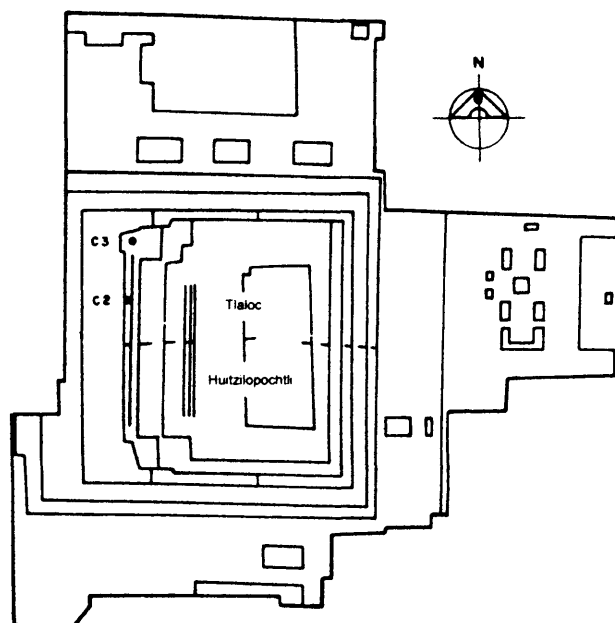
Number of proposed levels: 5

Maximum internal dimensions of the offerings (cm): N-S axis (180), E-W axis (120)

Off. 48
Level 2



2.2 COMPLEX B



Offerings C2, C3

Quantity and diversity of objects

Range of the number of elements: 254-364

Range of the number of object types: 29-35

CHAMBER 3

Building: Tlaloc, Templo Mayor

Building stage: IVa (1440-1468)

Container: sillares box

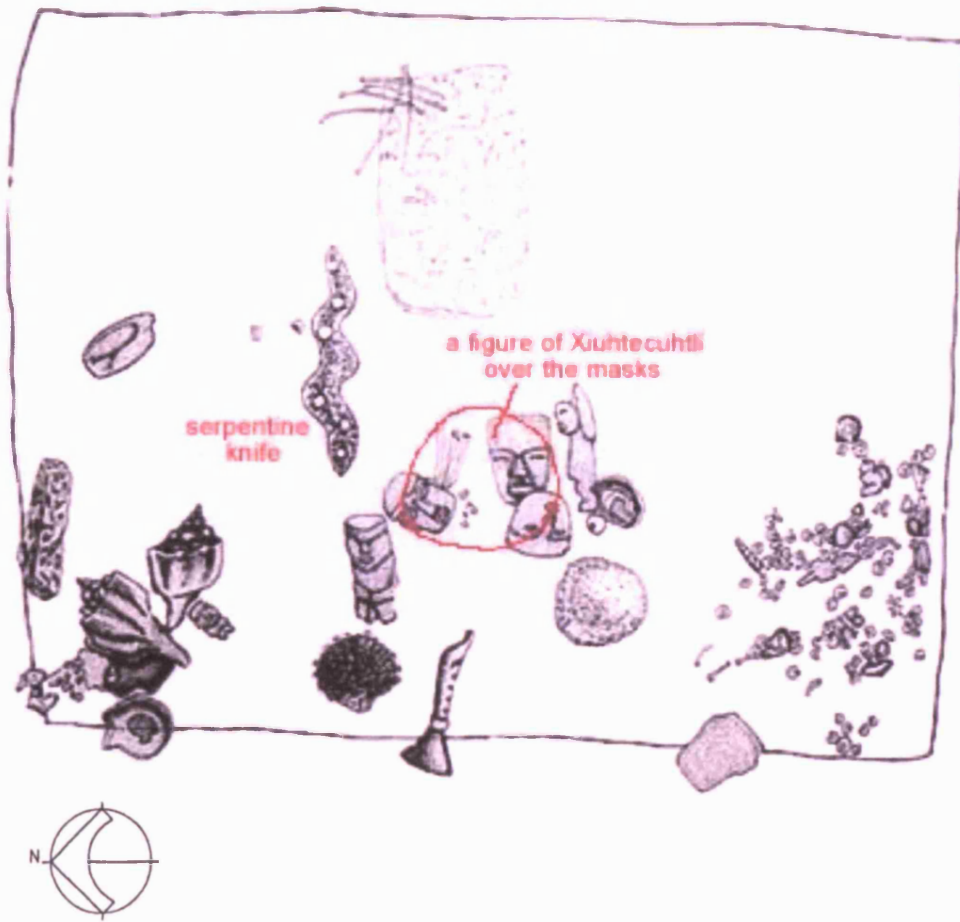
Primary orientation of objects: W

Number of excavation levels: 8

Number of proposed levels: 2

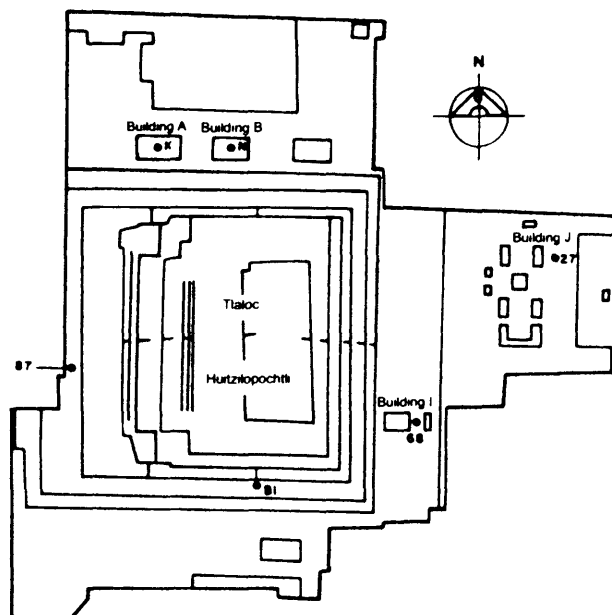
Maximum internal dimensions of the offerings (cm): N-S axis (112), E-W axis (109)

C3
Level 3



3. Offerings in the buildings within the sacred precinct

3.1 COMPLEX H



Offerings 27, 68, 87, B1, K, N

Quantity and diversity of objects

Range of the number of elements: 17-116

Range of the number of object types: 8-14

OFFERING K

Building: A, Templo Mayor

Building stage: VIa (1481-1502)

Container: sillares box

Primary orientation of objects: W

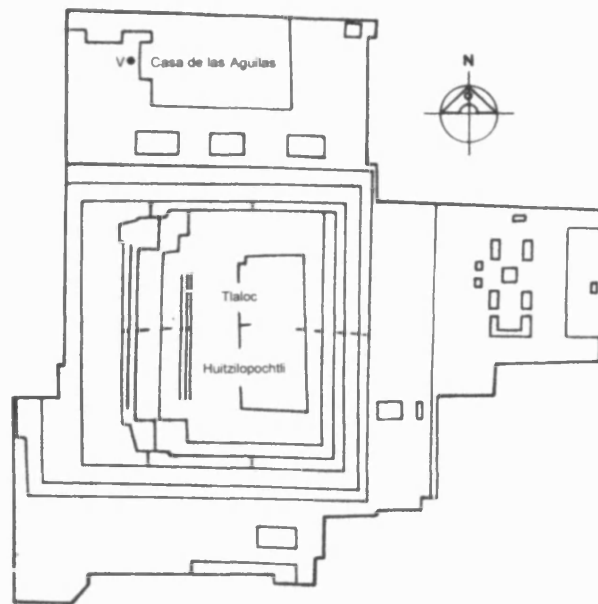
Number of excavation levels: 4

Number of proposed levels: 4

Maximum internal dimensions of the offerings (cm): N-S axis (43), E-W axis (92)

*No layer plans recorded.

3.2 ISOLATED



OFFERING V

Building: Casa de las Aguilas, Templo Mayor

Building stage: IV (1440-1469)

Container: three cylindrical pits

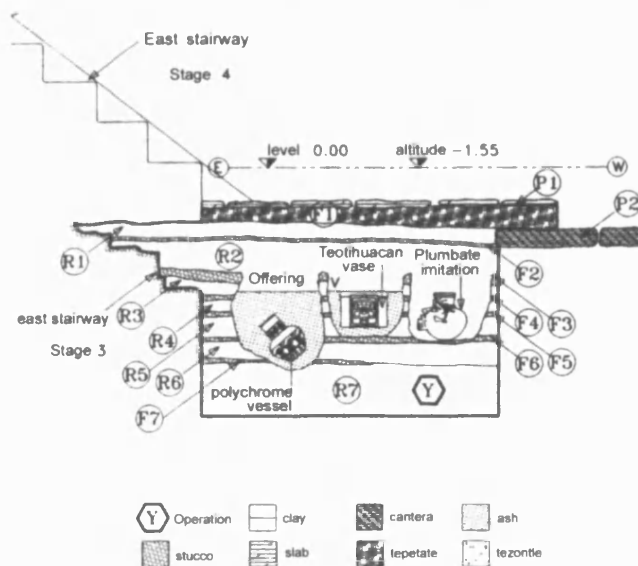
Primary orientation of objects: -

Number of excavation levels: -

Number of proposed levels: -

Maximum internal dimensions of the offerings (cm): N-S axis (120), E-W axis (150)

*Description and a plan based on López Luján, et al. (2000: 222-3)



Casa de las Aguilas
Operation Y View from south side

Appendix 4 Data and context of the turquoise objects from the offerings of the Templo Mayor

Notes

1. As of March/2006 total of 138 offering caches have been excavated: 1 to 107, A to X, Chamber II & III, B1, B2, CA, E1. (Chamber I = Off. 5)

2. Offerings 101 to 108 (all from Tlaloc side) have not yet been catalogued.

3. Offerings 1 to 5 do not have offering plans and contextual records.

Likewise offerings 98, 99, K & V do not have detailed record containing the contexts of the turquoise objects.

4. The offering levels indicate excavation level (not proposed level). Level I means the lowest/deepest layer and the larger numbers, upper/higher.

5. Abbreviations: CRIBA = sieved; MSD (Materiales sin Datos) = Objects without data; w/ = with

6. 'Preformed flint' is my translation of 'Preforma de pedernal'. It is a piece of pedernal (flint stone) in process of being manufactured to be a flint knife.

No.	Offering no.	Layer level	Element no.	Type of object	No. of object	Location	Material no.	Entry no.	Inventory no.	Size (cm)	Weight (g)	Notes & Contexts
1	1		26	flint knife	1		P3	270-78	10-252837	L21.5 W7.2 Th1.1	206	Green flint. Application of quadrangular pieces of mother-of-pearl, 2 pieces of caracol, 1 tessera of turquoise and 2 copper bells.
2	1		68	preformed flint	1		P7	173-78		L15 W9 Th4.5	466.7	Application of wooden remains and tesserae of turquoise.
3	1		82	tesserae	10		P1					
4	1		97.5	tesserae			P1	Misc.4	10-252817	< 0.5	0.6	Weight w/bag
5	1		110	tesserae	4		P1					
6	1		129A	tesserae	527		P1					
7	1		P	tesserae	1		P1					
8	1		CAJA 6	tesserae	33		P1					
9	1		CAJA 7	tesserae			P1					
10	1		CAJA 10	tesserae			P1					
11	1		CISTA 1	tesserae			P1					
12	1		CISTA 1	tesserae	1		P1					
13	1		CISTA 1	tesserae	4		P1					
14	1		CISTA 1	tesserae	10		P1					
15	1		Misc	tesserae	1		P1					
16	1			tesserae	1497		P1			< 1.3	14.1	w/ 1 circular tessera of green stone and bone fragments. Associated with some fragments of conch shell and bone.
17	6	2	80	flint knife	1	Centre-N	P4	367	10-168813	L27.2 W7.9 Th1.4	236.2	Face on both sides. Pyrite eyes, teeth of 16 pieces of conch shell, eyebrows of turquoise tesserae. South of greenstone sculpture, over turtle shell (el.96). Pointing NE.
18	6	2	86	small disk	1	SW						Turquoise tesserae in form of disk, under turtle shell (el.86).
19	6	2	99	flint knife	1	SW		1124				Turtle shell between 2 flints (el.99 & el.100). Pointing NW.
20	6	2	100	flint knife	1	SW	P1	134		L24.5 W6 Th 1.3	240.2	Reddish brown flint. Eye of pyrite, teeth of 5 pieces of conch shell and eyebrow of 38 turquoise tesserae. Pointing NW. Associated with remains of copal and carbonized material. w/ 15 caracols and group of shells.
21	6	1	102	shell pendant	1	NE		98				Under bones of sawfish, over copal figure w/ turquoise (el.147).
22	6	1	127	shell plaque	1	Centre-E						Central part of pyrite. Turquoise tesserae form radiating parts from the centre circle.
23-24	6	1	136	small disks	2	SW		375	10-252070 0/2	D1.5/1.8 Th0.2/0.3	1.1/0.9	Turquoise tesserae in form of disk. South of conch shell (el.139), under flint w/turquoise (el.99).
25	6	1	140	small disk	1	SW		640				Copal figure with turquoise tesserae. Under shell plaque (el.127).
26	6	1	147	copal figurine	1	Centre-E		523				Sieved.
27	6	dispersed	CRIBA	fragments				700				

No.	Offering no.	Layer level	Element no.	Type of object	No. of object	Location	Material no.	Entry no.	Inventory no.	Size (cm)	Weight (g)	Notes & Contexts
28	60	?	36	tesserae	3+	?	P11	486			6.9 + 1.3	2 bags. The bag of 1.3g contains 3 tesserae. Weight w/ bag. Associated with greenstones.
29	60	?	36	tesserae		?	P11	4896			3.7	Weight w/ 2 bags. Associated with copper bells and greenstones.
30	60	1	38	fragments		SE						On the stone scraper which is placed in the middle of the mass of caracols and fish bones, east of sawfish bone.
31	60	?	53	tesserae	40	?	P10	4903			1.2	Weight w/ bag. P10 contains jade beads and necklace.
32	60		CRIBA	tesserae	620	-	P10	6555		< 1.2	7.7	Weight w/ bag. Sieved.
33	11	4	9	small disk	1	SE		261	10-263409	D4.5 Th0.5	5	East of Xiuhtecuhlli, over skull mask w/turquoise disk inside (el.55).
34	11	3	17	small disk	1	Centre	P9	333		< 1.2	2	84 turquoise tesserae in form of disk w/ wooden pieces. Weight w/bag. Associated with chimalli shield and copper bells.
35	11	4	26	tesserae		SE	P5	465		< 0.9	1.3	between 2 flints. Almost at the centre of the offering. Weight w/bag. Over flint knife pointing NE.
36	11	4	28	flint knife	1	SE		454	10-162932	L27 W7 Th1.5	348.6	w/ turquoise eyebrow. Pointing NE. SE of and facing to skull.
37	11	3	55	small disk	1	SE						Fragments of a disk, found inside the jaw of a skull mask.
38	11	2	60	tesserae	401	Centre-W	P9	525		< 0.9	8.5	w/ wooden backing, weight w/ bag. copal and bells around, between flint knife and stone brazier with ribbon.
39	11	1	77	small disk	1	Centre-W	P9	583		< 0.7	2.2	w/ wooden pieces. Weight w/bag. 70 turquoise tesserae in form of disk, between copal figure and conch shell.
40	11	1	122	nose ornament?	1	NE		694	10-263407	L2.5 W1.5 Th0.2		Turquoise tesserae incrustated on one side of the object. Under turtle, over copal. El.122, 155, 156 are located over or beside the same copal figure.
41	11	1	155	tesserae	141	Centre-N	P9	811		< 1.3	5.2	w/ pieces wooden backing. Weight w/ bag. South of the same copal as above.
42	11	1	156	tesserae	372	NE	P9	812			7.6	w/ copal, weight w/ bag. Over the same copal as above.
43	11	1	156	nose ornament?	1	NE		812	10-263407	L2.5 W1.5 Th0.2		Turquoise tesserae incrustated on one side of the object. Under sawfish, scattered over disk of mother-of-pearl and the same copal as above.
44	11	dispersed	J	tesserae	10		P9	938		< 0.8	1.5	Weight w/ bag. Associated with two fragments of copper.
45	11	dispersed	K	tesserae	98		P9	974, 982, 983, 985		< 1	1.3	w/ copal, weight w/ bag.
46	13	4	4	small disk	1	SE	P15	1649			4.4	w/ wooden pieces, weight w/bag. 188 turquoise tesserae in form of disk, over the end of flint knife.
47	13	3	5	fragments		NE						Under skull jaw, over stone scraper.
48	13	3	24	tesserae	32	NE	P15	1677			2.2	w/ copal fragments and fish bones, weight w/ bag.
49	13	3	26	tesserae	8	SE	P15	1680			1.3	w/ bones, pigments and clay, weight w/ bag. Over the area of fish remains w/ turquoise (el.137).
50	13	3	55	flint knife	1	Centre-S						Turquoise eyebrow. The knife stuck on the base of bells, found over another flint and on burned soil. Pointing SW.
51	13	2	57	tesserae	32	Centre-S	P15	1722			2.5	w/ animal bones and wooden backing, weight w/ bag. In form of disk, under the flint w/ turquoise (el.55), over another flint.
52	13	2	100	tesserae	40	NE	P15	1772			2.15	w/ wood, weight w/ bag and wood. Under flint knife and skull.
53	13	2	137	tesserae		SE						In the area of fish remains. Under el.26.
54	13	2	138	small disk	1	Centre	P15	1814			1.4	w/ wooden backing, weight w/ bag and wood. 18 turquoise tesserae in form of disk, over spines of pez de globo, south of copal, under stone scraper.
55	13	2	141	tesserae	701	Centre	P15	1817			7.9	w/ tubular beads, wooden pieces, remains of bone, shell and copper bells. Weight w/bag. East of el.138, under the same stone scraper as above.
56	13	2	143	tesserae	244	Centre-N	P15	1819			4.5	w/ tubular beads, wooden pieces. Weight w/bag. North of el.141, under the same stone scraper as above.
57	13	2	152	tesserae		Centre-N						East of flint knife, just north of el.156.
58	13	2	155	tesserae		Centre-N						On the same flint as above. This flint points NE.
59	13	2	156	tesserae		Centre-N						On wood.

No.	Offering no.	Layer level	Element no.	Type of object	No. of object	Location	Material no.	Entry no.	Inventory no.	Size (cm)	Weight (g)	Notes & Contexts
60	13	2	157	tesserae	28	Centre	P15	1835			3.7	w/ wooden pieces, weight w/bag. Under skull mask, west of wooden claw.
61	13	2	161	tesserae		Centre-S						On the same flint as el.57.
62	13	2	172	tesserae		Centre-N						Under stone scraper and flint, north of el.143.
63	13	2	175	tesserae		Centre-N						Under stone scraper, west of bells.
64	13	2	180	tesserae		Centre-E						South of the head of the flint over which el.4 is scattered.
65	13	1	192	tesserae		Centre-S						Between wooden feline claw and fish remains.
66	13	1	200	tesserae		NE						On scales of fish, under shell disk.
67	13	1	205	tesserae	164	Centre-E	P15	1886			4.8	w/ maguey thorns, wooden pieces. Weight w/ bag. Under the head of the flint over which el.4 is scattered.
68	13	1	206	tesserae	16	Centre-E	P15	1887			2.2	w/ copal, weight w/ bag. North of el.205, under the head of the flint over which el.4 is scattered.
69	13	1	208	tesserae	71	Centre-E	P15	1889			3.3	Weight w/ bag. Dispersed w/ fish remains, under conch shells and bells.
70	13	1	210	tesserae		Centre-N						Under the flint over which el.155 is scattered.
71	13	2	213	tesserae		NE						Under fish remains and flint, north of the stone scraper w/ turquoise (el.5).
72	13		n (CRIBA)	tesserae								Sieved.
73	17	2	19	wooden object	1	Centre-E	P14	1206	10-264839	L2.1 W1.6 Th1.1	2.3	Probably it originally forms a cylinder, now missing the other extreme. North of flint knife pointing east.
74	17	2	19	tesserae	69	Centre-E	P14	1206		< 0.6	0.55	Under Xiuhtecuhtli, on the same flint as above.
75	17		20	small pectoral	1	?	P14	1207	10-253307	L5.7 W2.4 Th1.5	3.5	Half of tesserae are missing.
76	17	1	23	tesserae		Centre-E		1211				On stone scraper, under Xiuhtecuhtli. El. 23, 32, 33 are on the same scraper.
77	17	1	26	small pectoral	1	Centre-E	V1	1214		L4.9 W3.1 Th0.2	3	The extreme of one of the bars is missing. Behind (under) the flint pointing SE, which is under the flint w/ el. 19.
78	17	1	26	tesserae	44	Centre-E	P14	1214		< 0.8	2.1	w/ 1 grey flint and 1 copal fragments, and wooden remains. The same location as above.
79	17	1	30	tubular mosaic	1	Centre-E						Tubular mosaic of turquoise with wooden backing. Between the same flint as above and the scraper w/ el.23, 32 & 33.
80	17	1	32	tubular mosaic	1	Centre-E						Tubular mosaic of turquoise with wooden backing. On the same scraper, under Xiuhtecuhtli.
81	17	1	33	copal object	1	Centre-E	P14	1221		1.7 x 2.0	2.4	w/ copal backing. On the same scraper, under Xiuhtecuhtli. It presents traces of shave around the edges. Colour of stone varies from green, wine red to brown. Back side shows the trace of incrustation. Ventral side has one mosaic of turquoise.
82	17	2	87	preformed flint	1	Centre-S		1312	10-264537	L22 W11 Th3.8	814	The largest tessera (?), surrounded by smaller turquoise tesserae, shows circular incisions. South of (or under) Tlaloc jar, north of the flint (el.100).
83	17	2	96	tesserae	59	Centre-S	P14	1325		< 0.3	1.6	Between 2 caracikes xancus shells, east of the preformed flint (el.87), northeast of the flint (el.100).
84	17	2	100	flint knife	1	Centre-S	P3	1329	10-251658	L23.6 W5.75 Th1.4	236.7	Light brown flint. One side shows some turquoise tesserae near the edge. Over shells, bells and sea urchin, over another flint, south of el.87.
85	17	2	100	tesserae	6	Centre-S	P14	1331		< 0.4	0.2	On the flint (el.100)?
86	17	2	149	tesserae		Centre-S	P14	1391		< 0.3	4.3	w/ wooden backing, fragments of copal, sutcco, turquoise and spines of urchin. Weight w/ bag. On wood with copal remains, between two flints (el.100 & 156).
87	17		154	tesserae	94	?	P14	1396		< 0.9	0.9	
88	17	2	156	flint knife	1	Centre-S		1398				Flint w/ copper bells, 2 plaques of shell and copal, and turquoise fragments, pointing E. East of el.100, south of Tlaloc jar. Under shell disk and atlatl, over sawfish with copper bells.
89	17	2	165	fragments		SE		1412				On flint knife with face (Tecpatl) pointing SE, southeast of Xiuhtecuhtli.
90	17	2	173	fragments		SE		1422				Under skull jaw, south of the flint w/ el.156.

No.	Offering no.	Layer level	Element no.	Type of object	No. of object	Location	Material no.	Entry no.	Inventory no.	Size (cm)	Weight (g)	Notes & Contexts
91	17	2	175	tesserae		NE	P14	1422		< 0.4	1.6	w/ copal fragments, weight w/ bag. Surrounded by skull (north), stone brazier w/ ribbon (west), and flint knife (southeast) pointing NW.
92	17		181	tesserae	267	?	P14	1458		< 0.6	8.8	w/ copal & wooden fragments, possibly backing of turquoise tesserae.
93	17	1	201	copal figurine	1	NE	P14	1421		1.5 x 1.6	1.2	w/ fragments of mortar. Weight w/ bag. 69 turquoise tesserae attache on the figurine, found under skull of northeast corner.
94-95	17	1	201	small disks	2	NE	P14	1490		D1.5 Th0.6	0.7	w/ wooden backing and bells. Central part is of copal. Under the same skull as above.
96	17	1	208	fragments		NE		1519				Over copal, under flint knife (pointing NE) and the same skull as above.
97	17	2	210	tesserae	151	Centre-S	P14	1521		< 0.7	6.5	w/ 2 fragments of mother-of-pearl. Weight w/ bag. There are 2 groups of turquoise tesserae, associated each other. South of stone scraper, east of brain coral.
98	17		H (CRIBA)	tesserae	67		P14	1531		< 0.6	1.5	w/ 1 fragment of grey obsidian. Sieved.
99	17			preformed flint	1		P8		10-269215	L14 W8.5 Th5		Turquoise tesserae glued on the stone.
100	20	6	1	tesserae		Centre-E						w/ wooden backing. Found with 4 bells. North of penate figure and noseplug. El. 1, 4 & 5 may have formed a single wooden disk with turquoise mosaic.
101	20	6	2	tesserae	2	Centre-S	P5	1090				w/ wooden backing. South of Xiuhtecutli.
102	20	6	4	tesserae		Centre-E	P5	1092				Same as el. 1.
103	20	6	5	tesserae	124	Centre-E	P4	1094		< 0.5	2.1	Weight w/ bag. Same as el. 1.
104-105	20	6	11	wooden objects	2	Centre-S	P4	1100		2.7 x 1.2/ 2.7 x 1.5		Some turquoise tesserae and 2 small wooden pieces covered with turquoise tesserae. On flint north of Xiuhtecutli and skull.
106	20	6	11(A)	tesserae		Centre-S	P5	1101		< 0.9	2.6	Weight w/ bag. Same as above (el. 11).
107	20	4	44	tesserae	98	SW	P4	1165		< 0.8	1.7	Between Mezcala mask and the copal base of flint knife (pointing NW). Found with a circular incrustation of obsidian.
108	20	4	45	tesserae		SW	P5	1166		< 0.6	1.2	El. 44, 45 & 120 may have formed a single disk. P5 contains a considerable number of greenstone beads.
109	20	2	120	tesserae	498	SW	P5	1540		< 1	8.6	Weight w/ bag. West of Mezcala mask, under the copal base of the same flint as above.
110	20	5	N	tesserae	20	Centre-S	P5	1157		< 0.4	0.7	w/ wooden fragments, weight w/ bag. West of turtle shell which lies just under the Mezcala mask and the flint associated with el. 44 & 45. Found with greenstone beads, shells, caracols and sand.
111	20	4	Q	tesserae	231	Centre	P4	1182		< 0.6	4.4	Weight w/ bag. Under obsidian Xiuhcoatl which is placed west of Xiuhtecutli.
112	20	3	U	tesserae		Centre	P5	1619		< 0.7	1.5	Surrounded by sawfish (north), turtle shell (east), and flint knife (west, pointing N).
113	20	5	Z	tesserae	376	NE	P5	1541		< 0.5	4	Weight w/ bag. Together with el. Q, el. U may have formed a single object. Found over the mask (el. 77).
114	2			beads	7		P1		10-263013 0/7	D2.9 Th1.6	0.1	w/ wooden pieces, weight w/ bag. Dispersed in the 5th level.
115	77			tesserae	6		P1				1.5	Colour varies from green to white.
116	3		CAJA 1	tesserae	32		P1			< 2	4	Weight w/ bag. P1 contains a flint point and greenstone beads.
117	3		CAJA 2	tesserae	10		P1				0.9	Burned turquoise. Weight w/bag.
118	3		CAJA 3	tesserae	185		P1			< 1.7	5	Burned turquoise. Weight w/bag.
119	3		CAJA 4	tesserae	37		P1			< 1	2.5	Burned turquoise. Weight w/bag.
120	3		CAJA 5	tesserae	92		P1			< 0.9	3.5	Burned turquoise. Weight w/bag.
121	3		CAJA 6	tesserae	26		P1			< 0.8	2.5	Burned turquoise. Weight w/bag.
122	3		CAJA 7	tesserae	20		P1			< 1.3	2.8	Burned turquoise. Weight w/bag.
123	3		CAJA 8	tesserae	156		P1			< 0.8	4.5	Burned turquoise. Weight w/bag.
124	3		CAJA 9	tesserae	401		P1			< 0.9	8.8	Burned turquoise. Weight w/bag.
125	3		CAJA 10	tesserae	23		P1			< 1.5	3	Burned turquoise. Weight w/bag.

No.	Offering no.	Layer level	Element no.	Type of object	No. of object	Location	Material no.	Entry no.	Inventory no.	Size (cm)	Weight (g)	Notes & Contexts
126	3		CAJA 11	tesserae	61		P1			< 0.9	3.4	Burned turquoise. Weight w/bag.
127	3		CISTA 3	tesserae	440		P1			< 1.5	5.5 + 25.6	Burned turquoise. Weight w/bag.
128	5		56	fragments	4		P1	3(CAJA 2)				w/ green stone beads.
129	5		BLQ.12N	fragments	2		P1					w/ green stone beads.
130	5		CISTA 5, BLQ.5	fragments			P1					w/green stone beads.
131	5		CISTA 5, CAJA 11	fragments			P1					w/green stone beads.
132	37			beads	22							Together with 8 beads of greenstone. Inside the funeral vessel there are human bones, a flint knife, 4 gold beads, 20 greenstone beads, and 30 turquoise beads, those beads which may have formed a single necklace.
133-134	CA	4		small disks	2	NE						Wooden disks with turquoise mosaics. Together with Mezcala style greenstone mask and 1 obsidian curved knife, under the compound of obsidian mask with 2 shell helicoidal ear ornaments and 1 shell pendant surrounded by 12 caracol beads.
135	CA	3		small disk	1	NW						Wooden disk with turquoise mosaics found beside silex knife.
136	CA	2		small disk	1	SW						Wooden disk with turquoise mosaics. Together with a group of copper bells and 1 wooden fragment with a perforation in the centre.
137	98		139	tesserae	13	?	V1	8124		< 0.3	2.5	w/ wooden pieces. Weight w/ bag.
138	98	3	221	flint knife	1	NE	P11	8283	10-264282	L23.5 W7.4 Th1.1	257.5	Pointing SE. Face on both sides and turquoise tesserae form an eyebrow.
139	98		234	tesserae	41	?	P9	8296	10-274797			
140	98	3	317	tesserae		Centre-W	P2	8367		< 0.7	3.7	w/ sand. Weight w/ bag. P2 contains arrow points, greenstone beads, scepter, obsidian pestle.
141	98	3	458	tesserae		Centre	P2	8485		< 0.7	1.8	w/ wooden pieces. Weight w/ bag.
142	98	3	459	tesserae	48	Centre	P2	8486		< 0.5	1.8	Weight w/ bag.
143	98		460	tesserae		?	S1	8487		< 0.65	33.5	w/ copal and sand. Weight w/ bag.
144	98	3	461	tesserae	34	Centre-N	P2	8488		< 0.8	1.2	Weight w/ bag.
145	98	4	467	tesserae	17	SW	P2	8491		< 0.5	0.7	Weight w/ bag.
146	98	3	484	tesserae	61	SW	P2	8500		< 0.6	1.65	Weight w/ bag.
147	98		498	tesserae	1	?	P2	8487				
148	98	2	500	tesserae	30	SW	P2	8512		< 0.4	0.2	Weight w/ bag.
149	98		504	tesserae	26	?	P2	8514				
150	98	1	511	tesserae	45	?	P2	8518		< 0.8	1.4	Weight w/ bag.
151	98	1	528	tesserae	6	NE	P2	8525		< 0.7	0.6	Weight w/ bag.
152	99	1 & 2		disk								
153	48	2	133	disk	1	Centre-N	P7	4410	10-220333	D32		Turquoise and shell mosaics on wooden backing. The central part is covered with turquoise mosaics and surrounding outer circles contain larger mosaics of conch shell.
154	48	2	156	disk	1	Centre-N				D32		Similar disk as el.133.
155	C3	3	91	serpentine knife	1	Centre-N	P59	5174	10-253044	L36 W8 Th1.5		Silex knife with turquoise mosaics and pyrite inlays. Associated with a groupe of masks and feline bones.

No.	Offering no.	Layer level	Element no.	Type of object	No. of object	Location	Material no.	Entry no.	Inventory no.	Size (cm)	Weight (g)	Notes & Contexts
156	K		14	ornament	1		P12	6263	10-262945	4.1 x 4.2, Th0.11	5	Weight w/ bag. It forms a Xihuitl glyph.
157	V		362	tesserae	3		M3			< 0.7	0.65	Weight w/ bag.
158	V		625	tesserae	2		P2	10803		< 0.9	0.95	Weight w/ bag.
159	*MSD			tesserae	230		P3			<1	4.6	Weight w/ bag.
160	MSD			tesserae			P3					Weight w/ bag.
161	MSD			tesserae	130		P3					Weight w/ bag.
162	MSD			small cylinder	1		P6			L3 D1.2	0.65	Weight w/ bag.
163	MSD			plaque	1				10-263408	LS.5 W2.8 Th0.1	4	Unknown backing material.
164	MSD			wooden object-1	1				10-263414 1/1	L2.8 D0.9	0.9	
165	MSD			wooden object-2	1				10-263414 1/1	L4.1 D1.1	0.7	

Appendix 5 List of turquoise objects from the offerings of the Templo Mayor

1. Offerings on the Huitzilopochtli side and the central section

Complex A: Offerings 1, 6, 60, 11, 13, 17, 20

Complex Q: Offerings 2, 77

Complex D: Offerings 3, 5

Complex E: Offering 37

Complex C: Offerings CA, 98

Isolated: Offering 99

2. Offerings on the Tlaloc side

Complex F: Offering 48

Complex B: Chamber 3

3. Offerings within the sacred precinct

Complex H: Offering K (Building A)

Isolated: Offering V (Casa de las Aguilas)

4. Materials without data

Notes

1) Total of 138 offerings (1 to 107 + A to X + Chamber 2 & 3 + B1 B2 CA E1).

Offerings 101 to 107 (all from Tlaloc side) have not yet been catalogued.

2) Chamber 1 = Offering 5

3) Total number of the entries of turquoise objects: 165

4) w/ means 'with'.

1. Offerings on the Huitzilopochtli side and the central section

COMPLEX A

OFFERING 1

Stage IVb (1469-1481)

1) Flint knife

Material no: P3

Material: Flint

Inventory no: 10-252837

Element no: 26

Entry no: 270-78

Number of object: 1

Size: L 21.5 W 7.2 Th 1.1 cm

Weight: 206 g

Note: Sacrificial knife of green flint in the thin lanceolate form.

The dorsal side presents applications of quadrangular pieces of mother-of-pearl representing teeth, two caracoles, one tessera of turquoise, and two copper bells. These applications are observed all along the object. In the one-third of the dorsal side presents cortex. Found with one more flint without decoration.



2) Preformed flint

Material no: P7

Material: Flint

Inventory no: -

Element no: 68

Entry no: 273-78

Number of object: 1

Size: L 15 W 9 Th 4.5 cm

Weight: 466.7 g

Note: Remains of wood and tesserae of turquoise are observed

attached with the object. Found with 4 more preformed knives.



3) Tesserae

Material no: P1

Material: Turquoise

Inventory no: -

Element no: 82

Entry no: -

Number of object: 1

Size: -

Weight: -

Note: -

4) Tesserae

Material no: P1

Material: Turquoise

Inventory no: 10-252817

Element no: 97.5

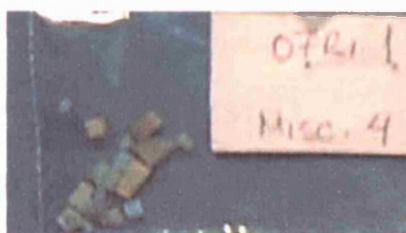
Entry no: Misc 4

Number of object:

Size: < 0.5 cm

Weight: 0.6 g (with bag)

Note: -



5) Tesserae

Material no: P1

Material: Turquoise

Inventory no: -

Element no: 110

Entry no: -

Number of object: 4

Size: -

Weight: -

- Note: -
- 6) Tesserae
 Material no: P1
 Material: Turquoise
 Inventory no:
 Element no: 129A
 Entry no: -
 Number of object: 527
 Size: -
 Weight: -
 Note: -
- 7) Tesserae
 Material no: P1
 Material: Turquoise
 Inventory no: -
 Element no: P
 Entry no: -
 Number of object: 1
 Size: -
 Weight: -
 Note: -
- 8) Tesserae
 Material no: P1
 Material: Turquoise
 Inventory no: -
 Element no: CAJA 6
 Entry no: -
 Number of object: 33
 Size: -
 Weight: -
 Note: -
- 9) Tesserae
 Material no: P1
 Material: Turquoise
 Inventory no: -
 Element no: CISTA 1
 Entry no: -
 Number of object: Indeterminate
 Size: -
 Weight: -
 Note: -
- 10) Tesserae
 Material no: P1
- Material: Turquoise
 Inventory no: -
 Element no: CAJA 7
 Entry no: -
 Number of object: -
 Size: -
 Weight: -
 Note: -
- 11) Tesserae
 Material no: P1
 Material: Turquoise
 Inventory no: -
 Element no: CAJA 10
 Entry no: -
 Number of object: -
 Size: -
 Weight: -
 Note: -
- 12) Tesserae
 Material no: P1
 Material: Turquoise
 Inventory no: -
 Element no: CISTA 1
 Entry no: -
 Number of object: 1
 Size: -
 Weight: -
 Note: -
- 13) Tesserae
 Material no: P1
 Material: Turquoise
 Inventory no: -
 Element no: CISTA 1
 Entry no: -
 Number of object: 4
 Size: -
 Weight: -
 Note: -
- 14) Tesserae
 Material no: P1
 Material: Turquoise
 Inventory no: -
 Element no: CISTA 1
 Entry no: -
 Number of object: 10

Size: -
Weight: -
Note: -

- 15) Tesserae
Material no: P1
Material: Turquoise
Inventory no: -
Element no: Misc.
Entry no: -
Number of object: 1
Size: -
Weight: -
Note: -

- 16) Tesserae
Material no: P1
Material: Turquoise
Inventory no: -
Element no: -
Entry no: -
Number of object: 1498 tesserae of greenstone and turquoise. A total of 1497 turquoise tesserae and one circular mosaic of greenstone (D. 0.8 cm).
Size: < 1.3 cm
Weight: 14.1 g (15.4 g with bag, bone fragments)
Note: Associated with some fragments of conch shell and bone.



OFFERING 6

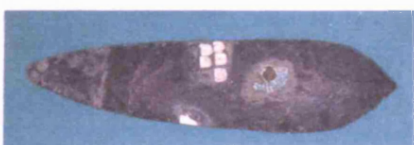
Stage IVb (1469-1481)

- 1) Flint knife
Material no: P4
Material: Flint
Inventory no: 10-168813
Element no: 80
Entry no: 367
Number of object: 1
Size: L 27.2 W 7.9 Th 1.4 cm
Weight: 236.2 g
Note: Eyebrows of turquoise mosaics on both sides.



- 2) Small disk
Material no: -
Material: Turquoise
Inventory no: -
Element no: 86
Entry no: -
Number of object: 1
Size: -
Weight: -
Note: Turquoise fragments found in form of disk.
- 3) Flint knife
Material no: -
Material: -
Inventory no:
Element no: 99
Entry no: 1124
Number of object: 1
Size: -
Weight: -
Note: Turquoise fragments attached on the object.
- 4) Flint knife
Material no: P1
Material: Flint

Inventory no: -
Element no: 100
Entry no: 134
Number of object: 1
Size: L 24.5 W 6 Th 1.3 cm
Weight: 240.2 g
Note: Reddish-brown flint in the thin lanceolate form, with a face on the dorsal side. The face has an eye of pyrite, teeth of five pieces of conch shell, and round eyebrow of thirty-eight turquoise tesserae.



- 5) Pendant
Material no: -
Material: Shell
Inventory no: -
Element no: 102
Entry no: 398
Number of object: 1
Size: -
Weight: -
Note: Turquoise tesserae attached on the object.
- 6) Plaque
Material no: 1
Material: Conch shell
Inventory no: -
Element no: 127
Entry no: -
Number of object: -
Size: -
Weight: -
Note: Turquoise tesserae attached on the object.
- 7) Small disks
Material no: -
Material: Wood with turquoise and pyrite
Inventory no: 10-252070 0/2

Control: 6-136-375
Element no: 136
Entry no: 375
Number of object: 2
Size: D 1.5/1.8 Th 0.2/0.3cm
Weight: 1.1/0.9 g
Note: It presents a circular pyrite inserted at the centre with irregular turquoise tesserae around the centre in radiant form.

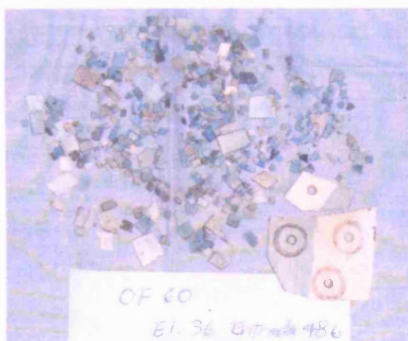
- 8) Small disk
Material no: -
Material: -
Inventory no: -
Element no: 140
Entry no: 640
Number of object: 1
Size: -
Weight: -
Note: Turquoise fragments in form of disk.
- 9) Figurine
Material no: -
Material: Copal
Inventory no: -
Element no: 147
Entry no: 523
Number of object: 1
Size: -
Weight: -
Note: Turquoise tesserae attached on the object.
- 10) Fragments
Material no: -
Material: Turquoise
Inventory no:
Element no: CRIBA
Entry no: 700
Number of object:
Size: -
Weight: -
Note: Sieved fragments.

OFFERING 60

Stage IVb (1469-81)
(Sieved remains only.)

1) Tesserae

Material no: P11
Material: Turquoise
Inventory no: -
Element no: 36
Entry no: 486
Number of object: 3+
Size: -
Weight: 6.9 g (with bag) + 1.3 g (3 pieces with bag)
Note: -



2) Tesserae

Material no: P11
Material: Turquoise
Inventory no: -
Element no: 36
Entry no: 4896
Number of object: -
Size: -
Weight: 3.7 g (with 2 bags)
Note: -

3) Fragments

Material no: -
Material: Turquoise
Inventory no: -
Element no: 38
Entry no: -
Number of object: -
Size: -
Weight: -
Note: -

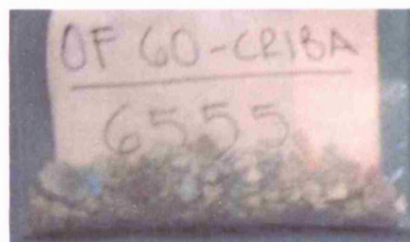
4) Tesserae

Material no: P10
Material: Turquoise
Inventory no: -
Element no: 53
Entry no: 4903
Number of object: 40
Size: -
Weight: 1.2 g (with bag)
Note: Found with greenstone beads.



5) Tesserae

Material no: P10
Material: Turquoise
Inventory no: -
Element no: CRIBA
Entry no: 6555
Number of object: 620
Size: < 1.2 cm
Weight: 7.7 g (with bag)
Note: Found with greenstone beads.



OFFERING 11

Stage IVb (1469-1481)

(Found with a massive amount of greenstone beads.)

1) Small disk

Material no:

Material: Wood with turquoise

Inventory no: 10-263409

Control: 11-9-261

Element no: 9

Entry no: 261

Number of object: 1

Size: D 4.5 Th 0.5 cm

Weight: 5 g

Note: It is a wooden disk in fragments with incrustation of turquoise tesserae of irregular forms.



2) Small disk

Material no: P9

Material: Turquoise and wood

Inventory no: -

Element no: 17

Entry no: 333

Number of object: 84

Size: < 1.2 cm

Weight: 2.0 g (with bag)

Note: Eighty-four quadrangular tesserae of turquoise in form of disk, found with pieces of wood, possibly original backing.

3) Tesserae

Material no: P5

Material: Turquoise

Inventory no: -

Element no: 26

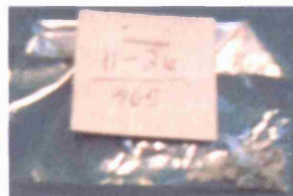
Entry no: 465

Number of object:

Size: < 0.9 cm

Weight: 1.3 g (with bag)

Note: -



4) Flint knife

Material no: -

Material: Silex with copal, shell, pyrite, turquoise

Inventory no: 10-162932

Element no: 28

Entry no: 452 (454?)

Number of object: 1

Size: L 27 W 7 Th 1.5 cm

Weight: 348.6 g

Note: It has faces on both sides, with eyes of pyrite on shell, eyebrows of turquoise tesserae, and four teeth of conch shell. The flint is incrustated on an irregular-shaped base of copal.



5) Small disk

Material no: -

Material: -

Inventory no: -

Element no: 55

Entry no: -

Number of object: -

Size: -

Weight: -

Note: Turquoise tesserae attached on the object, but in fragments.

6) Tesserae

Material no: P9

Material: Turquoise

Inventory no: -

Element no: 60

Entry no: 525

Number of object: 401

Size: < 0.9 cm

Weight: 8.5 g (with bag & pieces of copal)

Note: Found with pieces of wooden backing and copal.



7) Small disk

Material no: P9

Material: -

Inventory no: -

Element no: 77

Entry no: 583

Number of object: 70

Size: < 0.7 cm

Weight: 2.2 g (with bag & pieces of wood)

Note: Turquoise tesserae found in form of disk, with pieces of wood.



8) Object (nose ornament?)

Material no: -

Material: Shell with turquoise

Inventory no: 10-263407

Element no: 122

Entry no: 694

Number of object: 1

Size: L 2.5 W 1.5 Th 0.2 cm

Weight: -

Note: One side of the object has turquoise tesserae incrustated. This looks very similar to the nose ornaments dedicated to the dead warriors (cf. El. 156, Figure 8.7).

9) Tesserae

Material no: P9

Material: Turquoise

Inventory no: -

Element no: 155

Entry no: 811

Number of object: 141

Size: < 1.3 cm

Weight: 5.2 g (with bag & pieces of wood)

Note: Found with pieces of wood.



10) Tesserae

Material no: P9

Material: Turquoise

Inventory no: -

Element no: 156

Entry no: 812

Number of object: 372

Size: -

Weight: 7.6 g (with bag, mainly copal)

Note: Found with copal.

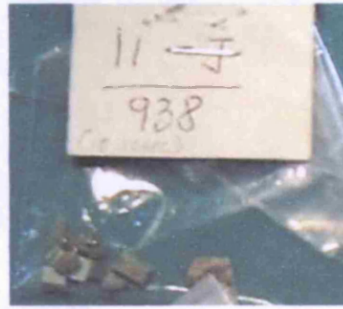


- 11) Object (nose ornament?)
 Material no:
 Material: Shell with turquoise
 Inventory no: 10-263407
 Element no: 156
 Entry no: 812
 Number of object: 1
 Size: L 2.5 W 1.5 Th 0.2 cm
 Weight: -
 Note: One side of the object has turquoise tesserae incrustated.



Elements 156, 122

- 12) Tesserae
 Material no: P9
 Material: Turquoise
 Inventory no: -
 Element no: J
 Entry no: 938
 Number of object: 10
 Size: < 0.8 cm
 Weight: 1.5 g (with bag & copal)
 Note: Ten quadrangular tesserae of turquoise found with two fragments of copper.



- 13) Tesserae
 Material no: P9
 Material: Turquoise
 Inventory no: -
 Element no: K
 Entry no: 974, 982, 983, 985
 Number of object: 98
 Size: < 1 cm
 Weight: 1.3 g (3 g with bag & a piece of copal)
 Note: Found with copal.



OFFERING 13

Stage IVb (1469-1481)

1) Small disk

Material no: P15

Material: Wood with turquoise

Inventory no:

Element no: 4

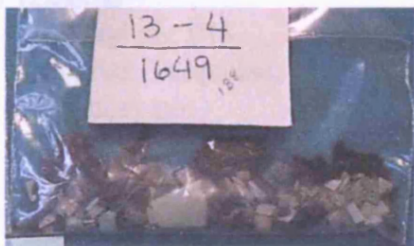
Entry no: 1649

Number of object: 1

Size: -

Weight: 4.4 g (with bag & pieces of wood)

Note: A total of 188 turquoise tesserae in form of disk, found with pieces of wooden backing.



2) Fragments

Material no: -

Material: Turquoise

Inventory no: -

Element no: 5

Entry no: -

Number of object: -

Size: -

Weight: -

Note: -

3) Tesserae

Material no: P15

Material: Turquoise with copal

Inventory no: -

Element no: 24

Entry no: 1677

Number of object: 32

Size: -

Weight: 2.2 g (with bag & copal)

Note: Found with copal.



4) Tesserae

Material no: P15

Material: Turquoise

Inventory no: -

Element no: 26

Entry no: 1680

Number of object: 8

Size: -

Weight: 1.3 g (w/bag & clay)

Note: Found with two balls of clay, pigment, seeds, and fish & bird bones.



5) Flint knife

Material no: -

Material: Flint

Inventory no: -

Element no: 55

Entry no: -

Number of object: 1

Size: -

Weight: -

Note: It presents an eyebrow of turquoise, incrustated on a base of bells, and placed on the burned soil.

6) Tesserae

Material no: P15

Material: Turquoise

Inventory no: -

Element no: 57

Entry no: 1722

Number of object: 32
Size: -
Weight: 2.5 g (with bag & bones)
Note: Found with pieces of animal bones and wooden backing.



- 7) Tesserae
Material no: P15
Material: Turquoise, wood
Inventory no: -
Element no: 100
Entry no: 1772
Number of object: 40
Size: -
Weight: 2.15 g (with bag & pieces of wood)
Note: Found with pieces of wood.

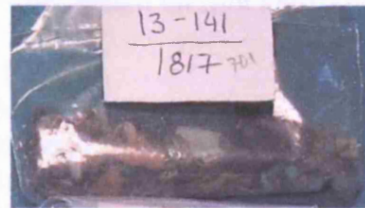


- 8) Tesserae
Material no: -
Material: Turquoise
Inventory no: -
Element no: 137
Entry no: -
Number of object: -
Size: -
Weight: -
Note: Found in the area of fish remains.

- 9) Small disk
Material no: P15
Material: Wood with turquoise

Inventory no: -
Element no: 138
Entry no: 1814
Number of object: 1
Size: -
Weight: 1.4 g (with bag & pieces of wood)
Note: Eighteen turquoise tesserae in form of disk, found with wooden backing.

- 10) Tesserae
Material no: P15
Material: Turquoise
Inventory no: -
Element no: 141
Entry no: 1817
Number of object: 701
Size: -
Weight: 7.9 g (with bag & pieces of wood)
Note: Found with tubular beads and pieces of wood, and remains of bones, shell, copper bells.



- 11) Tesserae
Material no: P15
Material: Turquoise
Inventory no: -
Element no: 143
Entry no: 1819
Number of object: 244
Size: -
Weight: 4.5 g (with bag & pieces of wood)
Note: Found with tubular beads and pieces of wood.

Bibliography

Abbreviations

CONACULTA: Consejo Nacional para la Cultura y las Artes

FCE: Fondo de Cultura Económica

INAH: Instituto Nacional de Antropología e Historia

UNAM: Universidad Nacional Autónoma de México

SEP: Secretaría de Educación Pública

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