BALLCOURTS, COMPETITIVE GAMES AND THE EMERGENCE OF COMPLEX SOCIETY

by

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ABSTRACT

The processes that accompany the transition to social and political inequality have perplexed archeologists in their attempts to explain the emergence of complex society. Over the past decade, archaeological excavations in the Mazatán region of Chiapas, Mexico, has yielded new information on the processes surrounding this social and political transformation. Most recently, the earliest known ballcourt was discovered at the site of Paso de la Amada in the Mazatán region. This ballcourt predates all other known ballcourts by more than 500 years. For over 2500 years, ballcourts and the associated ballgame formed an integral part of religious, social, and political life of Mesoamerican complex societies. The tremendous success of the ballgame lies in its ability to act as a medium of social and political integration while simultaneously encouraging intense rivalry. This dissertation uses ballcourts and competitive games to address the larger question of how social and political inequality evolves. Using architectural, artifactual, and settlement pattern data, I argue that an emerging complex society was involved in the construction and use of the ballcourt at Paso de la Amada. I suggest that elites sponsored the ballcourt construction, enabling them to expand their regional networks and enhance their own social positions. I present evidence to support these claims, and review several existing models for the emergence of complex society in light of this discovery. I conclude that competitive games and gaming facilities, such as ballcourts, played a crucial role in the emergence of complex society in Mesoamerica and have significant implications for how this process is modeled.

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DEDICATION

To Chantal, who taught me how to pursue my dreams.

CHAPTER I

INTRODUCTION

In 1995, excavations at the Early Formative site of Paso de la Amada of the Mazatán region of Pacific Coastal Chiapas, Mexico, yielded the earliest known ballcourt in Mesoamerica, dating some 500 years earlier than previous ones. The existence of monumental architecture in one of Mesoamerica's earliest and largest villages raises significant questions regarding social evolution in this area of the world. For example, were Early Formative communities linked together in ritual or competitive interaction involving the ballgame? Did the ballgame cross-cut regional culture and society? Did this competition bring about social change and lead to the emergence of complexity in this coastal region? This dissertation adds new dimensions to the study of emerging complexity: competitive games and gaming facilities. The ballgame is examined as one of several media such as warfare and feasting which foment regional aggregation. Ballgames are unique in that their counterpart, the ballcourt, provides an archaeological corollary which can be used to monitor social and political change over time.

Ballcourts occupied a prominent place in the civic-ceremonial plazas of ancient Mesoamerican civilizations. More than just another stadium, the ballcourt was a sacred place, where mortals and gods competed. Ballgames, the main activity that took place in ballcourts, were tremendous spectacles witnessed by thousands. The popularity of the ballgame is accentuated by the fact that 16,000 rubber balls were sent each year as tribute to the Aztec capital of Tenochitlán (Codex Mendoza 1938). Entire fortunes were sometimes wagered on the outcome of a single game.

The prominence of ballcourts on the archaeological landscape has led to numerous hypotheses as to their form and function (see Scarborough and Wilcox 1991; Leyenaar 1992; Fox 1994). Most studies of ballcourts have focused on three major themes: ethnohistory of the ballgame, ballcourt iconography, or typologies of ballcourts. However, as Fox (1994) has noted, these approaches to ballcourts and the ballgame have become standardized in archaeology at the expense of understanding the ballcourt as a "lived space" (Fox 1994:1). As an alternative to traditional approaches, Fox has suggested that archaeologists examine the social and political functions of ballcourts within particular regional systems. To accomplish this objective, ballcourts must be viewed as important multipurpose activity centers, not solely as locations of ballgames. This entails an examination of the function of ballcourts as facilities of social integration.

One fascinating aspect of the ballgame is its longevity as an institution. Fox (1994:35) asserts that "the success of the ballgame as a pan-Mesoamerican tradition rested on its ability to integrate and satisfy a variety of social needs." Understanding the origins of the ballgame may provide important clues to the nature of early complex society in Mesoamerica. Fox (1994:236) links the creation of a formal facility, the ballcourt, to Clark and Blake's (1994) aggrandizer model. He hypothesizes that sponsorship of ballgames and feasts within the ballcourt would have permitted individual aggrandizers to make strong claims to power, thereby enhancing their social position. At the same time, the aggrandizer would have been able to assert control over the supernatural by staging dramatic rituals and conflicts in the ballgame itself (Fox 1994:237-238).

Researchers investigating the role of the ballgame in Mesoamerican society have postulated strong links between the distribution of ballcourts and the centralization of political authority (Santley *et al.* 1991; de Montmollin 1997). In this view, elite competition is seen as impetus for the construction and use of ballcourts in a number of regions. The ballgame may also have been used by elites to acquire and maintain new territories (Santley *et al.* 1991:20), or it may indicate a network-based strategy of social interaction (Blanton *et al.* 1996).

Thus, studies of ballcourts, and the activities that took place within them, provide a means of exploring connections between polities in the Mazatán region and surrounding regions. Information on residential architecture, figurine production, and ceramic consumption can be examined as it relates to ballcourt construction and use. This re-evaluation may lead to a new understanding of what types of prerequisites and conditions fomented structural changes in Early Formative societies.

The Problem of the Origins of Social and Political Complexity

The origin of hereditary inequality has long been of interest to society. At the heart of the matter lie two fundamental questions: why and how did institutions of social and political inequality arise? The answers, of course, are wide and varied, and there is a tendency to romanticize equality—to imagine an earlier state of humanity where people lived as equals. Indeed, much of the political history of modern states has been concerned with the achievement of equality. The processes by which societies were transformed from egalitarian societies are therefore directly relevant to the current social arrangements we see today. The terms, as they relate to this discussion, will be defined in the following chapter.

Recent work on this question has produced some interesting hypotheses on the mechanics of the process (see, for example, Price and Feinman 1995; Arnold 1996). However, only a few studies have attempted to use archaeological examples (Hayden 1992; Clark 1994). Currently, there are only a few areas in the world that possess the kinds of archaeological data necessary to address questions about the origins of social and political complexity. In Mesoamerica, the Soconusco region of coastal Chiapas, Mexico, has provided archaeologists with one of the earliest examples of an emerging complex society (Figure 1.1). By 1550 bc, the Soconusco was occupied by sedentary groups who inhabited small and large villages dispersed in a lush and productive, tropical lowland environment. From 1550 to 1000 bc, complex societies evolved out of previously egalitarian groups in this coastal setting.

Figure 1.1 General map of Mesoamerica.

Investigators have defined an archaeological sequence, known as the Mokaya Tradition (Clark 1991; Clark and Blake 1989), characterized by sophisticated ceramics, long-distance trade, the construction of both large and small residential structures, and the practice of a mixed subsistence economy, including hunting and fishing in the surrounding swamps and estuaries (Blake 1991; Clark 1994; Clark and Blake 1994). Throughout this tradition, changes in artifact classes, architecture, and settlement patterns have been linked to the emergence of complex society (Blake 1991, 1993; Clark 1994; Clark and Blake 1994).

The present study examines the earliest phases of the Mokaya Tradition, known as the Barra (1550-1400 bc) and Locona phases (1400-1250 bc) (dates presented in this thesis are in uncalibrated radiocarbon time). Using recently discovered artifactual, architectural, and settlement pattern evidence, I propose that an emerging complex society was present in the Mazatán region by the latter part of the Barra phase. I discuss the process of social and political evolution within the context of an archaeological case. I then compare this case to others in Mesoamerica and discuss its implications for understandings of the origins and evolution of social and political complexity.

The existence of an Early Formative ballcourt at Paso de la Amada provides persuasive evidence that an emerging complex society was involved in its construction and use. The ballcourt is examined in light of its role as a place of ritual, social, and political integration. Ballcourts, ballgames, and associated competitive sporting rituals are viewed as integral components in the evolution of complex society in Mesoamerica. I discuss the implications

of this discovery for understanding the emergence of complex society. I then examine several extant models concerning the emergence of inequality in the Mazatán region using new evidence, such as the ballcourt, and data derived from previous seasons of excavation in the Mazatán region. Finally, I discuss in general terms the results presented in this dissertation for understandings of the processes of the transition from egalitarian to complex society.

By the time of the Spanish Conquest, Mesoamerica was a mosaic of complex societies that had evolved over the previous 2000 years. The variety of social and political forms, unknown to Europeans, presented a number of unique administrative and classificatory problems to the Spanish *conquistadores*—problems that the indigenous inhabitants had already mastered. The challenges of rulership were substantial. More than ten million people lived in a quilt work of polities that stretched from coast to coast. A number of previous formulations of states and empires had tried with varying degrees of success to govern this vast territory and its diverse array of peoples. The roots of this complexity lie in a series of social and political transformations which occurred during the Early Formative period throughout Mesoamerica. How did these societies evolve such complexity from their egalitarian roots?

To answer this question one must look at the earliest settled villages in Mesoamerica and study their individual evolutionary trajectories. This approach has the advantage of looking at the processes, and not just the events, which shaped nascent inequalities into institutionalized hierarchies. Data relevant to this problem come from four distinct regions of Mesoamerica: the Valley of Mexico, the Valley of Oaxaca, the Gulf Coast, and the Soconusco. This study will focus on the Soconusco region of Chiapas, Mexico, where ongoing work over the past twenty years has significantly enhanced our understanding of the processes whereby complex societies emerged from previously egalitarian groups (Lowe 1975, 1977; Ceja Tenorio 1985; Blake 1991; Clark 1991, 1994; Lesure 1995). In particular, the site of Paso de la Amada has yielded a wealth of information on Early Formative architecture which Blake has summarized in several publications (Blake, Lesure, Feddema *et al.* 1993; see Blake, Clark, Voorhies *et al.* 1995 for a full discussion of chronology). Although these studies focus on Mesoamerica, they have implications for other regions as well.

Formal Ballcourts and Complex Society

The appearance of formal ballcourts occurred in tandem with the rise of complex societies in Southern Mesoamerica. Beginning in the Middle Formative (900-400 bc), ballcourts were principal features of several large sites in Chiapas (Agrinier 1991:176), as well as the Olmec centers of San Lorenzo and La Venta. By the Late Formative period, ballcourts were pan-Mesoamerican, present at every major center (and some minor sites) in Chiapas, the Maya Lowlands, the Valley of Oaxaca, Western Mesoamerica, Central Mexico, and likely the Gulf Coast. Thus, it appears that formal ballcourts were predominantly, if not exclusively, associated with complex societies at least at the chiefdom level. This association will be explored in more detail in following chapters. However, at this juncture it is useful to make the following observations:

1) Formal ballcourt constructions and associated paraphernalia were present in most Mesoamerican complex societies from the Middle Formative period until the Spanish Conquest.
2) The appearance of ballcourts lagged behind the emergence of complex society, at least in Western Mexico (Weigand 1991:73).
3) The form of ballcourts remained essentially unchanged across time and space (though construction materials varied).
4) By the Late Formative, ballcourts were pan-Mesoamerican and were prominent features of regional centers and occasionally lower order sites.

Building upon these observations, the remainder of this dissertation will explore the connection between complex societies, competitive games, and ballcourts.

The Ballcourt at Mound 7

Mound 7, covering an area of over 5500m^2, is the largest mound at Paso de la Amada and has always been an enigma at the site. Previous investigations, consisting of three small test pits by the Mazatán Early Formative Project in 1990, revealed mostly Barra and Locona phase ceramic deposits. The ceramic density, that is, the number of sherds per unit volume, was very low in these sondages. Thus, preliminary interpretations suggested that Mound 7 was either sporadically occupied (in contrast to the continuous occupation at Mound 6, the site of a sequence of large, residential structures) or represented a special-use area of the site.

In 1995, members of the Mazatán project returned to the site of Paso de la Amada to conduct extensive excavations at Mound 7. The goal was to expose and define any structural features in the mound. Surprisingly, these excavations revealed that Mound 7 was actually a ballcourt, dating to around 1400 bc or the late Barra/early Locona phase transition. It is this interpretation which will be explored here.

The interpretation of Mound 7 as a ballcourt also dictates that a variant of the Meso-american ballgame was played at Paso de la Amada. The construction of a formal ballcourt during the early Locona phase created an important public ritual space for the community at Paso de la Amada. Although little is known about Early Formative versions of the ballgame, it can be inferred from later variants that a strong element of conflict and competition—both real and ritualized—was involved in playing the game. The ballcourt at Paso de la Amada may have provided Mokaya villagers with an innovative method to interact in a competitive way over an entire region, while simultaneously providing them with a means of creating and maintaining community solidarity. If the ballcourt's construction and use were coordinated by an emerging elite class, then its presence at Paso de la Amada might indicate this community's ascending position in a regional hierarchy. Likewise, its abandonment by the Cherla phase suggests the decline of Paso de la Amada as a regional center and the shift of political power to another center.

Given the relationship already postulated between complex societies, ballgames, and ballcourts, I argue that the presence of a formal ballcourt at Paso de la Amada indicates that a complex society was likely present at the community by around 1500 bc. Clark (1994)

concludes on the basis of multiple lines of evidence that Mokaya villagers were organized in the form of a simple chiefdom by the late Locona phase and perhaps earlier. This designation creates a number of expectations, among them patronized craft specialization, ritual feasting, and hereditary inequality. It also implies that a system of interacting chiefs or other similar aggrandizers was operational during the Locona phase. I suggest that the expansion and elaboration of aggrandizer networks was expressed in the construction of the ballcourt at Paso de la Amada.

Additionally, I propose that the ballcourt at Paso de la Amada was most likely part of a network of similar courts. These Early Formative courts may have developed out of antecedents that lacked formal architectural features such as lateral mounds, benches, and alleys. Perhaps earlier variants, which may have developed during the Late Archaic period (3000-1800 bc), were flat earthen patios similar to the ethnographically-known ballcourts of West Mexico or the open-ended ballcourts of Durango and Zacatecas (Kelley 1991). While no such early courts have yet been identified in Mesoamerica, an I-shaped ballcourt-like structure has recently been reported at the site of Pampa de las Llamas-Moxeke, in the Casma Valley of Peru, dating to about 1800 bc (Pozorski and Pozorski 1995). Closer to the Mazatán region, an Archaic period architectural feature at Gheo-Shih, Oaxaca, dating roughly from 5000 to 4000 bc, has been described as a ritual dance floor (Drennan 1976:353-354; Flannery and Spores 1993:23-24). It consists of two parallel stone alignments, at least 20 meters long and 7 meters wide, swept clean of debris. An alternative interpretation has been offered by Karl Taube (1992) who suggests the feature at Gheo-Shih may represent a simple ballcourt.

It is important to separate the Mesoamerican ballgame, of which there are many variants, from its architectural counterpart, the formal ballcourt. Here I follow Gillespie (1991) and Fox (1994) in making the distinction between ballgames, which had a long tradition in Mesoamerica from the late Archaic period onward, and ballcourts, the formal architectural facilities that were constructed for already existing ballgames. The evidence presented here indicates that the Paso de la Amada ballcourt is the earliest one currently known in Mesoamerica. The construction of a formal ballcourt can therefore be linked to a process of nascent political inequality in the Mazatán region as a whole. In order to examine this process, I will look at elite sponsorship of public buildings, displays, and events.

Elite Sponsorship of Ballcourt Construction

The construction of a ballcourt during the early Locona phase created a new ritual space for the community at Paso de la Amada. The functional uses of this ritual space, like ballcourts in later times, were multiple. John G. Fox (1994) has suggested that ballcourts could have been used by emerging elites to make strong claims to power and assert control over supernatural forces (Fox 1994:236-238). He argued that ballcourts were important symbols of community identity, and that their construction was linked to the imposition of social order over ritual space (Fox 1994:39). In this view, a ballcourt provided a means of creating and reproducing community solidarity through shared participation in its construction. Simultaneously, elites could enhance their status and make power claims through their sponsorship of ritual events and feasts at the ballcourt. When viewed as ritual spaces, ballcourts functioned and were meaningful at multiple levels. The most important

of these functions in the Paso de la Amada case was the use of the ballcourt by emerging elites to solidify their claims to authority and to begin the process of transmitting both power and prestige to subsequent generations.

Through competitive sporting ritual and the strategic scheduling and playing of ballgames (what Fox (1994:236) has called the "sequencing" of ballgames), sponsors could attract more followers and thus promote the aggrandizement of their lineage and enhance the hereditary privilege of their descendants. Community rituals based at the ballcourt would have reinforced the connection between the sponsor and the ritual. If so, ballcourts would have provided sponsors with an innovative means of interacting with other aggrandizers in a competitive fashion. Using evidence from previous excavations at Paso de la Amada, I discuss the connection between the playing of ballgames, sponsorship of ballcourt construction, and the personal aggrandizement of its sponsor, specifically, a household or possibly a lineage based at Mound 6.

Research Plan of this Dissertation

The following discussion is organized to place the construction of the ballcourt at Paso de la Amada within the context of an emerging complex society. Toward this objective, two major themes are explored in this dissertation: (1) the evolution of complex society and (2) the role of ballcourts and ballgames as they pertain to complex society. Chapter 2 addresses issues of social complexity. I introduce and discuss egalitarian society and its evolutionary relationship with complex society, and I define the existing evolutionary frameworks for understanding complexity and outline some models proposed to account for its appearance. The ballcourt and ballgames are examined as part of larger elite strategies for power. The specific roots of Mesoamerican complex society are detailed, and ballcourts and ballgames are proposed as key components in the evolution of complex society.

In Chapter 3, I provide an overview of the Mesoamerican ballgame and ballcourts. Following a critical review of previous research, I discuss typologies and classifications of ballcourts, and establish the spatial and temporal distribution of various kinds of ballcourts. Associated ritual paraphernalia and the kinds of evidence used to study ballcourts are also explored. This discussion lays the groundwork to investigate my hypothesis that the ballcourt at Paso de la Amada was constructed by a complex society.

Details of the Mazatán case are presented in Chapter 4. I first summarize previous research in the region, as well as the research program of the Mazatán Early Formative Project. Paso de la Amada is presented as an Early Formative regional center. The high status residence at Mound 6 and regional settlement patterns are discussed. I then present the Mound 7 data which establish it as a ballcourt. The formal parameters of the ballcourt are also described. Finally, I consider Early Formative social dynamics within the Mazatán region.

Chapter 5 discusses elite competition and its role in the emergence of complex society. The competitive aspects of ballgames, and attendant gambling, are considered as significant variables in the transition. Using examples from a variety of societies, I argue that competitive games represent constant threats to egalitarian societies while providing aggrandizers with opportunities to enhance their own prestige. The potential of competitive

games to mask the inequalities they create is explored. I then discuss how aggrandizers create and perpetuate debt alliances and how elite competition is expressed in the genesis, elaboration, and proliferation of ballcourts. This chapter also outlines the costs of ballcourt construction and the type of labor organization it requires. I suggest that ballcourt construction is the exclusive domain of complex societies who possess the resources to finance such a project and the management to execute it. I cite a number of examples to support my claims while suggesting that aggrandizers could have expanded their influence through ballcourt construction and the playing of ballgames. Finally, I briefly describe the implications of ballcourt construction for models of the emergence of complex society.

In Chapter 6, the final chapter, I consider the connection between ballcourts, competitive games, and complex society, evaluate the Paso de la Amada test case of Chapter 4, and discuss the role of the ballgame and ballcourts in the transition from egalitarian to complex society. Finally, I conclude by giving my perspective on the evolution of complex society in Early Formative Mesoamerica and provide some suggestions for further research.

CHAPTER II

EVOLUTION OF COMPLEXITY

How did complex societies emerge from previously egalitarian ones? This broad question initially directed my research efforts toward the site Paso de la Amada. Because of its excellent preservation, this early site and contemporaneous sites in the surrounding region provide a unique opportunity to address questions about the origins of inequality. I say unique for good reason. In my quest for examples of emerging complex societies, I was surprised at how few models have been derived using archaeological information. Most explanations of this process are based upon functional interpretations and are derived from ethnographic observations of social organization. This standard approach was necessitated by the difficulty of developing analogs which "fit" archaeological data. Initially, it looked as though using ethnographic analogs was a perfect approach. All one had to do was derive the archaeological correlates of the ethnographic setting. However, in recent years, it has become clear that this approach falls short of explaining a growing number of archaeological cases (Feinman and Neitzel 1984; Yoffee 1993). The Mazatán case is one such example where an archaeological culture, the Mokaya, exhibited a number of traits which cross-cut the ethnographically-derived categories. That is, archaeological reconstructions of the Mokaya do not neatly fit the categories of "chiefdom" or "tribe".

In this chapter, I add a new dimension to this mix, that of ballcourts and competitive games as significant factors in the transition to complex society in Mesoamerica. This perspective has broad theoretical implications not only for Mesoamerica, but for the modeling process itself. Few models have considered the relationship between competitive games and society; none have addressed the role competitive games had in the evolution of social and political inequality. To examine this problem, I focus on two main topics: theoretical models of the emergence of complex society and the relationship between competitive sport and social power. In my analysis, I attempt to outline the major theoretical deficiencies of different models, rather than providing detailed summaries of each. This discussion begins with a brief explanation of a few salient models and their theoretical positions.

The lack of fit between the ethnographically-derived models and archaeological data has caused many scholars to rethink their assumptions about the emergence of complexity. This reconsideration has also been the driving force behind a number of new models of the process of emerging inequality (see, e.g. Hayden 1993, 1995; Clark and Blake 1994; Price and Feinman 1995). These researchers use archaeological data to develop general

evolutionary models. The major benefit of this exercise has been the identification of a number of key variables involved in the transition to complex society. I discuss these variables and their respective contributions in the emergence of complexity. I then summarize some of the current models and discuss their archaeological implications. I will evaluate them in Chapter 5 in light of the ballcourt information.

Egalitarian Societies and Equality

Anthropological models of human social organization take as a given the default condition of egalitarianism. The archaeological record suggests that well over 95 percent of human existence took place in an egalitarian setting. In general, this term is applied to those societies which have no inherited or ascribed differences in status among individual members of the same gender. By extension, this is often taken to mean that all members of an egalitarian society are equal. A quick glance at the literature on egalitarian societies will show that this is not the case. Indeed, most egalitarian societies have ongoing distinctions based upon age, sex, aptitude, and acquired status. Therefore, all egalitarian societies have at least some non-egalitarian aspects. However, these societies also have mechanisms to control or counter these tendencies (Cashdan 1980). As Blake and Clark (1999:58-59) have suggested the question is not so much how hereditary inequality arose but rather "how egalitarianism disappeared"?

In recent years, the concept of egalitarian society has been re-evaluated by a number of scholars (Arnold 1996a; Blake and Clark 1999; Cashdan 1980; Collier and Rosaldo 1981; Feinman 1995; Flanagan 1989; Hayden 1995; Plog 1995). The consensus of these studies (if the notion of consensus can be used here) is that egalitarian societies encompass a diverse array of hierarchies. Feinman (1995:261) notes that, "these contemporary perspectives question the existence of truly egalitarian social forms." This view presents a radical departure from the traditional view where egalitarian societies were composed of non-hierarchical units.

As Flannery and Marcus (1993:263) observe, egalitarian societies have strong ideologies of equality among members—ones which must be overridden before complexity emerges. This underlying ideology, often termed the egalitarian ethic or ethos, is a powerful component of all egalitarian societies. However, this ethos also persists, even thrives, within stratified societies. The ideological hurdle for transegalitarian societies lies in the rationalization of wealth accumulation and hereditary transmission of that wealth (Flannery and Marcus 1993:263). A new ideology must emerge which addresses the unequal distribution of goods, land allocation, and the like. Unfortunately, recognizing ideological shifts in the archaeological record is difficult. As is often the situation, ethnographic examples must be used to provide analogs for archaeological cases. Despite its imperfections, more research directed toward the role of ideology is needed in order to understand how new ideologies are created within existing egalitarian frameworks and how they may be detected in the archaeological record. I take up this point later in the chapter.

Definition of Terms

Like other theoretical issues, much of the debate concerning the origins of social and political complexity centers on definitions. The anthropological literature is replete with references to the various forms of social organization, both extant and prehistoric, throughout the world. Much of the concern over definitions stems from the structural elements that each definition of social organization entails. In *The Evolution of Political Society* (1967), Morton Fried found it useful to distinguish between social and political organization when he created an evolutionary typology of human societies. Fried argued that the term "social organization," applied by anthropologists to a number of relationships, conflated social structure and polity (Fried 1967:8-9). Fried's distinction will be followed here, as the archaeological expectations of social inequality and political complexity are quite different. A society is said to possess *social inequality* if some or all of its members are ranked in a hierarchy with regard to status. A *rank society* is defined as "one in which positions of valued status are somehow limited so that not all those of sufficient talent to occupy such statuses actually achieve them" (Fried 1967:109). *Political complexity* is said to exist when a rank society possesses a system of ranking individual polities into a hierarchy. *Hereditary inequality* is the transmission of ascribed status from one individual to another via kinship. This form of inequality is the hallmark of rank society. *Stratified society* is one in "which members of the same sex and equivalent age status do not have equal access to the basic resources that sustain life" (Fried 1967:186). In this study, *egalitarian society* refers to a society in which positions of status, other than those of sex or age, are primarily achieved and not ascribed. Status in these societies is not usually transmitted from one individual to another in the hereditary fashion typical of rank or stratified society.

I have chosen to use *emerging complex society* to describe the social and political relationships which characterize the Early Formative period in the Mazatán region. This convention avoids the *a priori* designation of a particular form of social and political organization (e.g., a rank or stratified society) for the Mazatán case. In addition, this designation implies that the society in question is undergoing a transition in its social and political structure, with a trajectory toward increasing complexity. The term *complex society* as used in this dissertation refers to the frequency and amplification of social and political institutions. This does not imply that egalitarian societies lack complexity, rather, I envision a continuum from egalitarian to complex. In this regard, emerging complex societies are roughly analogous to Clark and Blake's (1994) *transegalitarian* societies, a term which has gained some currency in the literature (Hayden 1995:18). Both of these terms encompass a great deal of variation in the social formulations they describe.

The Process of Emerging Complexity

In recent years, serious attention has been devoted to the study of the origins of hereditary inequality. This research has identified a number of important factors that may be linked to the emergence of hereditary inequality. These include the following: (1) *sedentism*, or the settling process of previously nomadic or semi-nomadic peoples; (2) *agriculture*, or some

other form of production that exceeds the subsistence needs of the community, and (3) *high population* density. Taken together, these factors can be considered as the prerequisite conditions of hereditary inequality, but insufficient to cause hereditary inequality.

The transition to hereditary inequality represents a radical new direction in human history. It set the stage for the emergence of more complex forms of social and political organization and, ultimately, the beginning of the state. Through the careful study of the origins of hereditary inequality, we can learn more about the evolutionary process, i.e., how such inequality evolved out of previous forms of social organization. It may also be the case that there are no ethnographic cognates for this process. The advantage of using archaeological cases is that they provide a diachronic perspective on the process. The Mazatán region shows a long-term pattern of emerging complexity over time and represents one of the best archaeological cases presently available for the investigation of the process of emerging complexity.

Evolutionary Frameworks of Inequality

The question of the origins of social and political inequality has been addressed by anthropologists and archaeologists in their attempts to understand the diverse forms of social and political organization present throughout human history. Anthropological models have emerged which have divided societies into evolutionary types based upon attributes of inequality, such as heritable status and other ethnographically observable traits (Sahlins 1958; Service 1962, 1975; Johnson and Earle 1987). However, the explanatory power of many of these models is limited by their reliance upon the synchronic observation of Polynesian chiefdoms and Melanesian Big Men as their primary ethnographic cognate. This approach has shaped our understandings of the variation in social and political organization of both egalitarian and non-egalitarian societies (Feinman and Neitzel 1984). The division of societies into types has tended to freeze conceptual frameworks of inequality into discrete, reified structures, such as bands, tribes, and chiefdoms. Models have subsequently been developed which draw upon these concepts to differentiate new forms of social and political organization from their antecedents. The literature pertaining to the origins of chiefdoms provides a good example of how a particular ethnohistorical polity (the chiefdom) becomes reified as an evolutionary stage in the development of complex societies (see, e.g., Carneiro 1981; Drennan and Uribe 1987; Earle 1978, 1991; Flannery 1972; Johnson and Earle 1987; Helms 1979; Kirch 1984; Peebles and Kus 1977). The dependence of these models on the specific ethnohistorical circumstance which fostered their creation, for example, the development of complex Polynesian chiefdoms (Goldman 1970), calls into question their universal applicability to the variety of ethnographic and archaeological cases present worldwide (Yoffee 1993).

The typological approach to the study of inequality has given rise to a number of models of emergent inequality which attempt to trace inequality to a single causal factor, such as population pressure. Arnold (1993) divides these approaches into four major categories: population growth, political evolution, environmental stress/risk management, and warfare. Population growth models argue that inequality emerges as a direct result of increasing

population (e.g., Carnerio 1970; Cohen 1985; Keeley 1988; Sanders and Price 1968). Political evolution models stress the internal and external processes of political change, including the actions of individual and group social actors. Environmental stress/risk management models examine cultural responses to food stress or environmental change (Testart 1982). Warfare models emphasize coercion or violent action in the transition and maintenance of inequality (Coupland 1988).

Other models exist which do not fit the categories outlined above. These have been developed to explain individual archaeological patterns, such as the emergence of hereditary inequality among hunter-gatherer-fisher societies of the Northwest Coast (Matson 1983, 1985). This example implicates resource productivity and predictability in the emergence of rank society. According to Matson, intensification of salmon procurement was the ultimate cause of status differentiation, but the proximate cause was ownership and control of resource patches. As population in the region increased, social units mapped on to the best resource locations first, and eventually came to "own" these locations as pressure on the resources accelerated. There was, however, considerable variation in the nature of this ownership. Entire social groups and communities could collectively control a resource location. Some groups owned the location itself (including the land), others had only usufruct rights. Sedentism and ownership evolved when resources were sufficiently abundant, predictable, reliable and geographically and temporally limited. Variability in the quality and productive capacity of resource patches resulted in differential wealth and ranking. This model enjoys the advantage of linking regional historical and geographic information to archaeological evidence in the development of a model of the origins of rank society.

Prime-mover explanations of the origins of social and political inequality are appealing because they seem to be generally applicable to a number of anthropological and archaeological cases. Additionally, they are parsimonious in their explanations by reducing inequality to one cause. However, the monocausal approach is flawed in both its logic and scope because prime mover models attempt to develop normative universal explanations of inequality based upon examples from particular ethnographic or historic contexts. Models predicated on the assumption of a single locus of inequality claim that there is a prime mover to social inequality. Such models (1) obscure or naturalize the processes and historical circumstances which gave rise to inequality, (2) conflate the social, political, economic, and ideational aspects of inequality in their search for a prime mover, and (3) ignore or distort new social and political relationships or forms which do not fit the parameters of the model.

Rather than review all these models here, a task which has been accomplished elsewhere (see Price and Feinman 1995), I will focus on models which address archaeological cases with archaeological data. Such models focus on processual concerns but also tend to invoke human agency or action theory. Feinman (1995:262) observes that, "viable explanations of change must ultimately unravel the interplay between human strategies and socio-environmental opportunities and stresses. They must also recognize the historical nature of these social transitions." Feinman's comment provides a point of departure to consider some models that utilize this approach.

Actor-Centered Models

More recent approaches to the study of hereditary inequality have stressed the role of actor-centered models and action in the emergence of hereditary inequality (Clark 1994; Clark and Blake 1994; Hayden 1993, 1995; Hayden and Gargett 1990). In this view, individual human decisions and social interaction are seen as significant variables. Social change is wrought through the accumulation of individual choices. The transition to social and political inequality can be viewed as the unintentional result of individuals pursuing their goals of self-interest (Clark 1994:8). Clearly, this approach has the advantage of allowing for multiple loci of inequality in different historical circumstances. Functional and ecological models of social inequality are limited in their applicability to different ethnographic and archaeological situations because they cannot be applied to a set of conditions for which they were not designed. Incorporating actor-centered models into the question helps elucidate some general tendencies of human behavior which operate in both egalitarian and non-egalitarian societies.

One actor-centered model has been developed by Brian Hayden (1995) to explain the rise of complexity among hunter-gatherer-fisher societies of the Interior Plateau of British Columbia. His is one of the few models which clearly articulates its underlying assumptions. Specifically, Hayden posits that in any community of 50-100 people, there will be aggressive individuals who "enhance their own self-interest over those of other community members" (Hayden 1995:20). Self-promotion at the expense of others, he contends, is a constant of human psychology. By articulating this assumption, Hayden strikes at the core of all models of the rise of complexity, namely, their reliance on a concept of human nature. With respect to his model, one must accept these psychological tendencies as fundamental aspects of human nature in order to validate the model.

As a preface to his model, Hayden offers some insight into how this tendency manifests itself. He argues that such self-promoting behavior "is not construed as a genetic imperative that deterministically affects all humans, but as a simple aspect of human genetic and developmental variability. Such individuals have always been a force to be reckoned with, in some cases being repressed, in some cases being channeled into noneconomic domains such as *ritual competition*, and in some cases being given greater freedom to compete" (Hayden 1995:20, italics mine). This emphasis on the noneconomic domain is of particular importance to the present study.

Drawing upon this assumption, Hayden develops a model centered around competitive feasting, which figures prominently in a number of other models (see Friedman and Rolands 1978). He argues that in situations without resource stress, competitive feasts provide a means of transforming surplus production into personal power (Hayden 1995:24). Such feasts create contractual debt obligations often with long-term implications. These feasts deviate from the ethnographically-observed feasts of chiefdoms in that they do not involve redistribution of wealth (the hallmark of chiefdoms). As a corollary, these feasts also "appeal to the immediate material self-interest of all the participants" (Hayden 1995:24). Thus, competitive feasting becomes the primary means of generating individual power and provides a means for power inequalities to multiply (Hayden 1995:25). Competitive feasts

have the capacity to bring together often diverse forms of wealth and can draw upon an equally diverse array of labor inputs. Since these feasts only occur under conditions of relative abundance, their appearance in the archaeological record will be punctuated.

Hayden's position dovetails with that of Fox (1994) and Clark and Blake (1994) with regard to the importance of competitive feasting. Both of these models see feasting as a means of bringing together communities. Feasts enhance the prestige of their sponsor while providing tangible benefits to all participants. Fox (1996:494) suggests that ballcourts doubled as public feasting facilities; he goes as far as to imply this was their primary function. The archaeological correlates of competitive feasting, however, can be interpreted as the products of different forms of social organization. Further, the expected social form (e.g., band, tribe, chiefdom, etc.) must be known in order to test the model. For example, competitive feasting in a chiefdom might create quite a different archaeological pattern from that of a "Big Man" society. Again we find ourselves a theoretical quandary—we need *a priori* knowledge of the social arrangement in order to derive the expectations. To avoid this problem, Hayden (1995) outlines the archaeological expectations for different aggrandizer strategies. In doing so, he surveys the ethnographic and archaeological literature for examples of these strategies and their outcomes. His review shows that different strategies for accumulation of power, such as extortion and bridewealth, can lead to different evolutionary trajectories. Moreover, he is very clear on the archaeological manifestations of competitive feasting, which include the presence of feasting facilities and structures, and prestigious or fancy food serving vessels (Hayden 1995:49-50).

The Friedman and Rowlands (1978) model of emerging inequality, which inspired a number of similar models, also emphasizes the role of competitive feasting during the process of social differentiation. Their model posits that the ability to throw a feast is evidence of divine favor and leads to spiraling status and enhanced worth. Feasting provides a context for status differences to be witnessed by the entire community, thus reinforcing statuses in the minds of the participants. The Friedman and Rowlands model is one of the few to be tested against archaeological data (Lesure 1995). The results of Lesure's evaluation are discussed in Chapter 4.

Early Formative Rank Society

The actor-centered model developed by Clark and Blake (1994) for the Mokaya of the Mazatán region stresses the role of human agency in the transition to inequality. Clark and Blake propose that the initial transition to inequality was linked to a decrease in the ability of a society to prevent a limited number of individuals from acquiring prestige and passing it on to their descendants. They term these individuals "aggrandizers" or individuals who compete within a household or community for power and prestige (Clark and Blake 1994). They suggest that the transition to social and political inequality within the Mazatán region was a two-stage process. The first stage involved competition between and among aggrandizers within an egalitarian ethic. Clark and Blake propose that the seeds of inequality are inherent in the age, gender, and aptitude distinctions of egalitarian societies. In the initial stages of the transition, aggrandizers were able to compete for prestige within the confines

of the egalitarian structure. This competition then led to the second stage, which was the subversion of the egalitarian ethic itself and the emergence of hereditary inequality. They argue that the subversion of the egalitarian ethic was an *unintentional* (i.e., chance) consequence of heightened status rivalry and could not be foreseen by the original aggrandizers. Once the ethic was subverted, permanent changes in the structure of the society were implemented, and a socially differentiated society emerged. In their model, societies undergoing this transition are termed *transegalitarian* (Blake and Clark 1999; Clark and Blake 1994).

Clark and Blake posit that the impetus of social change lay in the self-interested competition for prestige among aggrandizers. In this view, aggrandizers were always searching for new and more elaborate ways of enhancing their prestige. One way that they accomplished this was through sponsorship of feasting and ceramic production. Elaborate ceramic serving vessels used in feasting became a form of competition and display. Clark and Blake argue that the appearance of elite residential structures, elaborate ceramics, and exotic goods were some of the material correlates of increasing status differentiation.

The key to understanding emerging complexity is to view it as an ongoing and dynamic evolutionary process. The search for universal functional types (e.g., band to tribe to chiefdom) has actually hindered scholars' abilities to recognize the underlying social processes which were operating in transegalitarian societies. By focusing on the process of change itself, I hope to elucidate here some of the variables which were integral to the transition. This approach satisfies two objectives: (1) it provides a diachronic perspective which is truly evolutionary in scope (as opposed to the arrangement of synchronic types into an evolutionary scheme), and (2) it incorporates the unique set of geographic and historic conditions which were present in the Mazatán region during the transition to inequality. My position is not that of historical-particularism, rather, I focus on the processes that bring about structural changes in society, or morphogenesis (see Archer 1982 for discussion).

The Transition to Social and Political Inequality

Models that address morphogenesis must link a certain set of conditions and evolutionary processes to a particular historical trajectory of social and political organization. Starting with the beginning conditions or precursors, I see the following as requisite catalysts for structural change (that is, any change which results in a permanent transformation in social organization of a particular society): (1) some form of excess production beyond the immediate subsistence needs of the group, (2) sedentism, (3) the ability to organize labor parties, and (4) the possibility for growth and development of the new system (i.e. expansion). Meeting all or some of these conditions does not necessarily entail a trajectory of differentiating social inequality. However, I expect that if these antecedent conditions are present, social and political inequality have the opportunity to develop. If the question is reversed, that is, if one considers how egalitarian social organization is maintained, it becomes apparent that social and political equality would be difficult to maintain under these conditions. I envision that egalitarian societies face threats to their social fabric as part of

their daily existence and develop mechanisms, such as group social sanctions, to neutralize these threats. Yet, despite the power of group social sanctions to discourage non-egalitarian behavior, the only consistent long-term solution to continued friction is the fissioning of the group. Once fissioning is removed as a possibility for maintaining egalitarianism, the conditions are ripe for social change. I hypothesize that fissioning was no longer viable in the Mazatán region by 1550 BC because the region was filling up with competing groups of hunter-gatherer-fishers. As more people immigrated to the region, those already present mapped on to their productive locations. In a situation without unclaimed resources, competition for existing resources increased, and groups began the process of laying permanent claim to territories. This process is similar to Carneiro's (1970) idea of social circumscription. There were two main ways to accomplish this: through the use of force/coercion or by forging alliances with neighboring groups. The archaeological evidence indicates the latter strategy prevailed in the Mazatán region.

By 1550 BC, the productive estuarine and swamp habitats in the Mazatán region were exploited more intensively than before and on a year-round basis (as opposed to part of a seasonal round). This process was gradual, perhaps occurring over a 500-year time span, and was associated with increasing sedentism in the Mazatán region. This "settling in" process generally was common throughout Mesoamerica during the Late Archaic period, when previously nomadic peoples began to settle in permanent villages. Once sedentary, the production of larger surpluses became possible (though surplus production is viable in hunter-gatherer communities). Dietary and ethnobotanical studies indicate that the surpluses produced in the Mazatán region were initially composed of naturally available food resources. Domesticates appear at this time but are not necessarily dietary staples (Blake and Chisholm *et al.* 1992).

Mobile hunter-gatherer-fishers would have difficulty maintaining egalitarianism in the shadow of increasingly sedentary and rapidly expanding groups (though this is possible in large areas when groups can continue to spread out). With fissioning having been removed as an alternative, they responded by settling down and competing with their neighbors for followers. Clark and Blake's (1994) aggrandizer model is useful here to explain how social interaction between neighboring groups may have resulted in structural changes for an entire social network. They posit that a network of chiefdoms emerged from a network of interacting chiefs and that the elevation of one group within the system required that all groups underwent a parallel transformation. These changes were simultaneous and irreversible (Clark and Blake 1994:20). I expect that a network of competing aggrandizers would have emerged by at least the beginning of the Barra phase, if not earlier, and would have been an important catalyst in the emergence of complex society.

Finally, I anticipate that in order for social and political inequality to develop and intensify, the new system must have possessed potential for growth and expansion. Such growth need not have been limited to economic exchanges, but may have included the entire range of social, political, religious and technological exchanges. The greater the potential for expansion, the wider the influence of the Mazatán region its neighbors.

Elite Sponsorship of Ballcourt Construction

The expectations outlined above purposefully omitted the ballcourt as a key component in systemic social change. The construction of this structure so early in the regional history requires some rethinking of explanatory models for the Mazatán region and elsewhere in Mesoamerica. In order to examine the role ballcourts may have played in the transition to complexity, it is necessary to consider scenarios both with and without them. Accordingly, I see ballcourts as more than just another tool for aggrandizers. I argue that the competitive nature of ballgames, coupled with their performance in fixed venues (ballcourts), may have permitted the subversion of the egalitarian ethic in a number of ways. First, ballcourts were, by nature, fixed locales. Their construction represented an important first step toward creating a permanent static forum which could have been sponsored at multiple levels. For example, community sponsorship may have been accomplished through labor contributed to the construction of ballcourts; emerging elites may have achieved sponsorship through mobilization and acquisition of labor, materials, and other resources with the benefits from sponsorship of rituals and games being the fealty of more followers.

Second, the games themselves may have masked the inequalities they produced. As Levi-Strauss (1966:32) observed, one interesting aspect about games is that they create inequalities where none previously existed. Fox (1996:493) speculates that the unpredictability of the outcome also distinguishes ballgames from other forms of ritual in this regard. This situation is analogous to the role gifts play in the creation of debt relationships—the gift itself introduces new obligations upon the recipient. Ballgames and other similar events serve to forge and perpetuate imbalances in the system while simultaneously appear to resolve these imbalances. In this sense, the rituals associated with ballgames provide insight into the contradictions created by competitive games.

Finally, because ballcourts were architectural manifestations, they provided permanent loci for games and rituals that could have been connected with specific sponsors. Although there is no shortage of modern examples of sponsor aggrandizement, the one I propose is small in scale, probably confined to the Mazatán region (at least in its initial stages). The permanence of ballcourts created new opportunities for competitive interaction for subsequent generations. As a consequence, ballcourts provided a means of connecting players, sponsors, and participants in a long-term fashion. Every time a ballgame was played, these connections were reinforced and renegotiated in the minds of the participants and spectators.

Sponsorship is more easily understood in state-level societies where commissioned works bear the names or symbols of their sponsors (though this also opens the door to manipulation of sponsorship). In small-scale societies, however, identification of sponsorship is more problematic. As mentioned in the discussion of Lesure's work, some independent means of determining credit is required before proclaiming that elites were the sole benefactors. In the Mazatán case, we have evidence of sponsorship of craft specialization, specifically the innovation of pottery (Clark 1994:28; Clark and Gosser 1995). This kind of sponsorship could have entitled the patron to a share of the goods. As an archaeological indicator of sponsorship, I would expect evidence of feasting to be associated with elite residences and

the ballcourt. Clark (1994:39) suggests that material symbols of new roles (e.g., ritual specialists) should also be found as evidence of elite sponsorship. The most obvious evidence of this kind would be ballplayer gear and paraphernalia. However, none of these items have yet been found in the Mazatán region.

The appearance of ballcourts on the archaeological landscape in Southern Mesoamerica can be likened to the emergence of the long barrow complex in Britain. Around 4000 B.C., the presence of these barrows was thought to mark changes in the social and political organization of Neolithic farming societies (Renfrew 1983). Barrows were large, earthen burial tombs with stone boulder interior chambers. Some of them were surrounded by substantial wooden fortifications. It is thought that barrows were the precursors of the more sophisticated megaliths, or henges, the most famous of which is Stonehenge. Recent barrow excavations have shown that these were communal burial sites, often containing hundreds of individuals (Fagan 1995:278). British barrow constructions required amounts of labor equivalent to the construction of early Mesoamerican ballcourts.

Colin Renfrew (1983) has argued that barrows and other monumental constructions were symbolic of the continuity of land ownership from one generation to the next. In effect, they were intended as symbols of the proprietary rights of their builders. They also served as markers of the social hierarchy, which is reflected today in the archaeological settlement hierarchy. Ian Hodder (1990) has suggested that barrows may reflect ideologies that were associated with Neolithic communities. In this sense, ballcourts may reflect ideologies centered on the ballgame and its significance. Each time the ballcourt is seen it reinforces the belief system.

Although early Mokaya villagers and Neolithic European farmers are widely separated in time and space, issues surrounding the appearance of monumental structures are similar. Both societies were undergoing fundamental changes in their social and political organization and the outcome of these changes was expressed in the monuments they built. A new way of life was sweeping across both regions—one that required adaptation within the existing social framework while at the same time altering it. The monumental architecture erected at the time of these transitions, therefore, can provide important clues as to the nature of these transformations.

The broad theoretical implication of an early ballcourt at Paso de la Amada is that ballgames and competitive sporting rituals were a significant element in the transition to complex society in Mesoamerica. Indeed, this expectation was worked out by Fox (1994) in his examination of early ballcourts in Honduras. However, less clear is the specific meaning behind the ballcourt at Paso de la Amada and its sudden appearance in the region. The position I have outlined relies heavily on aggrandizer theory and actor-centered models in the explanation of social change. Although the strategic use of ballgames can be seen as a political phenomenon, it also lends itself to alternative analyses which examine the ideational and power relations inherent in ritual. Other perspectives which enhance our understanding of the complexity of the ballgame phenomenon include the ability of sports and related ritual to define, organize, and reify the social order. In considering alternative explanations for the advent of ballcourts in the Mazatán region, I explore three major themes: elite strategies for power, ancestor worship and its ideological implications, and the

anthropology of sport, that is, sport as an organizational feature of society. Though at first glance these themes may seem unrelated, their common denominator lies in the acquisition of power through the sequencing of ritual and the manipulation of ideology.

A Consideration of Elite Strategies

Many of the evolutionary models outlined here hold in common an emphasis on stages of social and political development, *sensu* Service. This approach to the problem of emerging complexity has tended to reify concepts such as band, tribe and chiefdom, at the expense of understanding the general evolutionary trajectories of individual societies. An alternative to this approach can be found in the examination of elite political strategies, rather than focusing solely on evolutionary stages (Rosenswig 1998). This position accommodates a wider variety of social and political formulations, though it, too, tends to force elite behavior into a limited number of categories. Here I will briefly outline the basic theoretical concepts utilized in these models.

In an influential essay, Richard Blanton and his colleagues argue that political actors (in this case, elites) use two types of power strategies: exclusionary and corporate (Blanton *et al.* 1996:2). Both of these types of power are grounded in political economy and therefore require a material base. Exclusionary power is a strategy where "political actors aim at the development of a political system built around their monopoly control of sources of power" (Blanton *et al.* 1996:2). They cite the European feudal system as an example of this type of power. The networks formed by this power base tend to be smaller, as they are dependent on the dominance of the powerful individual. However, the networks may be linked together at a larger level, such as a government bureaucracy. Corporate power is shared among different segments of society or power groups which do not possess the monopolistic relationships characterized by exclusionary power. A corporate strategy, therefore, places limits on the political behavior of the power holders. No one individual or group can appear to hold absolute power (though this may occur at a structural level).

Building upon these suppositions, Blanton *et al.* describe two strategies that ambitious individuals follow in pursuit of power. The first of these, dubbed the network strategy, involves the manipulation of social relationships and participation in large interaction spheres. These activities translate into a diverse array of opportunities for local elites. Prestige goods systems are a good example of this strategy. As individuals begin to manipulate and control the access to exotic goods, they gain political and social credit for their actions in addition to establishing their own position in other exchange systems. The network strategy therefore "requires an increased frequency of feasting, more warfare, and increased production of prestational goods" (Blanton *et al.* 1996:4). Concurrent with these activities, practitioners of the network strategy must find a way to divert goods and followers away from competitors. This is where the idea of the lineage or conical clan permits the affirmation of claims. Blanton *et al.* (1996:5) call this "patrimonial rhetoric," where a system of ranked descent groups (conical clans) enables elites to use exclusionary power to monopolize social relationships, including the most advantageous alliances formed by marriage. This monopoly helps to ensure success at the local level, but what about regional

and macroregional networks? Blanton *et al.* argue that the network dynamic can be reproduced at a number of levels in a fashion similar to the "peer-polity" concept proposed by Renfrew and Cherry (1986). In this scenario, adjacent local hierarchies compete with one another for control of even larger networks (Blanton *et al.* 1996:5).

The corporate strategy is characterized by "...its ability to transcend the scale limitations of the network strategy to include large, powerful states such as Teotihuacán" (Blanton *et al.* 1996:5). This concept shares affinities with Renfrew's (1974) idea of the "group-oriented chiefdoms" which Renfrew (1974:79) suggested are defined by their ability to construct large-scale architecture, particularly well-suited to community ritual. The parallel of these architectural features to ballcourts is apparent. Another salient feature of the corporate strategy is the lack of strong, centralized leadership. Blanton *et al.* (1996:6) boldly claim that this strategy fosters a "cognitive restructuring" from themes of descent and lineage prominent in the network strategy to comprehensive themes of cosmology and fertility. Once this restructuring is accomplished, the appropriation of surpluses can be legitimized by the elite. The basic advantage of the corporate strategy is that it derails the ambitions of individual political actors by constraining the outcomes of network strategists. This also de-emphasizes the importance of prestige goods by assigning control over these goods to a particular category and then subsuming these categories under larger authorities (Blanton *et al.* 1996:6-7). The expected pattern of such a system would be reduced consumption of prestige goods, though, as the authors caution, this remains to be tested.

Although network and corporate strategies may coexist, they generally result in very different political economies and tend to be antagonistic to one another (Blanton *et al.* 1996:7). The key difference lies in how these strategies are financed. The network strategy is fueled from a varied subsistence base, whereas the corporate strategy relies on "staple finance", namely, agricultural surpluses. Given the differences between the systems, they often are separated in time and space (Blanton *et al.* 1996:7). To operationalize their model, the authors trace the development of polities throughout Mesoamerica. They conclude that Early Formative Mesoamerica was dominated by practitioners of the network strategy. This strategy reached its zenith under the Olmec and abated in tandem with the rise of the Teotihuacán polity. The latter was clearly corporate, marked by ethic diversity and a corporate (acephalous) government structure (Blanton *et al.* 1996:7-8). However, recent discoveries of royal cemeteries at Teotihuacán casts doubt on "corporateness" of the Teotihuacanos. This strategy prevailed throughout the Classic period, and was eventually replaced by a network strategy in the Postclassic period, after the decline of Teotihuacán.

The advantage of this model is that it focuses on political and economic strategies rather than evolutionary stages of social development, such as bands, tribes, or even chiefdoms (Blanton *et al.* 1996:14). They conclude that archaeologists should utilize what they call a "dual-processual approach" when developing social theory. They believe such an approach could incorporate both network and corporate strategies into "one grand theory of sociocultural transformation" (Blanton *et al.* 1996:13).

Within the context of the theory outlined above, the presence of a ballcourt in an Early Formative regional center seems paradoxical. On the one hand, the ballcourt can be viewed as part of a network and is therefore an extension of the network strategy. On the other hand,

ballcourts can also be viewed as large-scale ritual spaces, offered as an important component of a corporate strategy by Blanton and his colleagues. Could ballcourts represent the beginnings of a "cognitive restructuring" or are they mere extensions of network strategists? These questions are not easily answered with the data at hand. However, a clear element of ideology is apparent in later ballcourts. The playing of ballgames by corporate strategists could have provided a means of formalizing the rules of regional interaction while reifying "a cognitive code that emphasizes a corporate solidarity of society..." (Blanton *et al.* 1996:6). Unfortunately, the model offered by Blanton *et al.* does not explain how cycling between corporate and network strategies occurred (Brumfiel 1996; Clark 1996) or why these two strategies are mutually exclusive.

More fully developed ideas about elite strategies can be found in Earle (1997). Earle considers the long-term development of three chiefdoms in Denmark, Hawaii, and the Andes. Through these examples, Earle (1997:67) identifies three basic kinds of power which are used in governments: economic, military, and ideological. Power, as Earle defines the concept, is the mastery a leader holds over others and is backed by force (Earle 1997:3). In this respect, power differs slightly from authority (the right to rule) and control (ability to restrict access to resources). Ideological power, as Earle defines it, has strong parallels to Eric Wolf's (1990) concept of structural power, that is, the ability to shape social action in others. Earle's examples reinforce the idea that multiple pathways to power exist, and these pathways may have very different archaeological signatures.

In his brief exposition, Earle (1997:6-9) defines economic power as the ability to buy compliance; military power achieves compliance through force, while ideological power is derived from routines, that is, ideologies legitimize the social order. It is ideological power that is of interest here, as ballcourts are more likely expressions of this kind of power (rather than economic or military, though I do not discount the possibility that such power is manifest in them. For example, we know that in later times ballcourts were symbolically intimately linked with military power).

Much of human thought and behavior can be considered ideology. Our belief systems form the basis of ideologies, which must be expressed and reinforced through ritual and the construction of monuments (Earle 1997:143). All structural change in social organization is accompanied or preceded by ideological shifts. Ideology is therefore subject to manipulation by elites or other social segments (Earle 1997:149). This conjures up notions of inventing religion, but ideology is a far more conservative enterprise. The construction of ballcourts can be thought of as a form of ideological manipulation, in Earle's terms. Ballcourts are an ideal forum for social control because they provide a common experience for large numbers of people. The ballgames played within them derived from a long-standing tradition of informal games and hence were not "foreign" to the participants. Feasting and other events which accompanied ballgames provided a means of expressing elite power and creating or maintain social obligations. The portrait heads of the San Lorenzo Olmec, thought to depict ballplayers, as well as ritual ballgame items recovered from the El Manatí site, provide the best direct evidence that the ballgame had strong ideological underpinnings. The placement of ballcourts near the ceremonial heart of ancient cities also reinforces the ideological component of ballgames. In later Mesoamerican

societies, ballcourts were considered places where the gods convened, even the place of creation itself. As Earle (1997) illustrates, ideology was an important source of chiefly power. If Earle's assertions are correct, then the initial construction of ballcourts may have been an attempt to "map" an ideology on to the landscape. This reification, in the form of monumental architecture, could have provided emergent elites with a powerful new tool for social displays. Ballcourts, therefore, must have quickly become important in the maintenance of social order, especially if that order was based around an ideology relating to the ballgame. The success or failure of this ideological linkage rested upon the ability of competing factions to use ideology to attract followers, derive social credit for their efforts, and mask the inherent violation of the egalitarian ethos.

The role of factions in social transformation is only now beginning to garner attention (Brumfiel 1992; Brumfiel and Fox 1994). Ideology is always factional. It is constantly being negotiated, modified, reproduced, and discarded. It can also be an important tool for alliance building, especially at the regional level. As Brumfiel (1992:8-9) observes, factional competition forms the basis of class conflict, which in turn structures how alliances are built. The ballgame, formalized within the locus of the ballcourt, provided one basis of factional competition in the Mazatán region. The negotiation of ballgame ideology, within the venue of the ballcourt, could have expanded the influence of the Mazatán elites. At the regional level, this may have fostered the spread of ballcourts. Because the ballgame drew together many segments of society, it could accommodate a number of factional interests. Given the large number of functions ascribed to ballcourts, having a ballcourt would have afforded social advantage to its builders and their faction. The interplay between competing factions not only shaped the political dynamic, it reinforced the ideological connection between the elites and their followers. This ultimately expanded the regional influence of successful factions while setting up rules for future aspirants to follow.

Linkage to the Past

Success within the ballcourt arena is only half of the equation. The wealth, status, and prestige accumulated by individuals or lineages must be transmitted to future generations in order for permanent social and political inequality to evolve. As Blanton and his colleagues argued, Early Formative Mesoamerica was dominated by network strategists. These strategists often relied on "patrimonial rhetoric" to validate their claims to power. An additional feature of this rhetoric is the linkage between the elites and their ancestors. The primary unit for this linkage is the lineage, which serves to legitimize social arrangements and effectively monopolize power for one group. Kin-based descent groups, such as conical clans, permit the concentration of resources in the hands of a few. Over several generations, this monopolization of power becomes the social order. However, to understand this process more fully, we must ask how did the lineage emerge to become the dominant social unit in Early Formative Mesoamerica and elsewhere?

Part of the answer to this question lies in the use of ideology to legitimize rule. However, we lack the data to test this proposition, and therefore must focus on some of the common elements of lineages to provide insight into this problem. One of these common elements

is the connection between living individuals and divine ancestors (Friedman 1979). What determines the dominance of particular lineage appears to be the strength of the connection between a supreme deity and the living individual (Friedman 1979:268-269). The stronger the tie, the greater the monopoly on power. Vertical ties to divine ancestors are stronger than horizontal or secondary ties. But these latter relationships accommodate other statuses in a way that both legitimizes the lineage itself and provides a common relationship between all segments of society and the divine ancestor. For example, Linda Schele and her colleagues argue that in later Mayan societies ballgames were actually creation stories, providing a common origin myth for all members of that society (Freidel *et al.* 1993). Success in the ballgame, as well as the ability to sponsor ballgames, were seen as divine favor. This clearly set these participants apart from the rest of society. It also provided a medium to connect themselves in a direct way with divine ancestors. However, this system also leaves ample room for negotiation of status, as lineage heads competed with one another for divine favor.

The lineage, therefore, can be seen as a starting point for the evolution of more complex social arrangements (Friedman and Rowlands 1978). In the Mazatán case, evidence of lineages or similar descent groups comes from a sequence of large residences constructed in the same location over a period of several centuries. This continuity suggests that a hierarchically organized social unit was operative during the Early Formative and could have been instrumental in the construction of the ballcourt. I will address this in the coming chapters. For now, I note that lineages also provide a useful way of organizing labor. Such organization would have been critical during the construction of ballcourts or other large ritual structures.

The connection of specific lineages with deities merits further exposition, as it necessarily implies a religious element to the ballgame. This religious aspect is intimately bound with ritual, which leaves tangible archaeological evidence. Indeed, both religion and ritual are often seen as synonymous in archaeological contexts. Renfrew (1994:51) argues that the presence of a deity is one of the hallmarks of religious belief, though this assertion is highly controversial. He suggests that special locales are required for ritual, in order to focus the participants on the connections being made. For example, he argues that "when sacred ritual takes place, it is situated at the boundary between this world and the other, supernatural world: the very act of religious observance ensures that the celebrant is situated within this liminal zone or boundary area which itself possesses certain characteristic features. And the purpose of much religious ritual is to secure the attention...of the deity or transcendental forces which are invoked" (Renfrew 1994:51). Ballcourts fit this characterization quite nicely, as they occupy that "liminal zone" or special location within the site.

It is interesting to note that ballcourts first appear at the same time as lineages (or similar decent groups) make their presence felt on the archaeological landscape. The correspondence of these two events suggests that perhaps a religion, focused around the ballgame, developed during the Early Formative period and continued until Postclassic times. The specific meaning of symbols associated with this religion are lost, but it is clear in later times that the ballcourt was the place where religious dramas were played out. An observation by Linda Schele (1993:348) illustrates this point: "For the Maya, the confrontation of death, evil, and disease took place in the ballcourt. The roles of the players, the conflict between

teams, the winning and losing of wagers, the consequences of defeat, and the recovery of the dead First Fathers from the floor of the ballcourt all provided the basic metaphors defining destiny and history for the Maya."

Considering the ballgame as a religious ritual and ballcourts as sacred places brings together the different kinds of power outlined earlier into the sort of "cognitive restructuring" envisioned by Blanton and his colleagues. The new cognitive code (or perhaps better termed as religion) enabled the participation of wider and wider audiences. As this religion spread, more ballcourts were constructed, which provided more monuments to the ballgame. These monuments could be connected with specific sponsors who negotiated their relationship with deities in the public ballcourt forum. These kinds of cognitive connections in the minds of participants and spectators could have helped to legitimize the social order while eliminating potential competitors.

Of course, Early Formative societies experienced a number of structural changes in conjunction with this new ballcourt-centered universe. In this final section, I explore the potential that competitive sport has to facilitate social change. Here I consider sport as "a dynamic social space where dominant ideologies are perpetuated" (Messner 1988: 198) as well as a dangerous forum where unexpected outcomes can alter fortunes.

The Anthropology of Sport

In the past few decades, anthropologists have begun to consider the complex relationship between sport and society (Blanchard 1981; Blanchard and Cheska 1985). While there are a number of sources that describe indigenous games and a considerable discourse on sport and play, there are few studies that specifically address sport in the ancient world by taking a particular theoretical perspective. We cannot simply graft our modern sporting world on to the past. However, anthropologists, sociologists and historians have much to offer in terms of this relationship. Of particular interest are those models which address the transfer of popular sports through time and space and the culture which grows up around sports. For example, William Kelly (1998) details the adoption of baseball in Japan. Kelly describes what he calls the "dynamics of mimicry", where the adoption of sports from other cultures is used in, among other things, the negotiation of ethnic identity. In the seventy years since its introduction to Japan, it has gone from being a "foreign" sport to a national phenomenon. Fans and players are devoted to the sport with a near-religious zeal. Yet, this foreign sport is instrumental in defining the Japanese identity. The participation of American players on Japanese teams is limited, and this ethnic distinction is highlighted by Japanese society. As Kelly (1998) observes, "national stereotypes of sports and sporting styles reify intersocietal differences while masking intrasocietal differences."

The idea of sport being used to mask differences in society is an interesting concept. In my earlier discussion of ideology, I stressed the need for emerging elites to manipulate ideology in order to mask their violation of the egalitarian ethos. Levi-Strauss (1966:31-32) spoke of the structural asymmetry of competitive games, of their ability to create winners and losers where no inequality previously existed. This "disjunctive effect" as he called it is masked by the event itself. I consider this effect in more detail in Chapter 5. However at this

juncture it is worth mentioning that some social theorists argue *that the primary social function of sport is the maintenance of inequality* (Gruneau 1975). Competitive games and sporting ritual therefore must contain "built-in" mechanisms to obscure or mask the inequalities they create among the participants and spectators. As sociologist Jeremy MacClancy (1996:4) mused, "sport does not merely 'reveal' underlying social values, it is a major mode of their expression." He adds that, "sports and sporting events cannot be comprehended without reference to relations of power: who attempts to control how a sport is to be organized and played, and by whom; how it is to be represented; how it is to be interpreted" (MacClancy 1996:5).

Historical perspectives on sport argue that it was an organizing feature of society, that it aided in the reorganization of labor and leisure time during state formation (Struna 1996). As such, sport was instrumental in social stratification and the maintenance of inequality. An example of this comes from the transformation from medieval to industrial societies in England. As Struna (1996:5-6) notes, sport and leisure patterns reflect the values of a given society. With the coming of the industrial revolution, the sport and leisure habits of English society lagged behind, reflecting earlier class and social distinctions, and values. Different kinds of sports were practiced by each social class. These habits did not fit well with the new emphasis on industrial output and productivity. Civil and industrial elites perceived these patterns as an impediment to progress and economic opportunity. The old patterns of sport and leisure were eventually transferred to the American colonies where they persisted for over a century during the formation of the modern American state. However, as sports and recreation became "formalized", that is, sports were assigned particular social values, the boundaries between labor and leisure were established (Struna 1996:9). Elites were quick to capitalize on this separation and maintained formal boundaries between labor and leisure from 1800 onward. Having sport and leisure as separate experiences allowed elites to control the practice of sport itself—they defined the rules, constructed the gaming facilities, and assigned ranks and values to sports and their participants. By the end of the nineteenth century, sport and leisure "were both instruments and symbols of gentry hegemony" (Struna 1996:197).

Although an "anthropology of sport" has been around for several decades, sports and competitive games have tended to be ignored in the development of archaeological theory. As this section has shown, sports can be used strategically by elites for social control and prestige. There is a general lack of archaeological sources which use sport as a analytical tool, though a few attempts have been made which look at the relationship between sport and status using archaeological cases (see Burley 1996). In this example, the construction of pigeon-snaring mounds by Tongan chiefs can be linked with ascent to power of specific chiefly line. However, Burley's analysis is the exception, rather than the rule, for the uses of sport in archaeology. This trend can partially be ascribed to a reluctance on the part of archaeologists to use contemporary analogs such as modern sport. But many of the social processes behind sports and sporting events have instructional value for the kinds of social issues archaeologists are trying to understand. I have presented a number of examples and theoretical paradigms here which suggest that understanding the dynamics of sport and its strategic use by elites can shed light on the general question of how complex societies

emerged. These examples have also illustrated that "...sport is a central activity in our societies, one embodying social values, and, as such as deserving of systematic investigation as any other. Sport might be fun. That doesn't mean it should be disregarded by academics" (MacClancy 1996:2).

Chapter Summary

The models described in this chapter suggest that Early Formative Mesoamerican societies do not easily fit the traditional models of emerging complexity. The physical evidence conforms to the expectations of various models, however, finding the ballcourt as physical evidence means that we have to accommodate the sociality of its construction and use in our models. The construction of this feature at Paso de la Amada in the Mazatán region requires some re-tooling of each model's parameters. Accordingly, I argue that the construction and use of the ballcourt was an important catalyst which fueled social changes during the Early Formative in the Soconusco. The creation of a permanent ritual space at Paso de la Amada devoted to ballgames enabled the intensification of aggrandizer rivalry within the Mazatán region. Claims of sponsorship of ballgames could have greatly enhanced the prestige of emerging elites.

Some of the models outlined in this chapter suggested that unequal exchanges such as gifts were important in the creation of debt. Over time, these debts weaken and destabilize the egalitarian social fabric, allowing individual aggrandizers to accumulate wealth. Once these imbalances become incumbent upon the debtor's heirs, permanent social and political inequality can emerge.

I summarized Fox's (1996) position that ballcourts were multipurpose facilities which satisfied a variety of functional imperatives. Among these was their use as feasting locales. Hayden's (1995) model emphasized the role of competitive feasting in transegalitarian communities and stressed that aggrandizer behavior is often channeled into noneconomic activities such as ritual competition. The construction of a ballcourt may have provided a permanent venue for this competition among the Early Formative Mokaya. I likened the ballcourt construction to the barrow construction of Neolithic Britain and suggested that both these constructions signaled a fundamental reorganization of society expressed in monumental architecture.

The final section offered some theoretical alternatives which may help explain the link between early ballcourts and the process of emerging complexity. I suggested that ballcourts could have formed part of a elite strategy, as defined by Blanton and his colleagues (1996) and by Earle (1997). These models were largely based on the concepts of power and power relations between social units. The connection between the ballcourt and specific ancestors and deities was discussed within the context of ancestor worship. Using supporting data from the Maya region, I introduced the idea that the ballgame could have been a type of religion. This religion provided its practitioners with a new cognitive code—one which allowed the negotiation of power and status at the ballcourt. This led me to consider the idea that sport and sporting ritual could be used to mask social realities (Levi-Strauss 1966; Kelly 1998). Perspectives from historians and social theorists demonstrated that elites manipulated

sport in order to enhance their own status and that sport, beyond its functional imperatives, was an important element in the development of social hierarchies. I argued that this relationship merited further inquiry, perhaps using an approach similar to that employed by sociologists in their study of modern sport and advocated by anthropologists as an "anthropology of sport".

To evaluate these perspectives, I outline the history of ballcourt research and provide the details of the Mazatán case in the coming chapters. I hope that it is clear from this review that the construction of large ritual facilities, such as ballcourts, is closely related to increasing social complexity. A review of later ballcourts will help us approach this question and bring a historical perspective to our understanding of the development and spread of ballcourts throughout Mesoamerica.

CHAPTER III

OVERVIEW OF THE MESOAMERICAN BALLGAME

> It is evident, for one thing, that the competitive rubber-ball game is confined to peoples who for the most part are dependent upon agriculture for subsistence, although, to be sure, fishing and to a lesser extent hunting may play an important supplimentary role. Clearly, this must reflect demographic as well as economic determinants: relative permanency and size of settlement, together with a division of labor and a means of storing surplus foods to permit men the leisure to play together, must have predisposed people towards maintenance of the game. In comparatively permanent villages, moreover, the area immediately adjacent to the houses is usually cleared, forming a plaza that can, on occasion, serve as a ball court. (Stern 1950:95-96)

The epigraph alludes to the close relationship between complex societies and the competitive ballgame. At the time of Spanish Conquest, a variety of ballgames were played throughout Mesoamerica. Most of these games were played in a highly-organized fashion, in masonry ballcourts, by members of state-level societies. Some of ballplayers were tantamount to today's professional athletes and enjoyed special rights and privileges, though occasionally these came at a high price. Much of what we know about the ballgame, as it was played in formal ballcourts, comes from eyewitness accounts by Spanish clerics. About a dozen such accounts are available, the majority of them dating to the Sixteenth Century. Most of them describe the Aztec version of the ballgame, though one account from the Seventeenth Century mentions the ballgames of the Maya, among peoples of the Caribbean (most likely Taino), and in Northwest Mexico (Leyenaar 1978:21-40). Of the various available sources, Fray Diego Durán provides the clearest picture of the Aztec variant of the ballgame, claiming to have seen the game played many times. The following description provides a rare glimpse into the most common form of the pre-Hispanic ballgame, known to the Aztecs as *ullamalitzi,* the patrons of the sport, the ballcourt where it was played, and the lives of the ballplayers.

> It was a highly entertaining game and amusement for the people, especially for those who held it to be a pastime or entertainment. Among them there were those who played it with such skill and cunning that in one hour the ball did not stop bouncing from one end to the other, without a miss, [the players] using only their buttocks [and knees], never touching it with the hand, foot, calf, or arm. Both teams were so alert

in keeping the ball bouncing that it was amazing. If watching a hand-ball game among Spaniards gives us such pleasure and amazement on seeing the skill and lightness with which some play it, how much more are to be praised those who with such cunning, trickery, and nimbleness play it with their backsides or knees! It was considered a foul to touch [the ball] with the hand or any other part of the body except the parts I have mentioned-buttocks and knees. Through this demanding sport excellent players were formed, and, aside from being esteemed by the sovereigns, they were given no table dignities, were made intimates of the royal house and court, and were honored with special insignia.

Many a time have I seen this game played, and to find out why the elders still extol it [I asked them] to play it in the ancient way. But the most important [factor] was lacking, namely the enclosure where the contest took place, within which it was played, and the rings through which they cast and passed the ball. And it was a foolish insistence of mine to try to see today something which existed in ancient times, as different as the real thing from a picture. So that we can understand its form and begin to appreciate the skill and dexterity with which this game was played, it must be noted that ball courts existed in all the illustrious, civilized, and powerful cities and towns, in those ruled by either the community or the lords, the latter stressing [the game] inordinately. A regular competition existed between the two [types of communities]. [The ball courts] were enclosed with ornate and handsomely carved walls. The interior floor was of stucco, finely polished and decorated with figures of the god and demons to whom the game was dedicated and whom the players held to be their patrons in that sport. These ball courts were larger in some places than in others. They were built in the shape that can be seen in the illustration: narrow in the middle and wide at the ends. The corners were built on purpose so that if the player's ball fell into one it was lost and was considered a foul. The height of the wall was anywhere between eight and eleven feet high, running all around [the court]. Because of heathen custom, around [the wall] were planted wild palms or trees which give red seeds, whose wood is soft and light. Crucifixes and carved images are made of it today. The surrounding walls were adorned with merlons or stone statues, all spaced out. [These places] became filled to bursting when there was a game of all the lords, when warlike activities ceased, owing to truces or other causes, thus permitting [the games].

The ball courts were anywhere between one hundred, one hundred fifty, and two hundred feet long. In the square corners (which served as ends or goal) a great number of players stood on guard to see that the ball did not penetrate. The main players stood in the center facing the ball, and so did the opponents, since the game was carried out similarly to the way they fought in battle or in special contests. In the middle of the walls of this enclosure were fixed two stones facing one another, and each had a hole in the center. Each hole was surrounded by a carved image of the deity of the game. Its face was that of a monkey.

As we shall see under *The Calendar*, this feast was celebrated once a year, and to clarify the use of these stones it should be noted that one team put the ball through the hole of the stone on one side while the other side was used by the other team.

The first to pass its ball through [the hole] won the prize. These stones also served as a division, for between them, on the floor, was a black or green stripe. This was done with a certain herb and no other, which is a sign of pagan belief. The ball always had to be passed across this line to win the game, because if the ball, projected by the backsides or by the knee, went bouncing along the floor and passed the stripe two width of two fingers, no fault was committed; but if it did not pass, it was considered a foul play. The man who sent the ball through the stone ring was surrounded by all. They honored him, songs of praise to him, and joined him in dancing. He was given a very special reward of feathers or mantles and breechcloths, something highly prized. But what he most prized was the honor involved: that was his great wealth. For he was honored as a man who had vanquished many and had won a battle.

All those who played this game were stripped except for their usual breechcloths, on top of which they wore coverings of deerskin to defend their thighs, which were continually being scratched on the floor. They wore gloves so as not to injure their hands, which they constantly set down firmly, supporting themselves against the floor. They bet jewels, slaves, precious stones, fine mantles, the trappings of war, and women's finery. Others staked their mistresses. It must be understood that this took place, as I have described, among the nobility, the lords, captains, braves, and important men. Countless lords and knights attended this game and played it with such pleasure and enjoyment, changing places with one another occasionally, taking their turns so that everyone could take part in that pleasant sport, to the point that sometimes the sun set upon them while they enjoyed themselves.

Some of these men were taken out dead from that place for the following reason. Tired and without having rested, [they ran] after the ball from end to end, seeing it descending from above, in haste and hurry to reach it first, but the ball on the rebound hit them in the mouth or the stomach or the intestines, so that they fell to the floor instantly. Some died of that blow on the spot because they had been too eager to touch the ball before anyone else. Some took a special pride in this game and performed so many feats in it that it was truly amazing. There is one trick especially that I wish to describe. I saw it done many times by skillful Indians. They employed a bounce or curious hit. On seeing the ball come at them, at the moment that it was about to touch the floor, they were so quick in turning their knees or buttocks to the ball that they re- turned it with an extraordinary swiftness. With this bouncing back and forth they suffered terrible injuries on their knees or thighs so that the haunches of those who made use of these tricks were frequently so bruised that those spots had to be opened with a small blade, whereupon the blood which had clotted there because of the blows of the ball was squeezed out.

As some may have seen, this ball was as large as a small bowling ball. The material that the ball [was made of] was called *ollin*, which in our own Castilian tongue I have heard translated as *batel*, which is the resin of a certain tree. When cooked it becomes stringy. It is very much esteemed and prized by these people, both as a medicine for the ailing and for religious offerings. jumping and bouncing are its

qualities, upward and downward, to and fro. It can exhaust the pursuer running after it before he can catch up with it.

Having described the manner in which the noblemen played this ball game for recreation and sport, we shall now deal with those who played it for profit and as a vice, their endeavors and happiness depending upon not losing but winning, like professional gamblers, whose only occupation and job this was, and no other, who depended upon this for their food. Their wives and children (as I described in the last chapter) lived constantly on borrowed bread, asking alms of their neighbors, bothering this one and that one, such as some Spaniards do, sending here for bread today, there for vinegar tomorrow, another day for oil, and so on. In this way these men usually went about poor and ill-fortuned, without sowing or reaping, lacking instruction in anything else but ball- playing. It is rare [even today] to find one of these players prosperous, and they have nothing to show for their efforts. Thus moved and torn by greed and desire of gain, they performed a thousand ceremonies and superstitious acts, invented ways of fortune telling and idolatrous beliefs which I shall explain here.

In the first place, it should be known that, when night had fallen, these players took the ball and placed it in a clean bowl, together with the protective leather breechcloth and gloves, and hung it all on a pole. Squatting before these accouterments of the game, they worshipped them and addressed to them certain superstitious words and magic spells; devotedly they besought the ball to be lucky on that day. During the incantation to the ball they invoked the hills, the water, the springs, the cliffs, the trees, the wild animals and snakes; the sun, the moon, and the stars; the clouds, the rainstorms-in sum, all created things, together with the gods which had been invented for each of these.

When that cursed heathen prayer terminated, [each player] took a handful of incense, cast it into a small incense burner which existed for this purpose, and offered sacrifice to the ball and to the leather gear. While the copal burned, [the player] went forth to bring food, consisting of bread, a humble stew, and wine, and offered these things in front of the paraphernalia, leaving them there until dawn. When day broke, he ate that simple fare which he had offered and went out to seek someone to play with. They went along, each so sure of winning that if anyone suggested to either that he was to lose his faith was such that he would come to mortal blows with [that person] and seven times over defend his heathen belief, something I doubt he would do today in defending our True Faith.

Someone might ask whether they always won with that magic incantation. The devil is subtle in permitting some to win occasionally, thus confirming their unholy beliefs. At other times, when they lost, they were persuaded to curse their own bad luck, which is what losers do. They blaspheme and put misfortunes in the hands of the devil.

These wretches played for stakes of little value or worth, and since the pauper loses quickly what he has, they were forced to gamble their homes, their fields, their corn granaries, their maguey plants. They sold their children in order to bet and even

staked themselves and became slaves, to be sacrificed later if they were not ransomed in the manner which has been explained.

Their way of using themselves as stakes was this. Once they had lost their valuable articles, such as pieces of cloth, beads, feathers, they would give their word saying that at home they had certain valuable articles. If this was believed, it was well, but if not, the winner would accompany [the loser] to his house and take the articles which [the loser] had offered upon his word. But if he did not possess them or find a way to make payment, he was sent to jail; and if his wife or children did not ransom him, he became a slave of the creditor. The laws of the republic permitted that he could be sold for the sum he owed and not for more. In case he wished to become free and if he discovered that he was unable to gather the sum for which he was enslaved, he lost [his liberty] if someone else could pay more. The same was applied to all the other games. This created fear and held back many who took warning in the example of others and did not bet that which they did not possess, in case the opponent took advantage of this and won [him]. As I have said, these were always people of the lower orders, because illustrious, noble people never lacked that with which to gamble. [The latter], however, played more for recreation and relief from their constant warfare and toil-not for profit.

This is an advantage of the rich: if they lose today, with what they have left they can win tomorrow. It is important that one who takes part in this sort of game have large wealth behind him. (Durán 1971: 313-318)

Other descriptions of the ballgame also emphasize the noble aspect of the game. Even the Aztec emperor Montezuma was described as a participant in the ballgame (Blom 1932).

The gear necessary to play the game varied according to the objective and rules. Archaeological examples of ballplaying gear are described later in the chapter. Leyenaar (1978) summarizes the gear commonly described in historic documents and found in archaeological deposits as follows:

1. *yugos*, protective yokes usually worn around one hip, often depicted in stone,
2. *hachas*, thin, axe-shaped objects depicting human heads, usually made of stone, often worn in yugos and may represent trophy skulls,
3. *palmas*, named for their palmleaf-like shape, these are carved stones which may have served as boundary markers or functioned in ballcourt rituals,
4. *handstones*, usually part of stone relief panels which adorn ballcourts, these stones contain imagery of ballplayers and deities,
5. *gloves*, shown being worn by players on polychrome vessels and bas-relief panels,
6. *loincloths*, often depicted on figurines and recorded by the artist Christoph Weiditz (1529) in his drawings of Aztec ballplayers sent to Europe by Cortes,
7. *knee-protectors*, depicted on the earliest ballplayer figurines from West Mexico and dating to around 1800 bc,
8. *arm-wrappings*, found on relief panels and figurines,
9. *chest-protector*, seen on Maya reliefs, ceramic vessels, and figurines, and

10. extra padding, worn on the hips, buttocks, or on the yoke itself for extra protection.

The archaeological versions of this gear have led to interpretations of different variants of the game. Five distinct archaeological ballgames have been defined for Mesoamerica. These are: handball (some of the earliest games), stickball, hipball (described above), kickball, and "trick" games, similar to the "keep-away" games played by children today (de Borhegyi 1980:23-24). Not all of these games required formal ballcourts, however, hipball games almost exclusively require a court in order to keep the ball in play. Of all the ballgames, hipball was by far the most common (Figure 3.1).

Although ethnohistoric sources provide some interesting accounts of the ballgame, archaeological information, especially pertaining to ballcourts, gives a long-term perspective on the ballgame. A look at the history of ballcourt research begins this discussion.

Brief History of Ballcourt Research

Little research effort has been directed at ballcourts, in spite of their presence at nearly every archaeological site in Mesoamerica. In contrast, the ballgame has been the focus of a number of syntheses, especially with regard to ballgame ritual and symbolism (e.g., Leyenaar 1978; Van Bussel *et al.* 1988; Scarborough and Wilcox 1991). The seminal work on ballcourt architecture and distribution remains Eric Taladoire's *Les terrains de jeu de balle* (1981). This extensive volume describes practically every known ballcourt in Mesoamerica and defines the formal parameters of ballcourts (Figure 3.2). Its attention to archaeological context, including site layout, makes it an invaluable research tool for comparative studies. However, its publication in French has diminished its recognition among North American researchers. Fox (1994:9) has divided previous research into two major categories: ballgame iconography and symbolism, and archaeological ballcourts. I use a similar division and add a third, political interaction studies, to these categories.

Initial Research

Ballgame iconography and symbolism are prominent in codices, archaeological sites with masonry construction, and ritual items, such as figurines. Initial research focused on interpretation of the ballplayer and ballgame scenes frequently depicted. This early scholarship provided an interpretive framework for ballgame iconography which described ballgames as ritual combat between opposing cosmological forces or what Freidel *et al.* (1993) have recently called "gaming with the gods." The roots of this framework can be traced to the first "readings" or more appropriately textual translations of the Postclassic Aztec codices. By the early 1940s, epigraphers were beginning to decipher glyphs and codices, and the ballgame was a central feature in these interpretations. Specific deities were identified by Seler (1904-1909; 1963) in his analyses of the Codex Borgia. These identifications, in turn, focused ballcourt studies on symbolic interpretation for subsequent researchers.

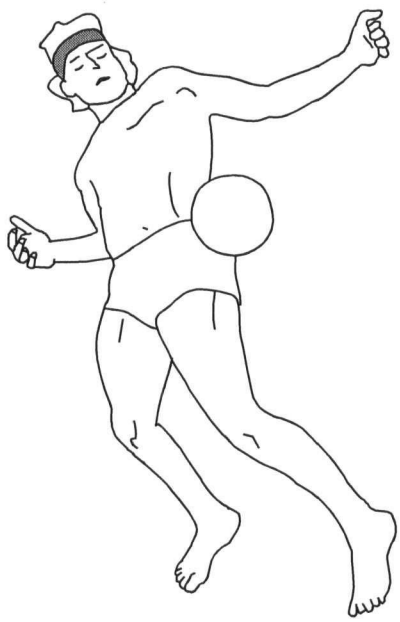


Figure 3.1 Ballplayer demonstrating hipball game (after Leyenaar 1978).

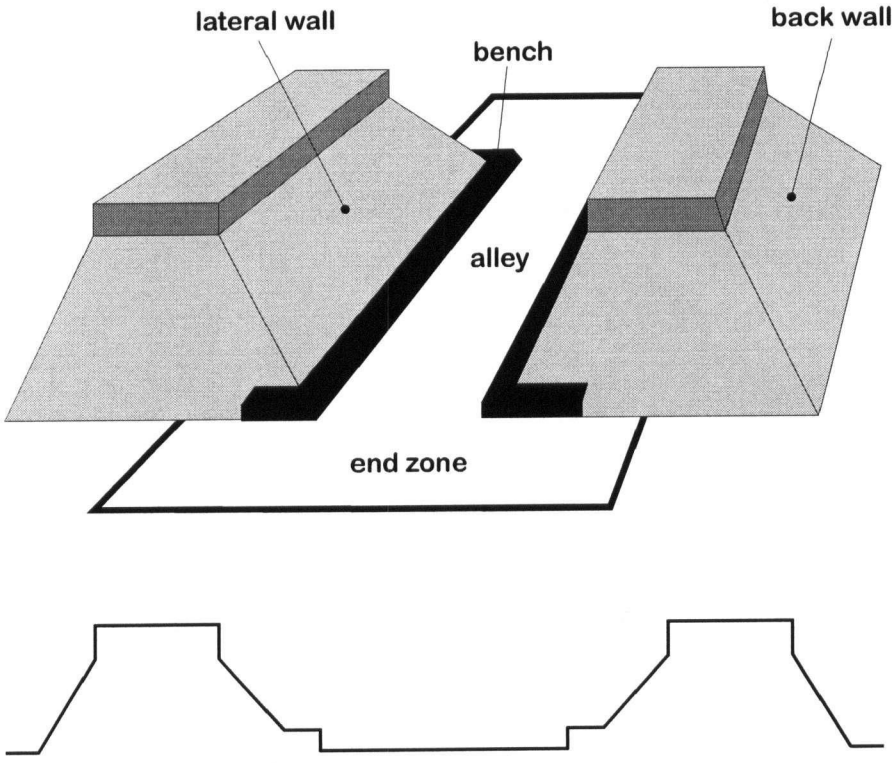


Figure 3.2 Basic Features of Ballcourts (after Taladoire 1991:165)

Fox (1994: 10) observes that early studies of ballcourts in the Maya region differed from those in central Mexico. While central Mexican studies were complemented by ethnohistoric sources, Maya studies had few sources to draw upon. Walter Krickeberg (1948) completed the first study of ballgame symbolism which examined the religious function of the ballgame. His analysis was also the first to incorporate elements of the *Popol Vuh*, the sacred book of the Quiché Maya. Krickeberg's extensive contribution set the future research agenda and demonstrated that the ballgame and associated belief system were pan-Mesoamerican (Fox 1994:11-12).

Frans Blom (1932) constructed one of the first interpretive frameworks for ballcourts. Using a sample of 40 courts from throughout Mesoamerica, Blom documented the formal parameters of ballcourts and developed a basic typology. His pioneering work set the standard for excavation and classification of ballcourts. Jorge Acosta further refined ballcourt typology through a study of ballcourt variability at Tula, where he recognized three distinct ballcourt types (Acosta 1940). These types were evolutionary in nature, that is, each represented a chronological variant of the ballcourt. Thus, even from the earliest research, ballcourts were arranged in typological schemes and were used to identify the age of archaeological sites.

Typology and Classification

The initial organization of ballcourt studies by Blom and others was continued in the 1960s and 1970s by Smith (1961) and Quirarte (1977). Smith defined ballcourt types for the Maya highlands, including the Palangana or closed-end type of court found in highland Guatemala. Coe and Diehl (1980) defined a similar feature at the site of San Lorenzo and speculated that this feature must be an early ballcourt. Quirarte (1977) formulated a typology of Mesoamerican ballcourts based primarily on profiles and arranged each type in a chronological fashion. This arrangement was essentially an evolutionary scheme and became the model for ballcourt development. Fox (1994: 20) is critical of Quirarte's scheme, noting "[it] gives the impression that ballcourts were the active agents in their own development, a process which is depicted as both logical and inevitable." Nevertheless, researchers continue to define ballcourt evolution as a natural progression from rudimentary forms to sophisticated ballcourts with complex auxiliary buildings and structures (Scarborough and Wilcox 1991).

Typological studies advanced significantly with the publication of *Les Terrains de Jeu de Balle* by Eric Taladoire (1981). This colossal volume describes over 600 ballcourts throughout Mesoamerica, Central America, South America and the American Southwest. The typology developed by Taladoire merits detailed consideration.

Taladoire's primary objective was to develop a typology that included all the ballcourts of what could be termed Greater Mesoamerica. In developing his typology, Taladoire (1981:139-141) presented the information listed in Table 3.1 for each ballcourt.

One unusual feature of this study is its organization. Ballcourts are grouped into types prior to the presentation of specific data. While facilitating comparison, it weakens the rationale for the evolutionary typology. Specifically, ballcourts from different time periods are

Table 3.1 Ballcourt Information Collected by Taladoire (1981).

1.	Illustrations,
2.	Criteria [for ballcourt identification],
3.	Sample (the number of ballcourts of each type exclusively part of the study),
4.	Location,
5.	Site location (this was intended to identify patterns between the type of ball-court and the nature of the site, e.g., whether it was located on a hill, plain, fortified, etc.),
6.	Plan [of ballcourt],
7.	Profiles,
8.	Artifacts (rings, stone tenons, stelae as well as evidence which pertains to artifacts no longer present at the site),
9.	Center or axial caches,
10.	Masonry style (if present),
11.	Additional or adjacent structures (includes all elements of architecture not directly considered in the study divided into two categories: landscape and lateral structures),
12.	Associated structures (other features which are generally associated with ballcourts but are not part of the ballcourt *per se*, such as steam baths, etc.),
13.	Dating,
14.	Variants,
15.	Doubtful cases (comments on ambiguous evidence),
16.	Remarks (unusual features, observations or trends),

grouped according to form, then the groups are arranged in an evolutionary fashion. Thus, each group may or may not be temporally coeval with another.

The typological approach can provide insight into the range of variability of ballcourts, but does little to address their social meaning. This, of course, is related to site context, as well as a host of other factors. I doubt if ballcourts can be arranged in a pure evolutionary typology as Taladoire proposes. Fox (1994:21) admits that the value of these typologies lies in their ability to provide a shared language for comparison which, it could be argued, is the *raison d'être* for any typology. It is worth noting here that this issue can be framed within larger debates over the general goals aims of archaeological research (e.g., processual/post-processual debates). Taladoire's contribution is unrivaled by any prior or subsequent research with respect to its scope and breadth.

By the time of the publication of *The Mesoamerican Ballgame* (Scarborough and Wilcox) in 1991 typologies were key aspects of ballcourt studies, as indicated by the number of articles devoted to typology and related topics. This focus has directed subsequent research towards further classification and typology, perhaps at the expense of understanding the social meaning of ballcourts (Fox 1994; 1996). However, it does not mean that these typologies have failed to meet their objectives. Rather, the goals of typology are limited to the development of heuristic devices in order to facilitate comparisons between regions. This enhances the regional approach to understanding variability in ballcourt architecture, use, and function.

Ballcourts and Symbolic Interpretation

Research into the symbolic aspects of the ballgame has paralleled research on formal ballcourts. As with the typological approach, early research and interpretation had a lasting influence on subsequent work. The Post-Classic codices and the *Popul Vuh* are the two main sources utilized by researchers, though more recently iconographic panels (Cohodas 1975; 1978; 1991), ritual paraphernalia (Gillespie 1991) and hieroglyphic writings (Schele and Miller 1986; Miller and Houston 1987; Schele and Freidel 1991; Freidel *et al.* 1993) have been explored. As mentioned, Seler (1963) and Krickeberg (1948) were instrumental in deciphering ballgame scenes in the codices, and they provided the now-familiar interpretation of the ballgame as competition between opposing cosmological forces (e.g., gods vs. humans). Emphasis was placed upon the relationship between ballgames and the ritual cycle, thus making ballgames essential components of the continued existence of any Mesoamerican society. An examination of the Codex Borgia reveals that the ballgame was linked to calendrics (Díaz and Rodgers 1993:57), and the ballcourt was a place of supernatural transformations (Díaz and Rodgers 1993:36-43). However, the exact relationship between ballgames and the ritual cycle is unclear. Seler (1904-1909, 1963) in his interpretation of scenes in the Codex Borgia suggested that ballgame imagery was associated with certain deities, specifically, the Lords of the Day and the Lords of the Night. Recent interpretations of this codex have identified these two deities as two versions (a red and a black one) of the same deity: Tezcatlipoca or "Dark Smoking Mirror," the Aztec god of war (Byland 1993:xv, xx). In addition to supporting Seler's reading of the codex, this finding indicates that ballcourts were the centerpieces of cosmological dramas, at least during the Postclassic period, and were associated with war and conflict.

A similar interpretive framework has been proposed for the Maya region, stemming initially from the work of Krickeberg already described. The *Popol Vuh*, has provided a unique source which outlines a relationship between the ballgame and creation itself (Tedlock 1985). Schele and Miller (1986) postulate that sacrifices were a fundamental component of ballgames. These sacrifices were offerings to the gods. They argue that ballgames were essential to the continuance of the ritual cycle, that is, ballgames invoked the gods. As a corollary to this, ballcourts contained portals to the supernatural world and were places where mortal kings could communicate directly with the gods or even play a ballgame with the gods themselves. In some instances, it has been argued, ballcourts were constructed exclusively for the gods and were not subject to human use (Miller and Houston 1987:47).

Much attention has been devoted to the study of human sacrifice, centering on the practice of decapitation (Borhegyi 1980; Knauth 1961; Pasztory 1978). Ethnohistoric documents suggest that either the skulls were used in the ballgame as actual balls, or the balls were ritual versions of decapitated heads (Miller and Houston 1987; Schele and Miller 1986; Gillespie 1991). In the Codex Borgia, for example, balls depicted in ballgame scenes appear to have faces (Díaz and Rodgers 1993:36, 43; Gillespie 1991:326). Skull racks found at numerous Postclassic period sites as well as hachas, or thin stone heads which were the ritual equivalent of trophy skulls, support the idea that decapitation was closely associated with the ballgame.

Critics of the symbolic-interpretation approach point to the narrow range of sources used during the construction of interpretations (Fox 1994:15-16). Further, such an approach assumes that Postclassic variants of the ballgame are directly analogous to earlier versions. This results in standardized interpretations of ritual objects and archaeological information by filtering this information through the Postclassic lens. Some studies (e.g., Fox 1994; Gillespie 1991) employ multiple sources for their interpretive frameworks while many others in this vein continue to use the *Popul Vuh* as the backbone of all interpretation.

Political Interaction Studies

The value of ballcourts as indices of political and social organization has been only marginally pursued by researchers (Santley *et al.* 1991; de Montmollin 1989, 1997; Fox 1994, 1996). However, this approach holds promise as both a powerful explanatory tool and a means of exploring inter-regional connections. As far back as the work of Theodore Stern (1950), the ballgame was viewed as a surrogate for direct warfare. Building upon this idea while presenting archaeological data, Santley *et al.* (1991:3-24) discuss the politicization of the ballgame in Central Mexico and the Maya Lowlands. They postulate that ballcourts were facilities commissioned by elites and functioned as an effective means of acquiring new territories. They suggest a connection existed between the degree of political centralization and the distribution and frequency of ballcourts. Specifically, areas with a large amount of political fragmentation or factionalism have a greater frequency of ballcourts and these ballcourts tend to be clustered on territorial borders. Santley *et al.* (1991) indicate that this situation resulted from attempts by local elites to define new tributary domains. In this view, ballcourts functioned as markers of specific political units. In support of their thesis, Santley *et al.* offer archaeological evidence which indicates that when ballcourt frequency was low, competition between regional centers was also low, and the corresponding political economy spanned a large territory. In some cases, ballcourts were completely absent (e.g., Classic Teotihuacán) when the centralization of authority was at its highest. In the Maya region, Classic period sites—from the smallest village to the regional center—possessed ballcourts. Santley *et al.* cite this in conjunction with evidence indicating a low degree of political centralization for the Maya Lowlands. They suggest that a strong connection existed between elite wealth building and the politicization of the ballgame. In cases where factionalism was high, betting on the outcomes of ballgames may have become an important means of gaining (or losing) territories (Durán 1971:316-318). While noting exceptions to this pattern, Santley and his colleagues conclude that the distribution of ballcourts is closely linked with larger social and political processes of centralization and decentralization of political authority (Santley *et al.* 1991:23).

A detailed assessment of settlement pattern data as it relates to ballcourts can be found in de Montmollin (1989, 1997). Using data collected from Late and Terminal Classic period sites with ballcourts in the Upper Grijalva River Basin of Chiapas, de Montmollin (1997:23-41) explores variation in ballcourt context (e.g., placement of ballcourts within sites or site hierarchies) and then compares the Upper Grijalva sample with samples from throughout Mesoamerica. A number of informative variables were collected by de Montmollin for each site surveyed including the following:

1. Range length, width, and height,
2. Total volume,
3. Playing field width,
4. Benches,
5. Type (I-shaped, T-shaped, or open-ended),
6. Axis,
7. Location (placement of ballcourt on the plaza,
8. Ballcourt density (defined by persons/ballcourt and km^2/ballcourt).

These data were then subjected to a number of comparisons. Among these were the number of ballcourts per center, as well as an analysis of spatial distribution. In this analysis, de Montmollin compared the number of pyramids in ballcourt vs. non-ballcourt sites, he explored variation in ballcourt size, form, and alignment, and finally offered some observations about the utility of current models which link ballcourt construction to elite political activity.

The results of de Montmollin's study indicate that the model devised by Santley *et al.* was too broadly-based to apply to any particular region (in this case the Upper Grijalva Basin). In addition, de Montmollin noted that the functions of ballcourts (such as facilities for wealth building) could have varied through time and space, something which Santley *et al.* assumed as constant. Further, there exists no archaeological evidence that elites were wagering on ballgames (something Santley *et al.* borrowed from the Postclassic codices). In response to Santley and his colleagues, de Montmollin proposed an "elite-factions" model for the Upper Grijalva Basin which saw ballcourts as "tools of the political trade" (de Montmollin 1997:39). In this model, increased frequency of ballcourts was linked to political segmentation at the elite level; the more elites vying for legitimacy the greater the number of ballcourts in a given region. This avoids, in de Montmollin's view, a "mercantilist" approach that binds all ballcourt construction to elite gambling activities.

The factions model proposed by de Montmollin has the advantage of being tailored to the small-scale (and often unique) political circumstances of a particular regional history. By focusing on faction-building, de Montmollin views ballcourts as a political tool which could have been manipulated by elites in different ways through time and space. This approach permits comparisons between regions on a case-by-case basis and may ultimately reveal the fluidity of ballgame functions throughout Mesoamerica.

Alternative Approaches to Ballcourt Studies

The approaches reviewed to this point have been grouped into three broad categories: (1) typology and classification, (2) symbolic interpretation studies (including iconographic studies) and, (3) political interaction studies. The first two approaches have changed very little since their inception, while the third approach focuses on political processes as they relate to ballcourt construction. This approach holds promise; however, its application to date has been broad in scope and has facilitated only general comparisons between regions. All of these approaches have been characterized as passive in their investigation of ballcourts, as though they were an "inert container" for social activity (Fox 1996:483).

As an alternative, John G. Fox (1994:228) argued that ballcourts should be viewed as lived spaces that functioned as "facilities of social integration." His view transforms ballcourts from being another building on the landscape to sacred spaces where social actors fulfilled supernatural roles. In order to realize this objective, Fox studied the construction, dedication, use, and abandonment of ballcourts throughout Mesoamerica. He then supplemented this information with primary data from five ballcourts he excavated in the Cuyumapa drainage of central Honduras. These investigations show that the artifacts found in and around the ballcourt are consistent with feasting activities (Fox 1994).

Fox developed a model that linked elite sponsorship of feasts and ballgames played in ballcourts to the negotiation of power relations within the community. Ballcourts are seen as multipurpose facilities where community identity was formed and reproduced. He argued that ballcourts were powerful symbols of community identity and were associated with the creation of the community itself (Fox 1996:485). Unlike previous models, Fox viewed ballcourts as more than mere locations where ballgames were played.

In support of his model, Fox provided a sample of ballcourt caches throughout Mesoamerica. The contents of these caches, according to Fox, fall into two main groups: (1) ritual items which have supernatural associations (e.g., obsidian, worked shell, mercury, etc.), and (2) items associated with feasting (e.g., ceramic vessels, food offerings). These caches provide evidence that the ballcourt was "given life and nurtured as part of the social landscape" (Fox 1996:487).

To address the problem of ballcourt use (i.e., function), Fox excavated five ballcourts in the Cuyumapa drainage in central Honduras (Fox 1994). This area forms what is known as the Southeast periphery and was continuously occupied from the Middle Formative (800-500 BC) until the Terminal Classic (AD 500-1000) (Fox 1994:124). While the dates presented by Fox are calibrated, it should be noted that the chronology discussed by Fox uses period and phase designations from both the Mesoamerican and Lower Central American traditions. Therefore, time boundaries in calendar years will be given where applicable. The earliest ballcourt in this region, identified as PACO 15, dates to the Middle/Late Formative transition, approximately 400-150 BC (Fox 1994:166). Assemblages recovered from these excavations were mostly ceramic serving vessels, many of them fancy bowls. Fox interpreted this more generally as evidence of food consumption (1994:211) and more specifically as evidence of ritual feasting (1994:233). The presence of censers, ceramic vessels used for incense, and figurines provide additional support for Fox's interpretation that ballcourts also functioned as ritual feasting facilities.

Finally, Fox adduced ethnographic and ethnohistoric documentary evidence that connected ritual feasting and ballgames within the ballcourt. He suggested that a link existed between the production/consumption of food and ballgames (1994:235). Evidence of this link comes from iconographic panels associated with ballcourts, which often depict agricultural fertility themes. Fox cited panels at Chichén Itzá (Cohodas 1978) and at El Tajín (Wilkerson 1991) as two examples of iconography where ballgames are linked to food and agricultural fertility (Fox 1994:234-235). He summarized as follows:

> I view the Mesoamerican ballgame as an inter-community ritual in which social and cosmological forces were simultaneously set against each other in conflicting roles.

> At stake was not only the social prestige of the competitors and their sponsors but also the resolution of supernatural forces, and ultimately the perpetuation of agricultural fertility. As such, the game was an unpredictable event which may have provoked in participants a sense of danger, uncertainty, and potential anarchy typical of what Victor Turner (1969) has described for the "liminal" phase of ritual. (Fox 1994:236)

The connection between feasting, cosmological forces, and the ballgame is the key element of Fox's argument. Feasting within the ritual setting of the ballcourt is important not only in the mediation of the supernatural but also is fundamental to making the link between the ballgame and the sponsor of the feast. Fox envisioned that aggrandizers vying for power and prestige could enhance their social and political status through the sequencing of ballgames and the construction of a ballcourt (Fox 1994:236-237). He likened the competitive nature of ballgames to "challenge feasts" (Beatty 1992:272-274) where aggrandizers seek followers through increasingly elaborate displays of wealth (Fox 1996:494).

The model presented by Fox clearly utilizes a different approach from his predecessors. By approaching ballcourts as active, rather than passive, components of the built landscape, much broader questions may be addressed using ballcourt data. For example, did ballcourts function as tools for aggrandizers in their quest for power and prestige? Was ballcourt construction linked to the process of increasing social differentiation? Did the competition inherent in ballgames foment social change? While Fox does not supply definitive answers to these questions, he provided a useful point of departure and a fresh approach for the study of ballcourts.

Distribution and Evolution of Ballcourts in Mesoamerica

Having reviewed some of the major contributions to ballcourt studies, it is useful to look in greater detail at the kinds of information available to archaeologists. A comprehensive study of the spatial and temporal distribution of ballcourts, along with an evolutionary typology is available in Taladoire (1981) and will not be repeated here. Rather, some essential data will be summarized with respect to the genesis, distribution, and use of ballcourts throughout Mesoamerica. These data will serve as a backdrop for the Mazatán data that will be presented in Chapter 4. Figure 3.3 shows the culture and archaeological regions mentioned in the text, while Figure 3.4 shows the location of archaeological sites described here.

Formative Period

Prior to the discovery of the ballcourt at Paso de la Amada, the earliest formal ballcourts dated to the Middle Formative period and were discovered in the Grijalva Basin of Chiapas during salvage projects conducted by the NWAF (Agrinier 1991:175-176). These were the sites of Finca Acapulco, El Vergel, and San Mateo, located along the east bank of the Grijalva River (Figure 3.5). These sites are currently underwater due to dams that were built

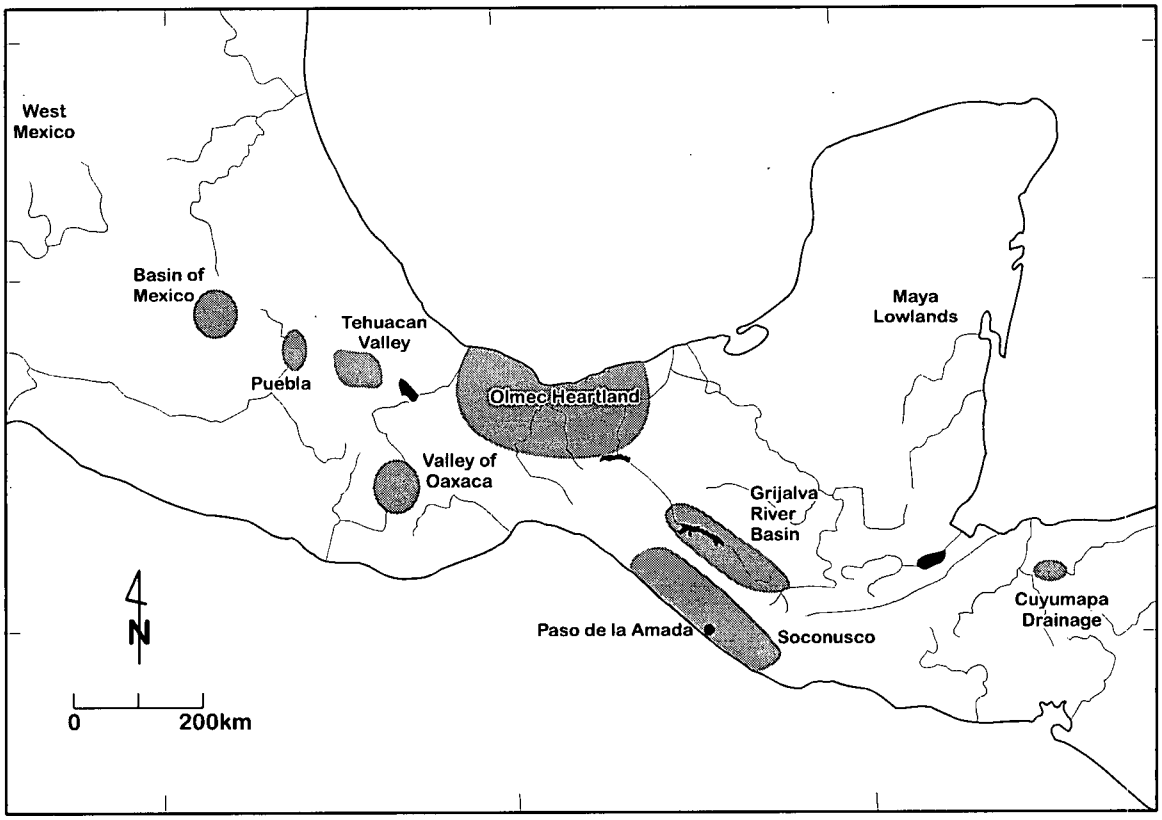


Figure 3.3 Regions of Mesoamerica.

in the 1960s. All three sites were thought to be regional centers during the Middle Formative. There is little data available on these sites, but field notes from the NWAF show that the El Vergel ballcourt (Figure 3.6) was constructed mainly of earth with stone facing. The ballcourt was identified based on its formal characteristics (two parallel range mounds, a central alley, and benches) and from the excavated deposits. The fill from this court was very clean, and contained only a few artifacts. Gareth W. Lowe (pers. comm. 1996) also found a similar ballcourt at San Mateo, which he believed once possessed a structure atop one of the range mounds. All three of these courts were open-ended, that is, they lacked the "I" shape characteristic of later courts (Figure 3.7). These sites, and their ballcourts, all date between 900-500 bc.

In addition to these ballcourts, there are several tentative identifications, which also date to the Middle Formative. The first of these is a possible ballcourt at the Olmec site of La Venta, Tabasco (Wyshak *et al.* 1971), a Middle Formative regional center located in the Gulf Coastal plain. The La Venta ballcourt most likely dates to the early part of the Middle Formative, making it contemporary with the Chiapan examples. However, data to resolve the identification and dating of this ballcourt are not likely to be forthcoming soon. The second example is found at the site of San Lorenzo, an Early Formative site considered by many to be the first urban center in Mesoamerica. This site is thought to be the predecessor of La Venta, and it was the epicenter of Olmec culture. The specific reference here is to the

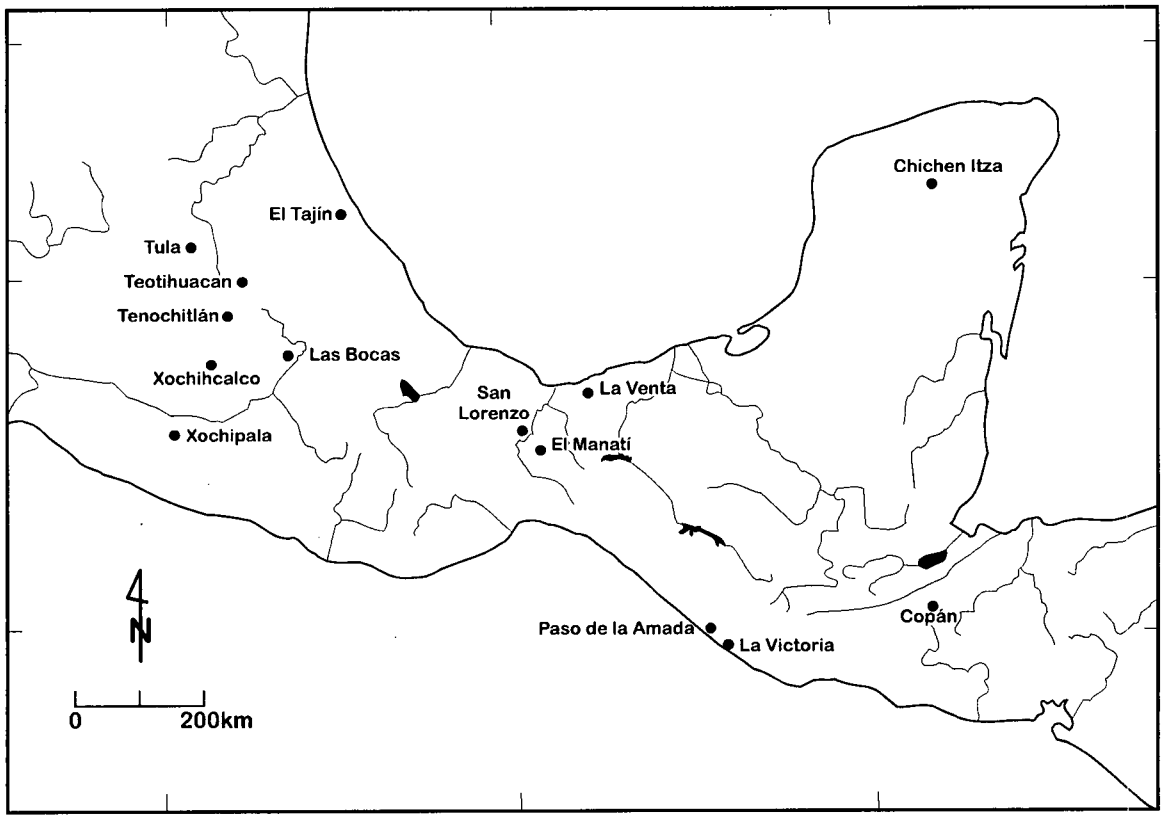


Figure 3.4 Sites Described in the Text.

Palangana (the Spanish word for washbasin, so named for its resemblance to one), a large earthen structure consisting of four separate mounds (Coe and Diehl 1980:62-70).

At San Lorenzo, there are even more substantial problems relating to the identification of the Palangana as a ballcourt. Coe and Diehl (1980:65-68) note problems with determining the construction sequence for the Palangana, largely due to the fact there were multiple occupations and construction episodes. Compounding these problems was the fact that sterile soil was not reached in all the test pits. While this creates interpretive difficulties, it does not affect the basic form of the construction observed by the excavators. Nevertheless, supporting evidence for some form of ballgame (and associated ballcourt) is extremely compelling and merits a brief comment here. In the late 1960s, Michael D. Coe and Richard A. Diehl began the monumental task of excavating portions of San Lorenzo, with the general goal of understanding the genesis of the Olmec phenomenon. This pioneering project discovered the earliest stone monuments in Mesoamerica, including a number of colossal stone heads, defined a ceramic sequence for the Early Formative Olmec region and mapped Mesoamerica's oldest city (Coe and Diehl 1980). Among the discoveries were Early Formative ballplayer figurines dating to San Lorenzo A times (1150-1000 bc) (Coe and Diehl 1980:269) and a life-size basalt statute of a kneeling figure (Monument 34), dating to San Lorenzo B times (1000-900 bc), most likely of a ballplayer (1980:342-343). In addition, colossal stone heads, thought to be portraits of San Lorenzo's Early Formative rulers, were

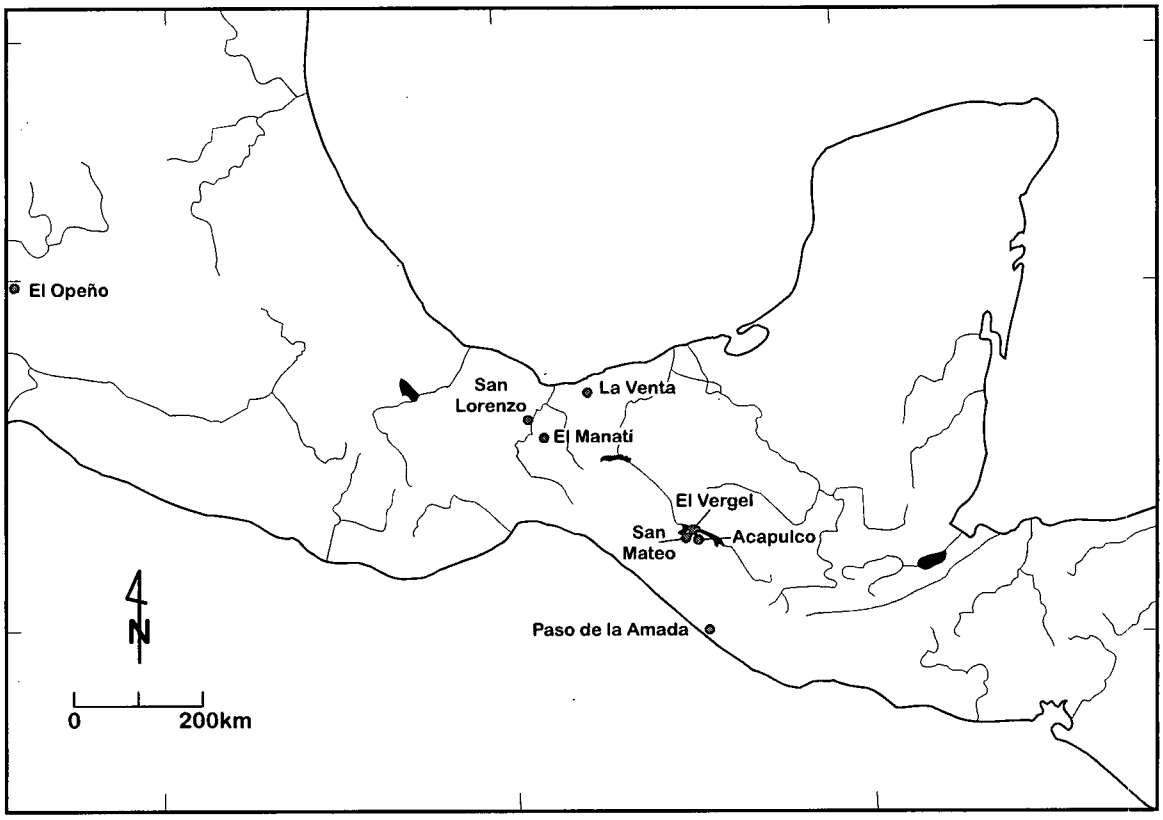


Figure 3.5 Location of Early and Middle Formative Ballcourts and Ballgame Sites.

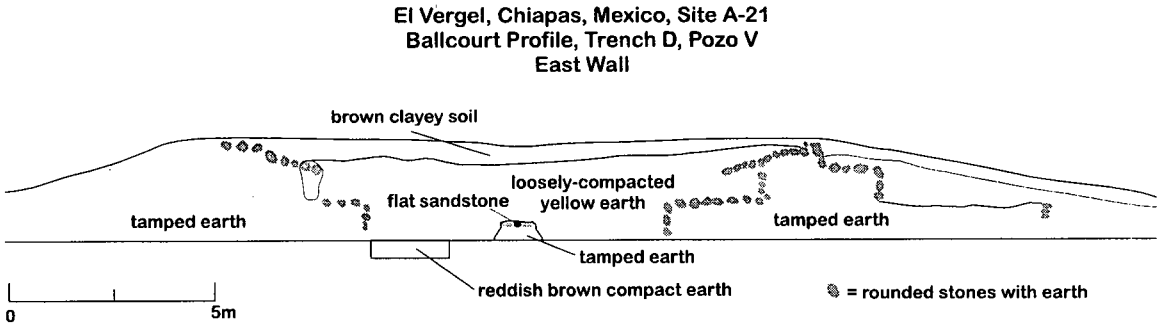


Figure 3.6 Profile of El Vergel, Chiapas, Mexico, Ballcourt.

portrayed with helmets. These helmets resemble the protective gear worn by ballplayers in later times. If Coe and Diehl's interpretations are correct, then the rulers *were* ballplayers. Although this hypothesis is difficult to test archaeologically it does indicate a very close connection between ballplayers and rulership within the first complex societies in Mesoamerica. Whatever doubts initially existed about the Palangana having functioned as a ballcourt, Diehl and Coe (1996:23) later state unequivocally that the Palangana *was* a ballcourt. This has important implications for the present study. If the Palangana was a

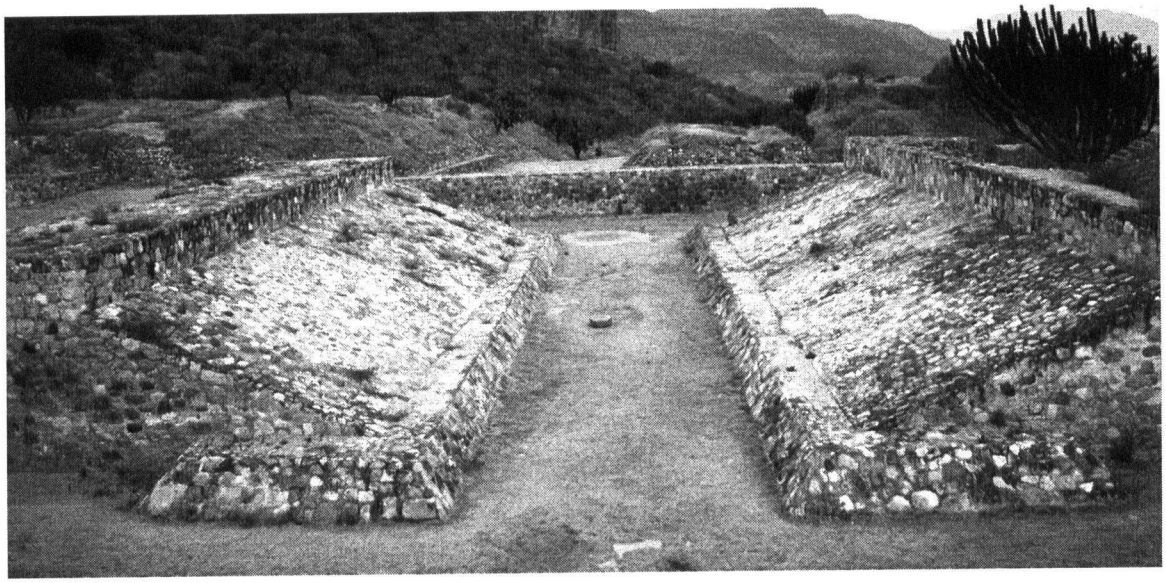


Figure 3.7 An "I"-shaped Ballcourt at Yagul, Oaxaca (Courtesy of Chantal Nussberger).

ballcourt and dated to the Early Formative, then the earliest ballcourts should be found in and around San Lorenzo, in the Gulf Coast Heartland. Further, this ballcourt may be related to the Paso de la Amada court, the two culture areas already sharing numerous other similarities.

Returning for a moment to another example, the only other clearly-defined Middle Formative ballcourt was found at the site of La Libertad, in southern Chiapas (Miller 1976). This court bears structural similarities to the Paso de la Amada one, possessing benches made of clay and a narrow, prepared alley. It is interesting to note that the majority of the early ballcourts recorded to date are found in Chiapas and all are earthen constructions with perhaps some stone facing.

By the Late Formative (400 bc - AD 100), ballcourts were pan-Mesoamerican, being found in Honduras (n=1) (Fox 1994), the Tehuacán Valley (n=14) (MacNeish *et al.* 1972), Oaxaca (n=24) (Flannery 1975; Kowalewski *et al.* 1991), Chiapas (n=4) (Lowe 1959), Puebla (n=2) (García-Cook 1976), and Western Mexico (n=7)(Weigand 1991). These 52 examples are not so remarkable for their number as their areal extent. This suggests that by the Late Formative the ballgame had spread from the Gulf Coast-Chiapan interaction sphere to a much wider area. Moreover, ballcourts from the Late Formative appear to conserve the form (except Western Mexico) of their predecessors—open-ended courts consisting of two parallel range mounds with a narrow alley between them.

Ballcourts in Central Mexico are conspicuously absent, perhaps due to the dominance of the Teotihuacán state (Santley *et al.* 1991:11). However the lack of formal ballcourts does not necessarily mean the game was not played. Indeed, Jeffery Parsons (1971), in his survey of the Basin of Mexico, identified a structure that may have been a Middle Formative ballcourt. If a variant of the ballgame was played at Teotihuacán it probably involved the use of bats or sticks, because formal masonry ballcourts were absent (Taladoire and Colsenet 1991). Iconographic analyses of the Tepantitla residential murals at Teotihuacán support this

claim (Uriarte 1992:117), and indicate that the ballgame may have retained some of its traditional paraphernalia, such as hachas and yokes. Whatever the case, ballcourts were built around the periphery of the Teotihuacán state and the ballgame continued, in one form or another, at Teotihuacán itself.

Another significant, if somewhat obvious, innovation occurred during the Formative period (if not earlier), *viz.*, the processing of rubber in order to make balls for the game. Archaeological evidence for this process has been recovered at the site of El Manatí, where entire rubber balls have been found in waterlogged deposits which date to around 1250 bc (Ortiz *et al.* 1992:63; Ortiz and del Carmen 1994). Besides providing strong evidence for the functional aspect of the ballcourt as such, these latex balls exhibit a high degree of precision in their construction. Little research has been conducted on the history of rubber procurement and processing by indigenous peoples. I address this subject in more detail later, but at this point it is worth noting that the location of the earliest ballcourts correspond to the natural distribution of the indigenous rubber tree, *Castilla elastica*, an observation originally made by Theodore Stern (1950:4).

In sum, the Formative period saw the genesis and proliferation of ballcourts throughout Mesoamerica. The basic form of the ballcourt was developed and was passed on with few modifications. When coupled with ancillary evidence, such as ballplayer figurines, rubber balls, and stone portraits of rulers wearing ballplayer gear, two points become clear: (1) ballcourts, as monumental features of the architectural landscape, made their first appearance in Chiapas and the Gulf Coast, and (2) the ballgame and the ballcourt had supernatural associations and power—a power closely associated with rulership.

Classic Period

The number of ballcourts grew exponentially during the Classic period to cover all of Mesoamerica. This expansion had its roots in the Formative period and was due, in large part, to the association between ballcourts and elite ritual activity. The Classic period, as its name implies, saw the rise of the great traditions of Mesoamerica. This period was marked by urban growth, empire building, large-scale specialized economies, and dynastic rule. By this time ballcourts were entirely masonry structures, with the exception of superstructures on top of the range mounds (though most of these were also masonry construction). Ballcourts were part of every major and most minor civic-ceremonial complexes, again with the exception of Teotihuacán.

Taladoire (1981:335) in his comprehensive survey recorded over 318 ballcourts for the Classic period in Mesoamerica. Stylistic diversity of ballcourts is evidenced by the number of types defined by Taladoire and others who have attempted to analyze the diversity of forms. However, the characteristic "I"-shape becomes the dominant form during this time. Regional ballcourt traditions, as might be expected, developed among the lowland and highland Maya, Zapotec (Oaxaca), Huastec (Gulf Coast), Western Mexican and U.S. Southwest regions.

Ballcourts began to have ornate sculptures, panels, and other accessories during this period. The ballcourt at Copán provides a archetypal example. A series of three beautifully sculpted stone macaws adorn the benches. Sixteen other elaborate macaws line the molding

of the buildings atop the ballcourt (Freidel *et al.* 1993:365). Stone markers, usually carved with ballgame scenes and occasionally hieroglyphs, were placed in the central alley of the ballcourt at equidistant points. Caches of offerings associated with the dedication of the court are usually found below these markers. The benches sloped at a moderate angle (<45°) towards the lateral walls, perhaps to aid in keeping the ball in play. The slope of the benches gives subtle clues as to the rules of the game, suggesting that the perpetual motion of the ball was very important if not the primary rule of the game. While this has obvious metaphorical implications in terms of the motion of the heavens, it is likely the design of Classic period ballcourts had evolved towards a more "player friendly" court. An analogy here would be the addition of nets to basketball hoops. The original basketball game used closed peach or apple baskets (hence the name), which slowed the game considerably.

The Copán court also contains glyphic panels and long-count dates, providing archaeologists with a unique glimpse at the associations between the ballgame and the supernatural. The players depicted in the Copán markers, argue Freidel and his colleagues (Freidel *et al.* 1993:367), *are* the hero twins of the *Popul Vuh* playing a game against the Lords of the underworld. Their defeat of these gods permitted the creation of the earth—the very creation in which the Classic Maya existed. Adjacent to the south end of the ballcourt rise Copán's famous hieroglyphic stairs, the longest stone inscription in the New World. While the meaning of these glyphs is still being deciphered, the stairs tell the history of Copán's royal families. This history begins not on the first stair, as originally thought, but in the ballcourt, where creation itself took place. The stories of war, conquest, and royal succession were then told from the base of the hieroglyphic stairs. To tell Mayan history, therefore, one must begin at the ballcourt (Freidel *et al.* 1993).

Similar associations between the supernatural and the ballcourt can be seen in other Classic period ballcourts in the Maya region and beyond. At El Tajín in the Huastec culture area of the northern Gulf Coast, panels from ballcourts show rituals involving sacrifice, especially by decapitation (Wilkerson 1991). These rituals are interpreted as supplications to the gods for the continued success of maguey and pulque production.

In addition to the changes outlined above, sunken ballcourts began to appear toward the end of the Classic period. In addition to having functional utility, this modification would have increased the drama of the ballgame by setting the players lower than the spectators. Despite all these modifications, the ballgame throughout the Classic period retained its characteristic form of two range mounds (lateral walls), benches, and a central alley. Ballcourts continued to be located in elite areas of sites, usually at the heart of the civic-ceremonial complex. The association of the ballgame with creation is evident in the Maya region. Other regions also exhibit a strong connection between the ballgame and the supernatural. Ballcourts, already pan-Mesoamerican by the Late Formative, multiplied in number and importance. In short, the Classic period saw the reification of the ballcourt as a permanent feature not only of the architectural landscape but of the cultural landscape as well. Although stylistic and regional variation occurred in ballcourt design, a common basic layout that was adhered to during the Classic period and in subsequent times.

Postclassic Period

If the Classic period marked the crystallization of the Mesoamerican ballcourt, the Postclassic period (AD 900-1520) ushered in a new age of monuments to the ballgame itself. Massive ballcourts were constructed at Chichén Itzá, Tula, and Xochicalco, among other sites. More ballcourts were built in highland Guatemala than at any other time in the history of the Maya with practically every site having one (Fox 1991:213). Ballcourts are found as far away as the Antillies in the Caribbean and the American Southwest. Ballcourts and ballgames were also recorded in written histories. Ballgames were used to divine prophesies. Huge sums were wagered on the outcomes, with nobles sometimes betting all their property and privileges on one game. The popularity of the game is accentuated by the fact that 16,000 rubber balls were sent as tribute each year to the Aztec capital of Tenochitlán from the surrounding realm (*Codex Mendoza* 1938).

Architectural additions during the Postclassic period included tenoned rings or hoops mounted vertically on the lateral walls of the ballcourt. The narrow apertures of these goals imply that the ball underwent a corresponding decrease in size. A number of Aztec codices from this time period depict opposing cosmological forces playing ballgames. Some ballcourts, notably those at Tula, possessed semi-subterranean entrances used to enhance the ritual aspects of the game.

From these widespread changes some interesting patterns emerge. First, by the beginning of the Postclassic period, a wider array of ballgames were being played, as evidenced by variations in ballcourt forms. Second, while the actual number of ballcourts increased throughout Mesoamerica, this growth occurred in specific areas, such as the Maya Highlands of Guatemala and Chiapas. Santley *et al.* (1991) postulated that this asymmetrical growth may have been the result of the degree of ballgame politicization—the more elites vying for control of a territory, the greater the number of ballcourts. Conversely, in areas with a high degree of political centralization, such as the Toltec or Aztec empires, the frequency of ballcourts declined. Third, ceremonial ballcourts, such as the Great Ballcourt at Chichén Itzá, were so large that they call into question their own functionality as ballcourts. Such courts may have been built as monuments to the ballgame itself.

With these general patterns as a backdrop, the Postclassic offers a unique opportunity to study the life-history of ballcourts. It comes as no surprise that researchers have concentrated on Postclassic variants of the ballgame (see Scarborough and Wilcox 1991). As stated earlier, this approach has created a number of static interpretive paradigms for ballcourt studies. A similar situation exists in North American archaeology with the use of the so-called *direct historical approach.* In brief, this involves using historically-observed patterns of behavior of native peoples as an interpretive framework for archaeological information. The benefits and shortcomings of the direct historical approach will not be debated here, rather, I present this information as a caveat to the conclusions derived from the study of Postclassic ballgames and ballcourts.

Caveats aside, research into Postclassic ballcourts has provided useful information on ballcourt-related structures, such as sweat baths, palaces, and skull racks (Taladoire 1981). In the case of the *Popul Vuh*, we also have a historical document that is complemented by archaeological data on ballcourts, settlement patterns, and site excavations (Fox 1991).

Postclassic courts are often the best preserved examples of ballcourts available for study. Many of them have been reconstructed and afford good opportunities to examine the context of the ballcourt in terms of the larger site. Although Taladoire (1981:335) records only 128 ballcourts in his sample, the work of Fox (1991) and others suggests that the actual number of Postclassic ballcourts was much higher.

In short, the ballcourt, already a Mesoamerican tradition of over 2000 years by the Postclassic, continued to evolve in its form. A variety of historical sources, such as codices and the *Popul Vuh*, was produced during Postclassic times. When taken together, this evidence shows the extent to which the ballgame was institutionalized as a part of all Mesoamerican cultures and had begun to spread beyond its traditional borders.

Archaeological Evidence

Ballcourt studies have been greatly enhanced through supplementary evidence, such as ethnohistorical documents, hieroglyphs, and codices. Three other major forms of archaeological evidence merit discussion here: figurines, pottery, and stone monuments. Most of these provide information relating to the ballgame, its rules, and associated rituals. When coupled with the archaeological data from ballcourt excavations, all of these ritual items point to a strong connection between feasting and ballgames. This connection which will be explored in more detail in the next chapter.

Figurines

Figurines are a component of practically every archaeological assemblage in Mesoamerica, from the Early Formative period to the Postclassic. However, despite their quantity, these important ritual items remain poorly-understood in terms of their production and function. Of concern here are the depictions of ballplayers, ballcourts, and other ballgame-related items in this plastic medium. The vast majority of figurines are clay; a small minority are made of jade or other precious stones.

Figurines also provide crucial evidence for the ballgame in the absence of formal ballcourts, especially during the Early Formative (Ekholm 1991:242). Ballplayer figurines, first found as burial offerings in the shaft burial tombs of Western Mexico, date to around 1800 BC (Oliveros 1992). One set of figurines from the site of El Opeño, Michoacán, was deliberately arranged to form a ballgame scene, with the players depicted in protective garb (Figure 3.8). Several of these players hold what seem to be bats or paddles, suggesting that this early variant of the ballgame involved sticks (Oliveros 1992:43-44). All players appear to be wearing protective knee pads on one knee and are helmeted. Although no formal ballcourts are known in Western Mexico at this time, this figurine scene provides compelling evidence that the ballgame was played as early as 1800 BC, most likely in an informal ballcourt.

Another set of figurines, found at the site of Tlatilco in Central Mexico, depict individuals wearing belts, hand guards, and knee pads. These figurines, which date to roughly 1000 bc, were argued have been ballplayers (Coe 1965). Some of these figurines also possessed headdresses and masks. Another Tlapacoya figurine, dating to the Ayotla

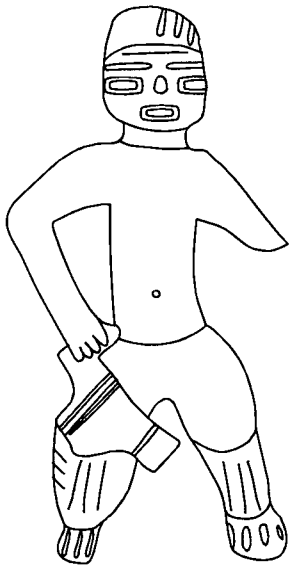


Figure 3.8 Ballplayer Figurine from El Opeño, Michoacán (after Oliveros 1992).

phase (1250-1000 bc), appears to be wearing the protective gear of a ballplayer (Bradley and Joralemon 1993:18). More figurines in this tradition were found in burials at Las Bocas, Puebla, and at sites in Morelos (Ekholm 1991:242). San Lorenzo also has possible ballplayer figurines dating to this same time period (Coe and Diehl 1980: 269). Late Formative figurines from Xochipala, Guerrero, (Griffin 1972), Ticoman (Piña Chan 1955), and Cuicuilco (Matos 1968) continued in this tradition.

Ekholm (1991), in her analysis of ballplayer figurines, suggested that the absence of ballcourts in these areas may be indicative of a ballgame that did not require a court. She argued, therefore, that ballcourts are unlikely to be found since they were not required for some variants of the ballgame. She cites ethnohistoric descriptions of the variety of ballgames played at contact times as proof of the diversity of the ancient game. However, the recent discovery of an Early Formative ballcourt at Paso de la Amada suggests that no hard-and-fast rule exists for correlating figurines with the presence of formal ballcourts because no figurines have been yet recovered that resemble ballplayers or depict ballgames.

By the Classic period, sufficient numbers of figurines relating to the ballgame permit some elementary reconstruction of the rules of the game, the gear worn by ballplayers, and some of the ballgame ceremonies and rituals (Ekholm 1991:243). In Nayarit, Western Mexico, *maquetas* or ceramic models containing figurines, depict the ballgame in progress (Leyenaar 1978:19). These models even give clues to effective game strategies! Even regional variants of the ballgame can be discerned from figurines. These examples show the variety of information available from figurines and some of the effects they have had on interpretation (Ekholm 1991:245).

Postclassic figurines are rare, though this may be due to preservation factors and looting rather than a true reduction in frequency. Figurines may have been replaced by codices or

some other medium of expression, but given the widespread use of figurines in Postclassic households, this seems unlikely. Ekholm (1991:248) argues that figurines may have functioned like modern Catholic saints, being used in household rituals. Whatever the case, it is interesting to note that in the Early and Middle Formative and through the Classic period, ballplayer figurines were commonly found as burial offerings. This situation did not prevail for the Postclassic, at least in Central Mexico.

. Another set of interesting figurines comes from the site of Xochipala, Guerrero. The assemblage dates to the Early-Middle Formative transition and contains a number of female ballplayer figurines. These figurines are depicted in full ballplayer regalia, including a protective mitt or glove, buttocks belt, chaps, and boots (Bradley and Joralemon 1992:44 and Fig. 22). These figurines clearly show that women were playing the ballgame at least by the Early Formative if not much earlier. Their role in later times, however, is less certain due to a paucity of examples.

A great number of ballplayer figurines and other such items were brought together for an exhibition in Leiden, Holland, in 1988. This permitted for the first time some detailed observations on the diverse range of exhibited materials. Leyenaar (1988:259-264) noticed that in mold-made pieces from the Classic period the eyes of ballplayers appeared to have the shape of coffee beans. He initially attributed this effect to repeated long-term use of the same ceramic mold in the construction of vessels and figurines. However, he further observed that the same "coffee-bean" eyes were present on yugos or yokes carried by the ballplayer figurines. He suggests that coffee-bean eyes are therefore associated with beheading and human sacrifice (Leyenaar 1988:261). Thus even the eye styles of figurines may provide important clues as to the nature of the ballgame.

Pottery

Ceramic vessels offer another glimpse into the complex realm of the ballgame. However, pots which specifically depict ballgames or ballplayers are confined to the Classic and Postclassic. Most of the best-preserved specimens come from the Maya region, often showing ballgame images associated with sacrifice, decapitation, and death (Miller and Houston 1987:59). Interpretation of these scenes has been informed by the *Popul Vuh* (see Schele and Freidel 1991). The merits and shortcomings of this approach have already been discussed. However, one important aspect of these vessels has been overlooked until recently—their residues.

Polychrome vessels, some with ballgame scenes, have been found to contain cacao residues, the main ingredient in chocolate (Hall *et al.* 1990; Coe and Coe 1996:49). Complex texts often appear on these pots. When rollout photos are taken, the glyphs on these vessels can be deciphered. The texts contain the words for "cacao", as well as "ballplayer" and the verb to play ball, *pitz* (Houston and Miller 1987). Cohodas (1991:279) has noted a connection between the ballgame and cacao. He attributes this association to a ritual and economic interaction between Highland Mexico and the Maya Lowlands, where cacao and the ballgame were part of the Lowland trade package. In brief, cacao was the main ingredient in chocolate, a highly prized beverage consumed at feasts throughout Mesoamerica. The tree that bears the cacao pods is found in lowland tropical environments.

Despite that fact that few intact vessels are found in archaeological sites, sherd assemblages found adjacent to ballcourts have connected feasting with the ballgame (Fox 1994) Ceramic types and varieties can be used to date ballcourt construction, use, and abandonment. Thus, ceramics provide another useful means of understanding the ballgame and ballcourts.

Ritual Paraphernalia

In addition to figurines and ceramics, numerous other items provide insights into the ballgame. Most of these are ritual items made of stone and are largely confined to the Classic and Postclassic. *Hachas*, or thin stone heads, provide strong evidence that decapitation and sacrifice were involved in the ballgame (Figure 3.9). *Palmas*, or palmate stones, are thought to represent actual protective gear worn by ballplayers or may have functioned in tandem with belts (Figure 3.10). *Yugos,* or yoke stones, may represent the protective belts worn by ballplayers (Figure 3.11). Leyenaar (1978:70-71), argued based on ethnographic studies of modern ballplayers, that the belt was the most important element of all the ballplayer gear. He observes that the belt prevents the buttocks from spreading when the player slides on the court floor.

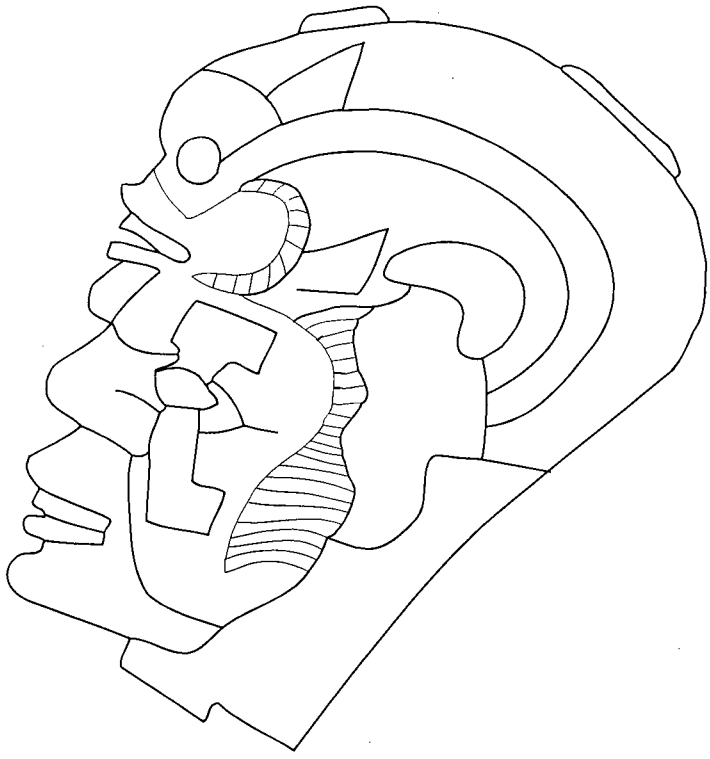


Figure 3.9 "Hacha" from Gulf Coast, Classic Period.

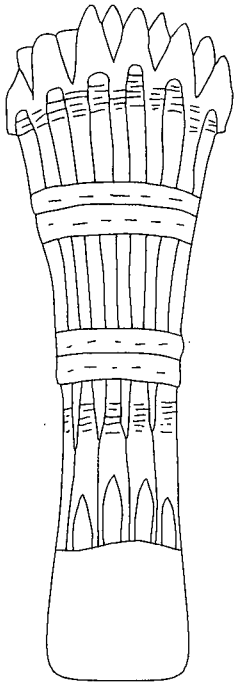


Figure 3.10 "Palma" from Gulf Coast, Classic Period

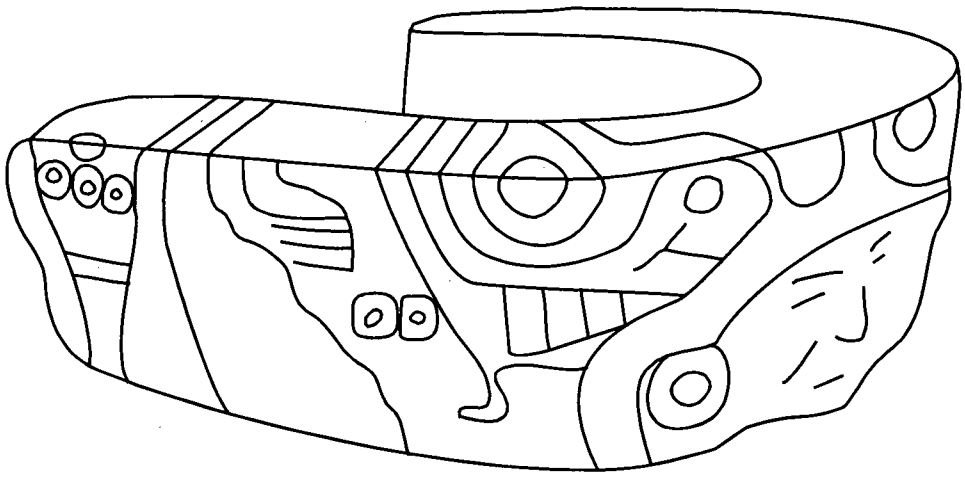


Figure 3.11 "Yoke" Stone from Gulf Coast, Classic Period

Stone stelae and bas relief panels provide excellent sources of information for several reasons: (1) calendar dates for stelae, panels, etc., can be fixed with precision since they often appear on the item itself, and (2) they usually contain hieroglyphic or iconographic information which can be interpreted or read as text. As previously discussed, stelae and panels from the Maya Lowlands recorded the histories of kings, ballgames between the gods and mortals, wars, sacrifices, and territorial acquisitions, to name just a few. Glyphs from stelae and other stone monuments have given us the Mayan words for ballplayer, ball, and

the verb for playing ball. Some of these words survive even to this day (Freidel *et al.* 1993:337-339).

All of these items provide important clues about the ballgame. When used in conjunction with other archaeological information, a picture of the ballgame emerges which shows a game played for a variety of reasons and possessing a multiplicity of functions. For this reason, ballcourts must be viewed as not just the location of ballgames but multipurpose facilities for social and political integration (Fox 1994).

Summary

This chapter has briefly reviewed the history of research and the evolution of ballcourts, as well as provided some background on the kinds of evidence used in ballcourt studies. A "founder effect" shaped ballcourts studies from the beginning. The interpretations of dominant scholars in the field, such as Seler and Krickeberg, were handed down to subsequent researchers. This resulted in a situation analogous to the direct historical approach, where interpretations of archaeological data were derived from ethnographic and ethnohistoric records. From early on, research was split into several different foci: typology and classification, symbolic interpretation, and political interaction studies. Most of the modern research on ballcourts can also be divided into these three traditional categories. The recent research of John G. Fox (1994; 1996) provides a fresh alternative to traditional ballcourt studies.

A general review of the origin and spread of ballcourts revealed that by the Early Formative, ballgames were a part of many Mesoamerican societies. By the Late Formative, ballcourts were pan-Mesoamerican. The Classic period ushered in a new age of masonry ballcourts in the now-familiar "I"-shaped form. Stelae recorded the importance of the ballgame to the Maya. By the Postclassic, there were monuments to the ballgame itself. Codices documented the rules of the ballgame and suggested that human sacrifice was an important component of the game.

The kinds of supporting evidence, such as figurines, ceramic vessels, and stone monuments were reviewed. This evidence shows that ballgames were supernatural events, where mortals were "gaming with the gods" (Freidel *et al.* 1993). Although most of this evidence relates to the ballgame itself, I argued that this approach provides a strong connection between feasting and the ballgame. Several important questions are raised by the introduction of this evidence. For example, were the feasting rituals sponsored by elites? If so, were elites able to claim a connection between the ballcourt, the supernatural, and themselves? Were ballcourts, therefore, "tools of the political trade," as claimed by de Montmollin (1997:39)?

While little is known about Early Formative ballgames, figurine scenes placed as funerary offerings suggest an open-field variant of the ballgame was played by both men and women throughout Mesoamerica probably by late Archaic times. The construction of permanent architectural facilities dedicated to the ballgame during the Early Formative period represents a significant innovation. It suggests a strong association between the emergence of social and political inequality and the origin of the pan-Mesoamerican ballgame tradition. The essential form of ballcourts is conserved with few modifications for

over three millennia. This remarkable consistency is in accord with the idea that ballcourts have been closely associated with elite ritual activity since their inception and this association was continued throughout their history.

CHAPTER IV

THE MAZATAN REGION AND THE ORIGINS OF SOCIAL AND POLITICAL COMPLEXITY

Descriptions of the Soconusco range from a tropical paradise to a hot, desolate, and unforgiving place. This region, once prized for its chocolate, has enjoyed economic prosperity from Early Formative times up to the present. The name for the region is derived from the Aztec word *Xoconocho*, meaning "bitter prickly pear" (Becarra 1930). This moniker is perhaps an Aztec metaphor for the harshness of the climate. The Soconusco extends from Mapastepec, Chiapas, in the northwest to Ayutla, Guatemala, in the southeast (Figure 4.1). The region is comprised of five distinct environmental zones that occupy a narrow corridor between the Pacific Coast and the Sierra Madre mountains (Figure 4.2). The entire region shares a hot, humid climate with marked wet and dry seasons. Today, the Soconusco is among one of the most productive growing regions in Mexico. A similar productive environment existed when complex societies evolved out of previously egalitarian groups, 3000 to 3500 years ago (Clark 1994:43). The productive capacity of this environment likely played a critical role in the transition to complex society. The remarkable preservation of many of the early sedentary villages in the Soconusco makes this region an exceptional laboratory for the study of emerging complexity.

Environment

A comprehensive review of the Soconusco environment has been undertaken by Clark (1994) and will not be repeated here. Rather, a general introduction to the environmental zones of the Soconusco will be provided. For purposes of simplification, the 15 environmental subzones can be grouped into five major zones (following Clark 1994): (1) the littoral zone; (2) short-tree savanna; (3) Cantileña swamp; (4) forested coastal plain and; (5) Piedmont forest. More detailed descriptions of the environmental subzones can be found in Breedlove (1981), Coe and Flannery (1967), Eccardi and Alvarez de Toro (1987), Helbig (1964), McBryde (1947) and Voorhies (1976). The zone summaries presented here will focus on the cultural-use aspects of the natural environment.

Due to its low elevation and proximity to the Sierra Madre mountains, the Soconusco is a hot, humid region, with temperatures averaging 26°C annually for the Mazatán area. Daytime maximums often reach a sweltering 36°C, especially in April and May. The

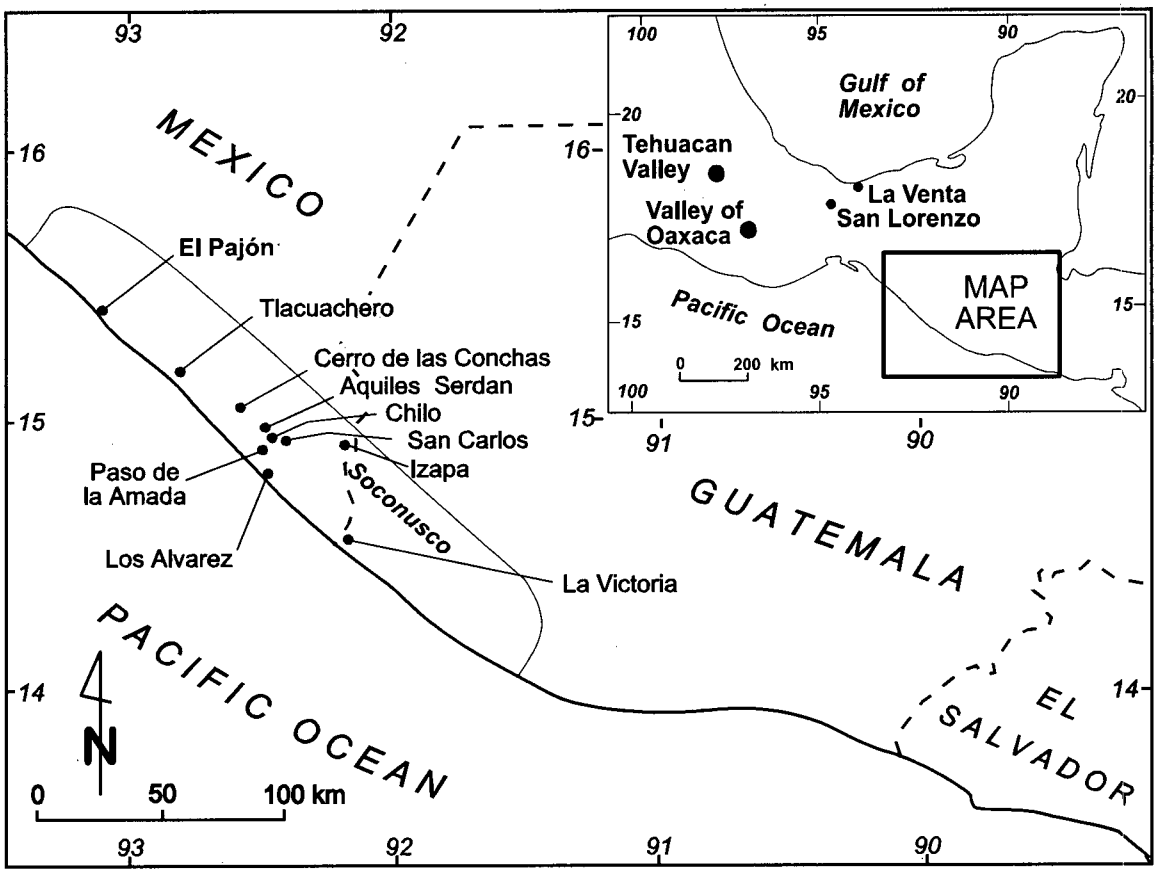


Figure 4.1 Soconusco Study Region and Sites (Courtesy of Michael Blake).

mercury rarely dips below 20°C at any time of year, the coolest months being December and January. Rainfall varies widely due to local topography and proximity to the Sierra Madre. For example, Mazatán receives 1500 mm of rainfall annually; the volcano Tacaná (elevation 4064 m), only 30 km away receives between 5000 and 6200 mm of precipitation (Lowe *et al.* 1982). The width of the coastal plain and the altitude of the mountains are the main mitigating factors. In general, the northern aspect of the Soconusco is less humid and somewhat cooler; the southern portion is wetter and more humid.

Highly pronounced seasonal variations in rainfall have dramatic effects on the environment. Fully 90 percent of the rainfall occurs between May and October (Clark 1994:47). During the rainy season, vegetation flourishes, rivers engorge and flood their banks, and the swamp and estuary system reaches its maximum extent. In contrast, during the dry season (of almost equal length) the ground bakes to hard-pan, vegetation withers, and the swamp retreats. Recent agricultural activity has destroyed much of the indigenous vegetation in favor of cash crops, such as sorghum and sesame. Banana and sugar cane plantations dominate the modern landscape. Consequently, the swamp and estuary ecosystem is disappearing at an alarming rate.

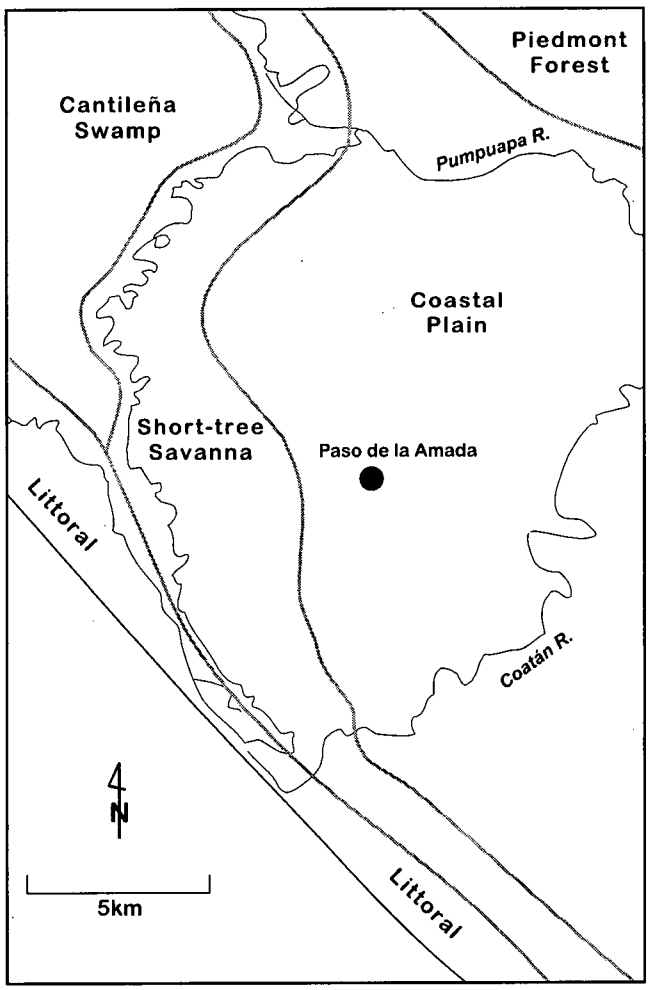


Figure 4.2 Environmental Zones of the Mazatán Region.

All modern crops (with the exception of small-scale agrarian plots) are sustained by irrigation during the dry season. The protracted length of this season would have placed constraints upon prehistoric cultivation, limiting it to a small band parallel to the coast (Clark 1994:47). The dry/wet season dichotomy results from a number of macro-climatic factors, such as the location of high pressure off the Pacific Coast and the equatorial countercurrent in the North Pacific ocean. The Soconusco lacks the continental polar fronts, or Rossby waves, characteristic of the rest of North America. Rarely, a strong polar front will blow north winds across the Isthmus of Tehuantepec. This condition, known locally as a *norte*, brings noticeably cooler temperatures to the Soconusco. However, its influence is short-lived, and does not produce any long-term consequences for agriculture.

The hydrological profile of the Soconusco consists of numerous short rivers that quickly drain the Sierra Madre then back up against the swamp and estuary. As the rivers near their termini, they turn parallel to the coast. This creates long, narrow sandbars that can stretch for many kilometers. The flow rate of these rivers is seasonally variable. Sand and other

sediment can occlude the desembouchments of these rivers during the dry season. This effectively closes the estuary and limits the range of bivalves and shrimp, which prefer brackish water (Clark 1994:63). In contrast, increased flow during the wet season makes fording of rivers difficult if not impossible. In the Mazatán region, the meandering of the Río Coatán has created a number of overflow channels or bayous. The site of Paso de la Amada takes its name from one of these overflow channels (Clark 1994:49). The alluvium deposited by the Río Coatán and other rivers gives the coastal plain some of the most fertile soils in Mexico.

The alluvium of the coastal plain contains no rocks, with the exception of some cobbles in river-beds. Therefore, all rocks found in archaeological sites were imported. This is the case for obsidian, which comes from three volcanic sources in highland Guatemala: Tajumulco, El Chayal, and San Martín Jilotepeque (Clark and Lee 1984). While abundant throughout the coastal plain, specific clay sources for pottery have not yet been pinpointed (Clark 1984:52). The recent work of Arroyo and Neff (1996) on pottery sourcing demonstrates that ceramics were locally manufactured, though they circulated between communities in the Soconusco.

The Littoral Zone

The Pacific Littoral of Chiapas is characterized by long stretches of sandy beach interrupted by the occasional river mouth. Relentless heavy surf and steep beaches generally preclude reliance on ocean resources except at the termini of the Coatán and Huixtla Rivers (Voorhies 1976:3; Clark 1994:62). As mentioned earlier, the flow rate of these rivers decreases to the point where they become sealed off by sand during the dry season (Clark 1994:63). Three subareas compose this biotic community: beach, estuary/mangrove, and madresal. Along the beach and adjacent sandbars, scrub vegetation dominates. Few plants tolerate the sandy soils and heat of this subzone. The eggs of the green sea turtle, along with crabs and bivalves would have been important food resources (Feddema 1993:10; Clark 1994:62).

The adjacent estuary is actually not a true estuary but a herbaceous freshwater swamp known as "sweet water," the name derived from the Spanish term for freshwater, *agua dulce* (Clark 1994:63). The estuary and associated mangrove community is among the largest in Mexico. This ecosystem is teeming with life, as it is home to dozens of fish, reptile, bird and mammal species (see Feddema 1993, Appendix 1 for a full list). Most formidable of these creatures are crocodiles that are still hunted for their hides (Clark 1994:64). The productivity of this environment would have provided ample resources to support the small communities of Early Formative Soconusco (Blake *et al.* 1992).

The estuary is bordered by a community of black mangrove known as *madresal*. This zone was an important source of mangrove and palm trees used for construction materials (Clark 1994:65). As the name "mother of salt" implies, salt manufacturing was also undertaken in this zone in the past (Andrews 1983:68). This zone is seasonally inundated, with water levels rising to over 2 m in depth during the height of the monsoons.

Short-tree Savanna

An area of grassland interspersed with low trees, known as short-tree savanna, is found as one moves inland from the coast. Occasionally, these trees form a small forest with a grass understory (Breedlove 1981:16). One species of tree usually dominates these groves. When these groves are viewed from a distance, they look like small hillocks, and are known locally as *mogotes* (the Spanish word from small hill). In recent years, this zone, especially the open savanna, has been transformed by agricultural and cattle ranching activities(Clark 1994:66-67). Prehistorically, mogotes would have been important sources of palm thatch. Gourd trees, oaks and leguminous species are common (Feddema 1993:11). Numerous species of deer, rabbit, peccary, armadillos, snakes, and foxes inhabit this zone (Helbig 1964).

Cantileña Swamp

A unique and rapidly vanishing ecosystem, the Cantileña swamp forms the inland extension of the estuary of the littoral zone. The swamp remains a fascinating ecosystem, rarely seen by those living outside the region. Fishing is still the main activity in the swamp today. Cooperative fishing expeditions usually are organized at the household level—a number of five to six persons seems optimum. In 1993, I had the rare fortune to participate in a fishing expedition to the interior of the Cantileña. Following Clark (1994), I include a description of this expedition because it provides the reader with a sense of the productivity of this ecosystem.

Access to the swamp was through seasonally inundated areas, known as *pampas*, which support savanna vegetation (Feddema 1994:11). Once past the pampas, waist-deep murky water area was traversed. This zone is choked with floating hyacinths, introduced in the early part of the century (Feddema 1993). Canoe travel is possible in higher water; however, this foray was made in mid-February when water levels were lower. The fishermen sought an area of *agua clara* or clear water along the margin of the swamp. This is where the fishing is said to be optimum, and avoids the time-consuming journey to the center of the swamp. All fishing was done using nets, which were set in a purse-seine fashion. In a six-hour stretch, we caught 5 *casquitos* (small turtles), 2 *cruzayuche* (snapping turtles), 4 armados (alligator gar), about two dozen mojarra (whitefish), a number of snails, and a boa constrictor (which was released). Upon our return, this catch was divided equally and provided an ample meal for all participants. The older fishermen complained about the general decline in the number of fish in recent years.

In the interior of the swamp there are floating islands of trees, known as *balsas*. These trees maintain their posture through a network of interconnected branches (Feddema 1993:11; Clark 1994:71). At first glance, these islands look like mogotes, but closer inspection reveals they actually float! An excellent description of these and other features of the swamp is available in Alvarez de Toro (1985).

Evidence of the long-term existence of the swamp comes from Early Formative deposits. Faunal assemblages and ceramic effigy vessels reflect the creatures that inhabited the swamp.

The enormity of the swamp, its proximity to Paso de la Amada, and the bounty it produced, suggest that it was the primary food-procurement area for Early Formative Mazatán.

Coastal Plain

Once covered with lush tropical forest, the coastal plain forms a large portion of the study area. This zone has been highly modified in recent centuries by agricultural activities and, consequently, little of the indigenous forest remains. With the introduction of bananas, sugar cane and cotton to the region, much of the climax forest was destroyed. The coastal plain consists of too many subzones to describe here, however, it should be noted that considerable overlap between plant communities occurs.

The short-tree savanna grades into the Tropical Deciduous Forest that is characterized by an association of deciduous and semi-deciduous trees. These trees are between 10-20m in height, with a dense understory (Breedlove 1981:14). Under optimal conditions some trees may reach 50 m in height. This forest community is interwoven with the Seasonal Evergreen Forest, which consists of 25-35m high canopy of evergreen and deciduous seasonal trees with a low understory of shrubs (Breedlove 1981:12). During the dry season, the littermat becomes very dry and desiccated, resulting in seasonal variation in herbaceous plants. This zone contains a number of important fruit trees including, sapodilla, cacao, papaya, avocado, and *guayaba* (Clark 1994:74). As Breedlove (1981:12) notes, the integration between this zone and the adjacent communities is so strong that it renders the distinction of this zone almost meaningless.

Enclosed within this community are mogotes, previously described, bajos, and riparian stands. Bajos (known locally as *chahuites*), or seasonally-inundated low areas, would likely have been used for cultivation in the past. These channels fill with water and fresh silt each year. The water occasionally lasts through the dry season, making these excellent small oases. Clark (1994:76) notes that chahuites are essentially self-irrigating and annually fertilized through fluvial action. A bumper crop can often be gained by planting in the chahuites. However, finding the precise location of ancient agricultural fields is another story. Modern cultivation of the chahuites often obscures or obliterates the evidence of ancient agriculture.

Work by Feddema (1993) has identified the archaeological remains of maize (*Zea mays*), beans (*Phaseolus* spp.), and avocado (*Persea americana*). All of these specimens came from Early Formative deposits. Whether these cultigens represent staples or dietary supplements is an issue of current debate (Blake *et al.* 1992; cf., Ambrose and Norr 1992). However, two lines of evidence point to the use of cultigens as supplements. First, isotopic values taken from human bone suggest that domesticated foods began as dietary supplements and became staple crops toward the end of the Early Formative with the advent of more productive maize (Blake *et al.* 1992). Second, the quantity of food-processing implements increased steadily throughout the Early Formative. This trend can be correlated with an increased reliance on domesticates as dietary staples (Clark 1994:239). It is clear that a variety of crops were cultivated by Early Formative villagers from the Barra phase onward and that cultivation was possible in all seasons through the use of chahuites.

Piedmont

The piedmont forms the eastern border of the Soconusco and marks the beginning of the Sierra Madre mountains. The Lower Montane Rain Forest is the main subzone of this community and has been described in detail by Lowe *et al.* (1982). A wide variety of tropical plants and trees are indigenous to this zone, including (see Lowe 1982:62-63). Two trees indigenous to this zone merit more detailed consideration here: cacao and rubber trees.

Cacao

Cacao (*Theobroma cacao*), the primary ingredient in chocolate, was the principal crop of the Soconusco from the Postclassic up until the 19th century. It was recorded on Aztec tribute lists as the main item from the Soconusco, followed by cotton. Cacao beans were used as a form of currency by the Aztecs, and chocolate, consumed as a beverage, was the drink of nobles. This pattern may extend back as far as the Early Formative. Samples of residues from ceramic vessels in the Maya area have been found to contain alkaloid compounds similar to chocolate. Tecomates, neck-less jars which form the bulk of the Early Formative ceramic assemblage, appear to have been designed for consumption of beverages, not solid food. Studies of the residues of these jars have not yet been undertaken.

Although it grows wild, cacao thrives under human intervention. This is due to the fact that cacao needs constant shade, high humidity, and a narrow range of temperature fluctuations in order to grow. Special trees known as *madre de cacao* or "mother of cacao" are planted on modern plantations to provide shade. Further, native cacao cannot be cultivated in plantations. Before the invention of more vigorous hybrid species, cacao could only be grown in the Soconusco and similar lowlands of Veracruz and Tabasco. In this sense, the ancient inhabitants of the Soconusco had the potential to control the source of this highly-prized beverage. What we do not know is whether they understood how to process cacao into chocolate and, if so, did they control and manage production and distribution? The data to answer these questions are not easily obtained, however, the study of residues holds promise. A synthesis of the history of cacao can be found in Coe and Coe (1996).

Rubber

Rubber, a product as important today as electricity or telephones, was unknown to Europeans until after the conquest of the New World. As the first published reference to rubber (and the Mesoamerican ballgame) illustrates, Europeans were both awed and dumbfounded by its properties:

> but the most popular game amongst them, as amongst the people of our own islands, is a game of tennis. Their balls are made of the juice of a vine that clambers over the trees, as hop vines clamber among the hedges. They cook the juice of these plants until it hardens in the fire, after which each one shapes the mass as he pleases, giving it the form he chooses. It is alleged that the roots of this herb when cooked give them

> their weight; at all events I do not understand how these heavy balls are so elastic that when they touch the ground, even though lightly thrown, they spring into the air with the most incredible leaps. The natives are most skillful players at this exercise, catching the ball on their shoulders, elbows, heads, rarely their hands, and sometimes their hips, if their opponents throw when their backs are turned. When playing tennis they strip, as do our wrestlers. (Coates 1987:4, original Martyr 1530)

Derived from the milky resin known as latex, rubber can be produced from several different species of trees and plants, especially those of the Moraceae (Mulberry) Family. However, prior to the introduction of plantation rubber from South America, most rubber was produced from the *Castilla elastica* tree (Torquemada 1943:553). This species is indigenous to the Soconusco, lowland Central America, the Yucatán Peninsula, Tabasco, and lowland Veracruz at altitudes up to 700 m. It has also been reported in Oaxaca, Guerrero, Colima, Jalisco, Tamalipas, Nayarit, Sinaloa, and Michoacán (Standley 1926:215). Mature trees grow in small stands and usually reach 25 m in height (Rzedowski and Equihua 1987:33). The flowers are so fragrant and prolific, that modern rubber plantations are sometimes used for beekeeping (Sethuraj and Nehru 1997). This species is particularly favored for latex extraction because of the quantity and quality of rubber it produces.

As mentioned in Chapter 3, rubber balls dating to 1250 bc have been found at the wetsite component of El Manatí in Veracruz (Ortiz *et al.* 1992:63; Ortiz and del Carmen 1994). This implies that the processing of latex into rubber was understood by at least Early Formative and perhaps by Late Archaic times. This process should not be confused with vulcanization, where sulfur is added to rubber (this was not discovered until 1839 by Charles Goodyear). However, unvulcanized rubber only lacks the hardness and durability of its more refined counterpart. The traditional method of processing rubber was recorded by Charles La Condamine, who was dispatched to Ecuador in 1736 by the French government originally to measure a degree of the meridian at the equator. During his travels he encountered native people manufacturing rubber and transcribed the process:

> Take a mould of earth...and cover it with resin using the fingers, then expose it to thick smoke, where the heat of the fire is lightly felt, fuming it to let the resin spread all over the mould, and taking care the flames do not reach it. When the resin becomes yellow, and the finger will not stick to it any more, put a second layer on, and so on, till the required thickness is reached. Then hold the substance for some time longer over the fire 'till all humidity has evaporated, and there remains nothing but the elastic resin, which is, in my way of thinking, nothing but a kind of resinous oil, condensed and divested of that part of it which is serum. Treated in this way, things made with it will be that much more solid'. (Coates 1987:12, original La Condamine 1751)

Modern ballplayers in Sinaloa, Mexico, have also been observed to manufacture rubber balls in this fashion (Phil Weigand, pers. comm. 1996), and the process was also observed by Isabel Kelly (1943) in Nayarit. She reports that three gallons of latex was required to make

a ball weighing 600 g (Kelly 1943:165). It is interesting to note that one of these ballplayers, a ritual specialist, is charged with the production of rubber balls for the teams (Leyenaar 1978:69).

The main problem facing Early Formative rubber tappers was the rapid coagulation of the latex once exposed to air. Modern tappers add ammonia, a base, to the raw latex to prevent coagulation. An acid can later be added to reverse the process. In nearby Belize, stems of pulverized morning glory (*Calonyction* spp.) were used to facilitate coagulation and enhance rubber properties (Standley 1926:215). Kelly (1943:164-165) records moonvine or moonflower *(Ipomoea bona nox.)*, a climbing vine similar to morning glory, and the root of the machaquana (*Operculina rhodocalyx*) were also used as catalysts. Presumably, the juices from a number of tropical vines (with a pH>7) could have been added to preserve the latex until ready for processing.

Ethnobotanical research shows that the medicinal properties of *Castilla elastica* were numerous. Its latex was used as a remedy for abscess, colic, constipation, dysentery, eye problems, fractures, hoarseness, intestinal problems, sterility, thirst, ulcers, and suppuration (Standley 1926:216). Latex was used in religious rituals, where it was utilized in the same fashion as blood (Motolinía 1979:36). Sacrificial victims were smeared with latex prior to being dispatched. Rubber was also identified with movement. For example, the Náhuatl word (the language of the Aztecs) for rubber (*olli*) was derived from the verb for movement (*ollin*), from which the Spanish word (*hule*) was derived (Krickeberg 1966:192). The Quiche Maya, authors of the *Popul Vuh*, called the rubber ball *quic*, which means blood (Ochoa Castillo 1992:28). Thus, latex was interchangeable for blood and vice versa. Practical uses of latex included as a fuel for torches, waterproofer, adhesive, leakproofing containers, and rubber balls.

In sum, rubber was an important economic and medicinal product from at least the Early Formative. One tree, *C. elastica*, was likely the main source for latex. Production of rubber was accomplished by ritual specialists. By the Postclassic, a number of linguistic associations existed between rubber, blood, and movement. While the true extent of rubber production and use may never be known, the associations and uses presented here indicate it was a very sacred and valuable commodity.

Summary of the Soconusco Environment

The Soconusco has been portrayed as a diverse and productive environment. The evidence reviewed in this chapter shows that it was extensively utilized by native peoples. In particular, the productivity of the nearby Cantileña swamp was emphasized. Domesticated cultigens formed part of the diet beginning in the Barra phase. Isotopic studies indicate that these cultigens were initially dietary supplements. Gradually, these supplements became dietary staples by the end of the Early Formative. In addition, cacao and rubber were argued to have been significant during the Early Formative. The exact nature of their contribution, however, remains obscured due to a lack of information for this time period. The bounty of the Soconusco environment enabled the production of surpluses by Early Formative

villagers. This capacity for surplus production is integral to many models of the origins of emerging complexity.

Previous Professional Research

Work by professional archaeologists in the Soconusco began with the investigation of the site of Izapa by Matthew Stirling (1943). Izapa, the largest site in the Pacific Coastal region of Chiapas, contains numerous carved stone monuments (known as stelae), whose style was considered an important link between the early Olmec and later Mayan civilizations. This "Izapa style" became the focus of subsequent investigations by Mexican government archaeologists and the New World Archaeological Foundation (Ekholm 1969; Lowe and Mason 1965; Lowe *et al.* 1982; Piña Chan 1961). Work on smaller sites in the Soconusco was initiated by the discoveries made by Philip Drucker (1948) and José Luis Lorenzo (1955) of preceramic layers in the Chantuto shell midden. The investigation of the ceramic phases of the Early Formative period (i.e., early sedentary adapation) began with the description of the Ocós and Conchas phases by Michael Coe (1961) for the site of La Victoria, Guatemala.

In the early 1960s, Coe along with Kent Flannery returned to the Ocós region and conducted excavations at the site of Salinas La Blanca where they defined two more phases of the Early Formative: Cuadros and Jocotal. These phases showed similarities to the Gulf Coast Olmec culture and the cultures of central Chiapas. With their discovery of these new phases, the Early Formative sequence was (from oldest to youngest): Ocós, Cuadros, Jocotal and Conchas. After the work of Coe (1961) and Coe and Flannery (1967), almost all of the investigation of the Early Formative took place on the Mexican side of the Mexico/ Guatemala border, with the exception of subsequent excavations at Salinas La Blanca by Edwin Shook (Shook and Hatch 1979) in the Río Naranjo area by Michael Love (1986, 1989), and further south by Barbara Arroyo (1990, 1991), Mary Pye and Arthur Demarest (1991) .

In 1963, Carlos Navarrete began a survey of the Pacific Coast of Chiapas, concentrating on the Mazatán region. Navarette discovered the site of Altamira, a site which was later excavated by Dee Green and Gareth Lowe (1967). It is at this site that the Barra phase was first defined (Green and Lowe 1967). Limited testing and subsequent radiocarbon dating of the Barra component to the period between 2000 and 1500 bc at Altamira confirmed the primacy of this phase in the Early Formative sequence for the Soconusco region (Lowe 1975:1). Lowe (1975) returned to the site in 1973 with Ceja Tenorio to conduct further excavations.

After his excavations at Altamira in 1973, Ceja Tenorio returned to the Mazatán region in 1974 and 1975 to survey and excavate some Early Formative sites. His research at Paso de la Amada confirmed the Barra and Ocós sequence while additional work at the site of Los Alvarez confirmed the presence of Cuadros and Jocotal (Ceja Tenorio 1985). Also in 1973, Paillés conducted test excavations in an estuary mound near Mapastepec, northwest of Mazatán, and discovered a Jocotal phase occupation (Paillés 1980).

Work in the estuary zone was continued by Barbara Voorhies (1976), building upon the previous investigations of Drucker (1948), Lorenzo (1955) and Navarrete (n.d.). Her research in the Chantuto region has formed the corpus of our current knowledge of the Archaic period (i.e., specialized hunter-gatherer-fishers) (Voorhies 1976, 1989, 1990, 1994; Michaels and Voorhies 1989). Initially, Voorhies defined the Chantuto phase as spanning the time period from 3000 to 2000 bc (Voorhies 1976:97). However, based upon recent subsistence and settlement information, Blake has re-defined two phases for the Archaic period: Chantuto A (4500-3000 bc) and Chantuto B (3000-1800 bc). Chantuto A material has thus far only been found at the site of Cerro de las Conchas, a site excavated by Clark and Lesure. Both of these phases are preceramic.

The remainder of the work in the region has been conducted or supervised by Michael Blake of the University of British Columbia and John E. Clark of the New World Archaeological Foundation, Brigham Young University. Their ongoing project has provided exciting new information on the social and political dynamics of Early Formative villages. Most of this work has been conducted under the banner of the Mazatán Early Formative Project. Before commencing a discussion of the project goals and objectives, I will introduce the archaeological cultures of the region and summarize the regional chronology. A recent summary of the characteristics and dates of each phase can be found in Blake *et al.* 1995. The chronological chart with the dates for each phase, as well as those of surrounding regions, can be found in Figure 4.3.

Regional Chronology

The earliest evidence of occupation of the Soconusco comes from shell mounds at Cerro de las Conchas which date to the Archaic period (4500-1800 bc)(Blake *et al.* 1995). The entire period is marked by a trend from general exploitation of estuarine resources to a more specific emphasis on shellfish and perhaps shrimp (Voorhies *et al.* 1991). Beyond the pioneering work of Voorhies (1976), little is known about the subsistence and settlement patterns of the Chantuto people. Since these are a preceramic people, further refinement of phases is unlikely.

The Barra phase (1550-1400 bc) ushered in a new era in the Mazatán region and commenced the Early Formative period. Sedentary villages appeared, ceramic use began, and the first domesticates were cultivated. These Early Formative villagers have been called the *Mokaya* a term coined by John Clark (1991) which roughly translates as "The Corn People." Clark composed this term from the Mixe-Zoque words *mok' haya*, intelligible in both Mixe and Zoque. Linguistic studies indicate that Mixe-Zoquean was probably the language spoken by ancient Mokaya villagers (Clark 1994:viii) as well as the Olmecs of the Gulf Coast (Campbell and Kaufmann 1976:80). This moniker will be adopted here, as it adds a sense of human agency often missing from archaeological studies.

The sophisticated pottery of the Barra phase remains an enigma. There were no local antecedents and no known donor cultures producing similar pottery in the vicinity (though some scholars have claimed in the past a South American origin for the pottery (Coe 1960; Lowe 1975). Clark and Gosser (1995) argue convincingly that the idea of pottery may have

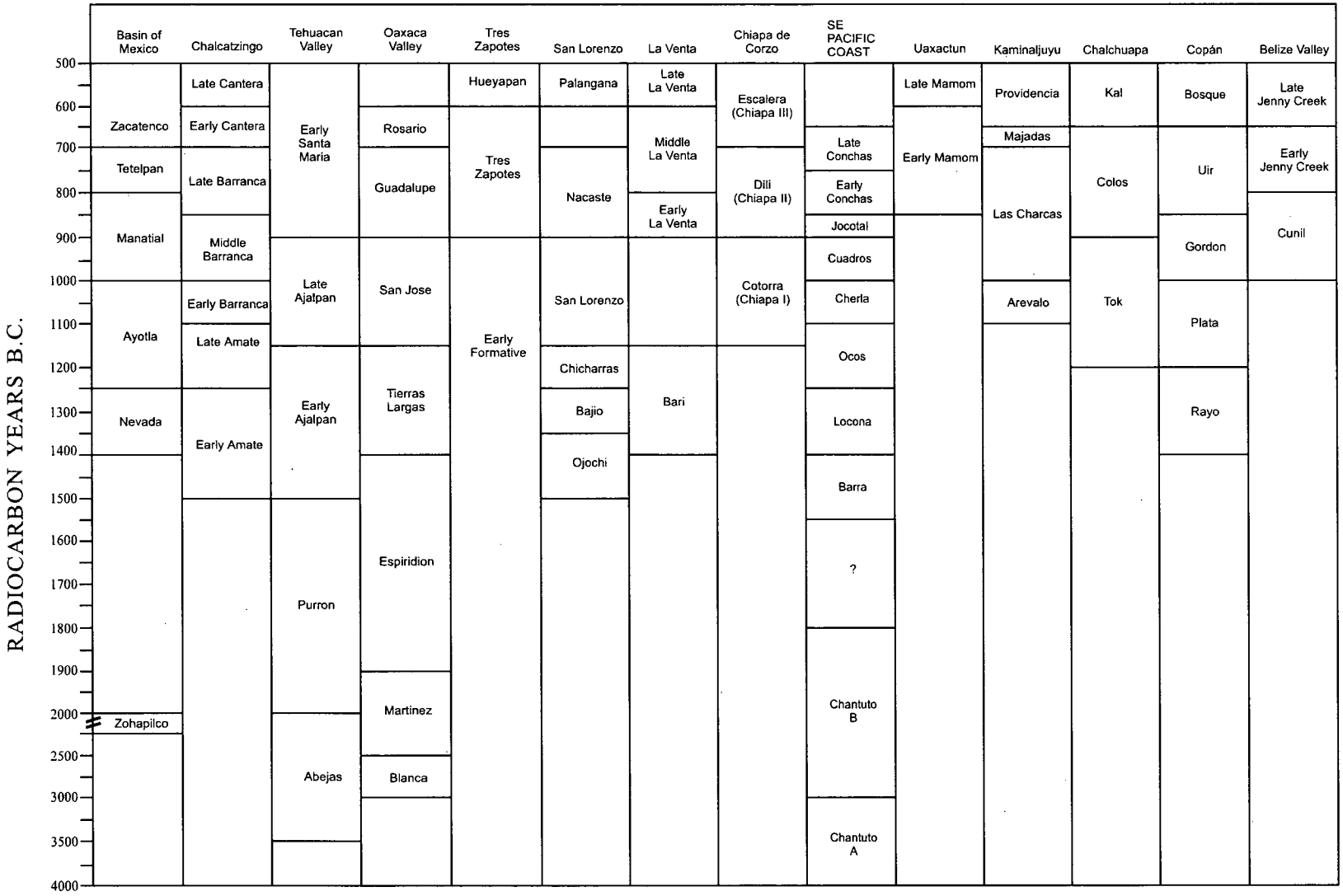


Figure 4.3 Chronology Chart of Formative Mesoamerica.

been adopted by Mokaya villagers who immediately modified it in ways foreign to the donor group. The fancy style of these ceramic vessels indicates some specialized function, perhaps for use in social contests for prestige (Clark and Gosser 1995:216). Many of the decorative techniques could have been previously operative on other media, such as gourds. Transference of these techniques to a new medium could have provided Mokaya villagers with an innovative means of interacting with their neighbors during the Barra phase. Figurines also made their appearance during the Barra phase. The style of these figurines does not seem to have been imported and therefore forms its own distinct regional tradition.

By the end of the Barra phase, a two-tiered settlement hierarchy can be delineated for sites in the Mazatán region (Clark 1994:196). Paso de la Amada was the largest of these sites, covering over 10 hectares. Clark (1994:196) suggests that the Barra phase settlements consisted of subsidiary villages clustered around a main site. In addition, these settlements occupied the best *chahuite* lands, a pattern which would continue for the Locona and Ocós phases.

By the succeeding Locona phase (1400-1250 bc) a four-tier settlement hierarchy existed, consisting of large and small villages, hamlets, and residences (Figure 4.4)(Clark 1994:196-197). Some structures were constructed on top of artificial platforms. One such structure at Paso de la Amada appears to have been a high-status residence, perhaps belonging to a chiefly lineage (Blake 1991). This building is discussed in more detail in the following section. By the end of the Locona phase, the site of Paso de la Amada was clearly a regional center, with a total area of almost 40 hectares.

Prior to 1985, stratified Locona phase deposits had not been isolated. A large trash pit discovered at the site of Chilo contained sherds which did not fit the Barra or Ocós categories (Clark 1994:181). It was clear that this midden pre-dated the Ocós phase. The pit contained numerous red sherds with a specular slip, a type which was dubbed "Chilo Specular Red." When compared with other deposits, this type post-dated the Barra phase but pre-dated the Ocós phase. A new complex, Locona, was defined to account for the observed variation. This complex was later encountered in stratified deposits at other sites throughout the Mazatán region. Locona vessels are easily distinguished by their iridescent or specular decoration. Having now been found at dozens of sites, the dominant type is, appropriately, Chilo Specular Red (Clark 1994:181-182).

In his survey of the Mazatán region, Clark (1994:199) found that Locona phase settlements occurred in clusters. Large villages were spaced at 5 km intervals with smaller villages located within 2 km of large ones. Given this pattern, Clark (1994:212) calculated that, at a minimum, over 4000 persons lived in a 50 km^2 area during the Locona phase. This represented an 800 percent increase over the previous Barra phase! (Clark 1994:213). Clearly, the region was undergoing some tremendous demographic shifts. The extensive size of Paso de la Amada in relation to other sites in the region makes rank-size comparisons problematic (Clark 1994:201-203).

It was during the Locona phase that the first monumental architecture appeared. This included the construction of ballcourt and a large residence at Paso de la Amada. Some other important changes took place, including differential mortuary practices, unequal access to goods (particularly imported obsidian), and craft specialization centered around elite house

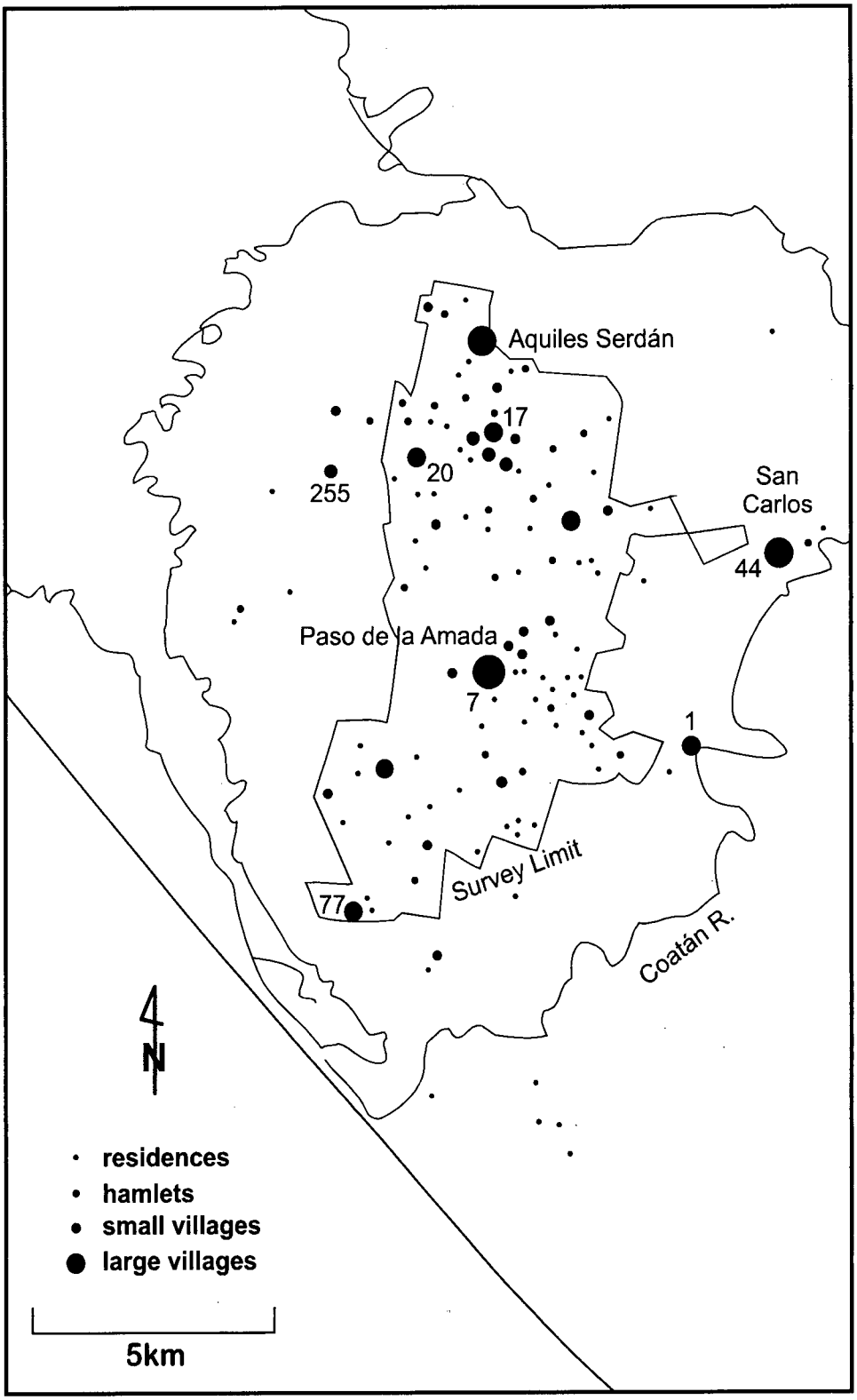


Figure 4.4 Locona Phase Settlement Hierarchy (after Clark 1994:201)

mounds (Clark 1991). Taken together, these factors argue in favor of some form of rank system by the Locona phase (Clark and Blake 1994). However, Lesure (1995) in his analysis of elite vs. non-elite residential middens at Paso de la Amada did not support this conclusion. No matter how this evidence is interpreted, all scholars agree that a qualitative and quantitative shift occurred during the Locona phase.

The Ocós phase (1250-1100 bc) was first defined by Coe (1961) at the site of La Victoria on the Guatemalan side of the Soconusco. Coe and Diehl (1980:137) were quick to note similarities between Ocós phase ceramics and those of the Gulf Coast. Ocós settlement was characterized by aggregation of people around large settlements, which Clark (1994:199) interprets as relatively autonomous political units. Population remained stable, with only a slight increase over the Locona phase (Clark 1994:213).

Ceramics were distinguished by two major changes from the Locona phase. Specular and iridescent slips disappeared and tecomate support legs tended to be hollow, instead of solid. A number of brown wares also appeared. Tecomates were the dominant vessel form, followed by shallow bowls. In the Mazatán region, Paso Polished Red was the predominant type of the Ocós phase. A full description of the Ocós phase ceramics at Paso de la Amada can be found in Ceja Tenorio (1985). Minor changes in figurine styles occur; however, figurines were still made in the local Mazatán tradition. Mound 7, the ballcourt, was abandoned by the end of the Ocós phase. The implications of this abandonment will be discussed later in this chapter.

By the Cherla phase, the Gulf Coast Olmec influence can be clearly seen in the ceramic and figurine industries. The predominantly red and brown ware assemblages were replaced by the black and white differentially-fired pottery characteristic of the Olmec heartland. Tecomates became much thicker and gadrooned or "pie-crust" rims become common (Clark 1994:180). Lesure (1995) notes that changes in personal adornment appeared during the Cherla phase, specifically, the use of ceramic earspools. He argues that these differences may have helped legitimate economic inequalities within the Mazatán region (Lesure 1995:246). A reduction in the number of feasting vessels suggests this activity declined during the Cherla phase (Lesure 1995:306). Differential access to obsidian in terms of both quality and quantity was noted by Lesure (1995) in his analysis of residential middens. Hollow, white-slipped figurines of the "baby face" style began to appear during the Cherla phase. I found one remarkable specimen of this style during the course of the 1993 excavations at Mound 14 (Blake, Clark *et al.* 1993).

Settlement patterns revealed from the regional survey by Clark (1994) indicate that population declined precipitously during the Cherla phase. At Paso de la Amada, the sequence of elite residences at Mound 6 terminated, though deposits at the mound indicate it remained an elite domain. Large sites in the Mazatán region, including Paso de la Amada, were abandoned by the end of the Cherla phase. During this phase two widely-spaced platforms of similar size were constructed. This, coupled with changes in artifact distribution, leads Lesure (1995:309) to conclude that hierarchical relations at Paso de la Amada were replaced by more egalitarian ones. It is interesting to note that the changes at Paso de la Amada correspond with the zenith of San Lorenzo in the Gulf Coast heartland.

The nature of relations between the Gulf Coast heartland and the Mazatán region, however, remains an issue of vociferous debate (see, e.g., Sharer and Grove 1989; Clark 1991).

The subsequent Cuadros and Jocotal phases mark the Early to Middle Formative transition. Ceramics were markedly different, with very large thick tecomates and other vessels. Villages dating to these phases are sometimes characterized as "Olmec" (Love 1991:91). Since these phases are not under consideration here, readers should refer to the more detailed analyses by Arroyo (1994) and Pye (1995). Occupations dating to this phase are often present on the surface of sites in the Mazatán region and are therefore subject to erosion or obliteration by modern agricultural activity. Population estimates and settlement patterns studies are hampered by this problem.

A decade of continuous work in the Mazatán region has led to the refinement of the chronology of the Archaic and Early Formative periods as more radiocarbon dates have come available. A complete listing of radiocarbon dates and their proveniences for the Early Formative Soconusco region can be found in Blake *et al.* 1995. The revised chronology, from earliest to latest, with a brief summary is presented in Table 4.1.

A hiatus of 250 years between Chantuto B and the Barra phase should be noted in this sequence. This hiatus is due to the fact that no sites have yet been found that date to this transitional period between the Archaic and the Early Formative. The above chronology, while still being refined, is perhaps the best one available for the Early Formative period anywhere in Mesoamerica. It therefore provides an excellent opportunity to investigate the origins and evolution of social and political complexity over time.

The Mazatán Early Formative Project

In 1985, John Clark and Michael Blake began a long-term project in the Mazatán region in order to investigate the emergence of chiefly societies during the Early Formative period (Clark *et al.* 1987). This project was a joint-venture with funding from the New World Archaeological Foundation, Brigham Young University, and the Social Sciences and Humanities Research Council of Canada. Clark (1994:93) lists the following as the project objectives:

(1) investigate the subsistence economies of the Late Archaic and Early Formative periods,
(2) determine the major staple crops of the earliest coastal agriculturists,
(3) determine the timing of the introduction and adaptation of highland cultigens to the coastal lowlands,
(4) look for local antecedents to Barra ceramics,
(5) discover and excavate an inland (non-estuary) Late Archaic site,
(6) determine the socio-political organization of these Late Archaic and Early Formative peoples,
(7) investigate the beginnings of sedentism.

Table 4.1 Chronology and Phase Characteristics for the Mazatán Region.

PHASE	DATES	DESCRIPTION
Chantuto A	4500-3000 bc	Defined by Blake and Clark at Cerro de Las Conchas, this phase is characterized by preceramic shell middens located in estuarine environments.
Chantuto B	3000-1800 bc	Also preceramic, but sites are further inland along margins of estuary. First defined at by Voorhies at Tlacuachero.
Barra	1550-1400 bc	Sophisticated pottery begins, some domesticated cultigens, small permanent villages. First defined by Lowe at the site of Altamira.
Locona	1400-1250 bc	Large chiefly residences, site settlement hierarchies, regional aggregation, cultigen variety expanded but subsistence remains mixed. Defined by Clark and Blake from deposits at the Chilo site, its presence has been confirmed at San Carlos and Paso de la Amada as well as other sites.
Ocós	1250-1100 bc	First described by Coe (1961) at the site of La Victoria in Guatemala. Originally, this phase included the Barra, Locona and Ocós phases but has since been found in stratigraphically distinct deposits. The main differences are in the ceramic and figurine industries, as well as in settlement patterns.
Cherla	1100-1000 bc	Defined by Clark from deposits at Aquiles Serdán. Olmec-like styles begin to appear in the ceramic and figurine industries. Lesure (1995) has noted clear economic status differences between individuals appear in this phase.
Cuadros	1000-900 bc	Defined by Coe and Flannery (1967) at the site of Salinas La Blanca, Guatemala. Ceramic forms begin to differ widely from the previous four phases.
Jocotal	900-850 bc	Also defined by Coe and Flannery (1967), this phase ushers in the Middle Formative with changes in ceramic styles.

To realize the project objectives, Clark and Blake began an extensive survey of the Mazatán region and conducted excavations at six Early Formative sites. Structures or partial structures were found at three of the sites excavated by Blake and Clark. One of these sites, Paso de la Amada, presented a series of stratified house floors and structures which were subsequently excavated. Blake (1991) suggests that one of these structures, Structure 4, was a chiefly residence during the Locona phase and continuing into the Ocós phase. Subsequent excavations at Paso de la Amada have produced evidence to support Blake's hypothesis (Clark *et al.* 1990; Blake *et al.* 1993; Blake and Feddema 1991). The most recent fieldwork in the Mazatán region includes a survey of a 140 km^2 area in 1992 by Clark *et al.* (1994), and

excavation of three mounds at Paso de la Amada (Blake *et al.* 1993). Lesure (1995; 1997) has also been investigating economic differences in elite and non-elite structures and middens at Paso de la Amada. In 1995, Blake, Clark and Hill conducted extensive excavations of both mound and off-mound deposits at the sites of Paso de la Amada and Altamira. These excavations helped refine the Mound 6 construction sequence, uncovered the ballcourt at Mound 7, and discovered an Early Formative cemetery in an off-mound area of the site.

Paso de la Amada: An Early Formative Regional Center

Paso de la Amada is located adjacent to the modern village of Buenos Aires and 25 km west of the city of Tapachula. This site is located within the coastal plain environmental zone, on an old bayou of the Río Coatán. Over 50 low mounds ranging between .5 and 2.5 m in height are found on the site. At its zenith during the early Ocós phase, Paso de la Amada covered over 50 hectares, making it the largest site in the Mazatán region (Blake 1991:32). The entire site is seasonally-inundated, filling the bajos with water which lasts much of the dry season. Work at Paso de la Amada was initiated by Fausto Ceja Tenorio in 1974 (1985) under the auspices of the NWAF. Ceja Tenorio placed a series of 23 test pits in both mound and off-mound areas of the site. His excavations revealed Barra and Ocós occupations (Ceja Tenorio 1985). However, re-analysis of materials from Ceja Tenorio's excavations by Clark (1994:129) revealed that other phases, particularly the Locona phase, were represented as well.

In 1985, at the suggestion of Gareth Lowe, Blake and Clark started new excavations at Paso de la Amada (Clark *et al.* 1987). These excavations focused on Mound 6, one of two large mounds at the site. It was hoped that these excavations would yield the remains of elite residential structures—they did not disappoint (Blake 1991:33). Early in the 1985 field season, a 2 x 2 meter test pit by Blake revealed that at least six superimposed floors lay beneath Mound 6. In addition, each floor lay atop an artificial platform. Ceramics recovered from the fill layers indicated occupation from early Locona to Ocós. This intriguing test pit led Blake to return in 1990 in order to expand the excavations.

Mound 6: A Chiefly Residence

The 1990 excavations exposed the full extent of the first four structures beneath Mound 6, although Structure 1 was poorly-preserved due to plowing activity (Figure 4.5) (Blake 1191:34; Clark 1994:342). However, Blake estimated the size of Structure 1 to be minimally 11 x 5 m. Following the removal of Structure 1, further excavation revealed a posthole pattern and a hard-packed clay floor. This underlying building, dubbed Structure 2, was apsidal or ovoid in shape, measured 17.5 x 9 m, and covered an area of 122 m^2 (Blake 1991:34). A large amount of labor was invested not only in the construction of Structure 2

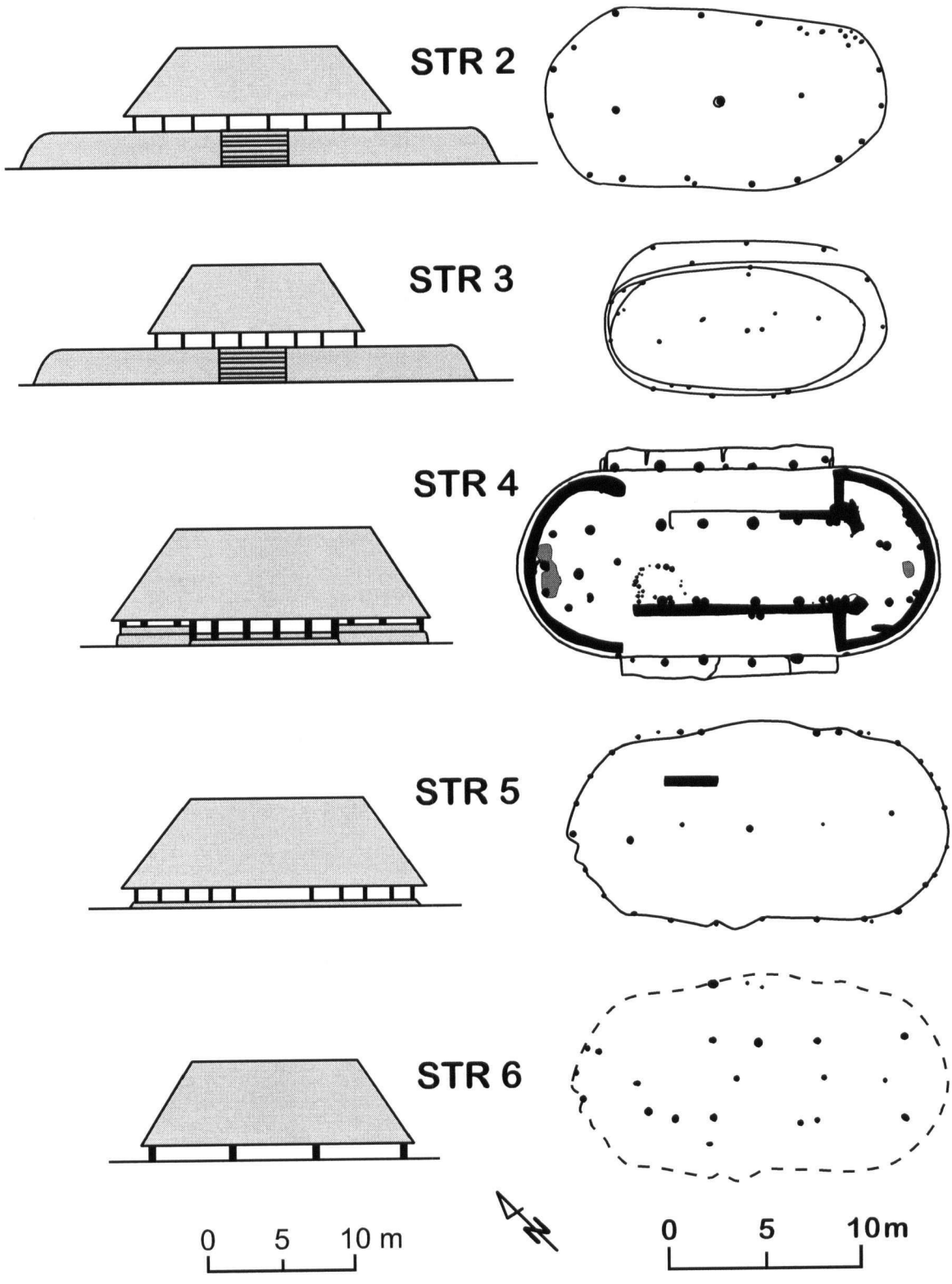


Figure 4.5 Construction Sequence at Mound 6 (Courtesy of Michael Blake).

but in the preparation of the platform as well. Using artifact and architectural data recovered from these excavations, Blake (1991) considered Structure 2 to have been a chiefly or elite residence.

Continued excavation of this mound revealed even more structures. Only one of these, Structure 3c, was able to be completely reconstructed. It also was apsidal in shape, though not as large as Structure 2, measuring 12.6 x 6.3 m and encompassing an area of 71 m^2 (Blake 1991:36). This structure was significantly smaller than either Structure 2 or Structure 4. However, it is important to note that the general form of the structure was maintained from one construction to the next.

The largest Locona phase structure (with the exception of the ballcourt) was found beneath the above-mentioned buildings. Structure 4 dwarfs all other residential buildings, measuring 22 x 10 m and constructed atop a meter-high platform (Figure 4.6)(Blake *et al.* 1991:12). The platform base itself consisted of a hefty 164 m^3 of construction fill. The apsidal ends of this structure supported half-circle, standing clay walls. On one end of the structure these walls intersected two parallel walls which defined the internal space of the structure (Blake *et al.* 1991:12). These walls were 50 cm thick by 50 cm in height and were composed of mottled clay. Their appearance seems to have been aesthetic—they supported no roof or other load (Blake *et al.* 1991:13). Blake and his colleagues (1991:15) rule out their use as benches, as they are 10cm higher than the average for benches. With a total roofed space of 238 m^2, Structure 4 could have accommodated between 40 and 50 people, perhaps encompassing several extended families (Clark 1994:365).

Radiocarbon and ceramic cross-dating place Structure 4 firmly in the early Locona phase, around 1400 bc, making it the earliest known such structure in Mesoamerica. Much ink has been spilled over whether this structure represents a public building, such as a men's house or initiates' temple, or an elite residence. The public building proponents, led by Lesure (1995, 1997), and following Flannery and Marcus (1976), argue that Structure 4 appeared in an otherwise egalitarian context and therefore cannot be a chiefly or elite residence since no ranking existed at that time. They consider the evidence to be equivocal and conclude that Structure 4 lacks the features which typify elite residences (Lesure 1995:72). The elite residence argument, spearheaded by Blake (1991) and Clark (1994), finds significant differences in artifact distributions, particularly ceramics, between Mound 6 and other mounds at the site. These differences support a view that Locona phase Mokaya were organized as rank societies (Clark 1994:434). Perhaps the most effective argument in favor of the elite residence hypothesis comes from two inhumations of three individuals found during the 1993 excavations. One of these was a mother and her infant, the other an isolated infant burial (Blake, Lesure *et al.* 1993). Lesure (1995:72) admits that this casts serious doubt on the interpretation of these structures as men's houses or similar public buildings.

In 1993, we returned to Mound 6 to excavate floor samples and the structures which lay beneath. These excavations attempted to obtain microartifact samples of household debris. The patterning of these samples is interesting—artifact concentrations at one end of the structure are mirrored in the other end (Clark 1994:362). This suggests some sort of duality or binary symmetry to the organization of the household (Clark 1994:363). As Clark (1994:366) points out, the most parsimonious explanation for the artifact patterning is the

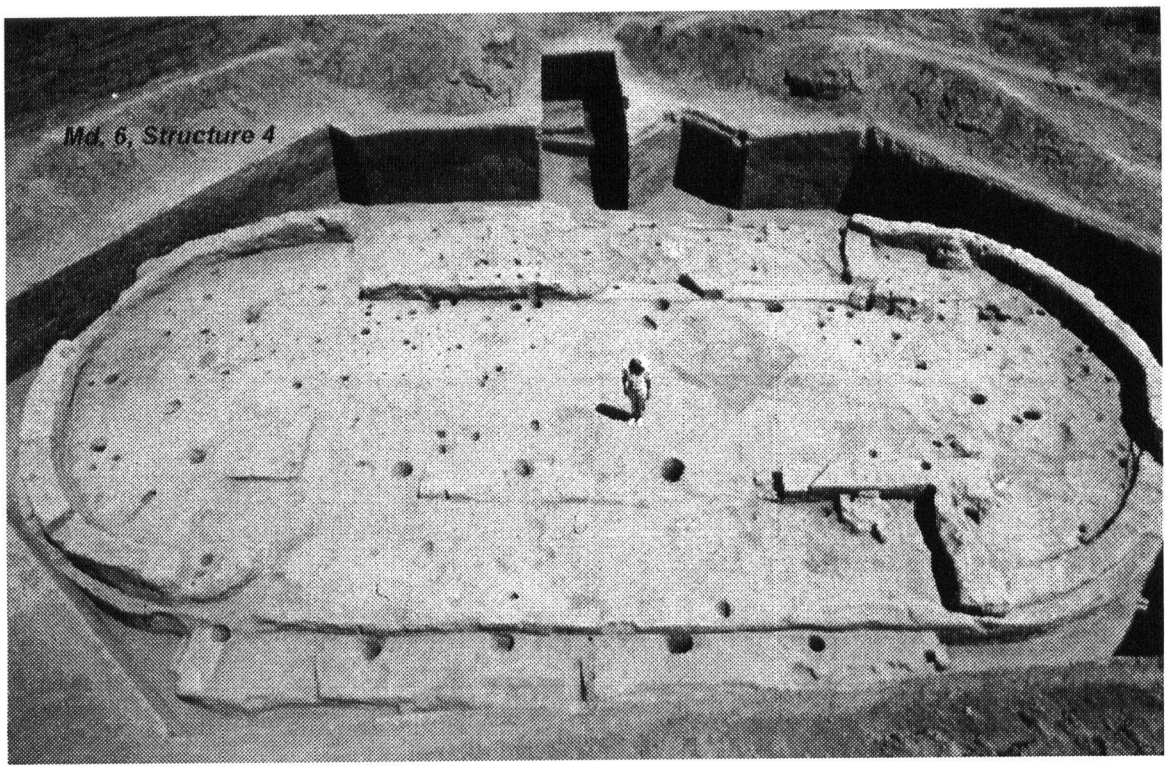


Figure 4.6 Mound 6, Structure 4, Paso de la Amada (Photo Courtesy of Michael Blake).

organization of the structure into private and public domains. Ongoing analyses of artifacts and chemical composition studies of the floor will help clarify this pattern in the near future.

Two more structures with the same apsidal shape were found below Structure 4. Both of these possessed the general posthole pattern and apsidal shape of later structures, indicating a strong preference for this architectural form. Structure 5 measured 19.5 x 10 m with a total area of 165 m^2 (Blake, Lesure *et al.* 1993:5). This structure, however, did not possess the clay walls of its predecessor. Microartifact and chemical samples were also taken from the floor of this structure.

Constructed atop the natural mound surface, Structure 6 was the first of the successive buildings on the mound. Since Structure 5 shared many of the postholes of Structure 6, determining the surface area of the latter requires assuming some continuity with the former. This pattern suggests that Structure 6 was either dismantled or reused in the construction of Structure 5. The same scenario may have prevailed during the construction of Structure 4 as well (Blake, Lesure, *et al.* 1993:9). Some shallow refuse pits were dug into the surface of the floor. Microartifact and chemical analyses of this floor are also being conducted.

In sum, Mound 6 revealed a series of apsidal-shaped superimposed buildings. This remarkable sequence spans the entire Locona phase and continued in to the early Ocós phase, although these later structures were destroyed by recent plowing. The kinds of artifacts found, their distribution, and the size of the structures in relation to others at the site indicates that they could have been elite residences. While the debate over this continues, new

evidence from ongoing microartifact and chemical analyses will help clarify this issue. The discovery of the ballcourt has caused us to re-think our earlier assumptions. I will consider the implications that this find has for the sequence described here in a later section.

Mound 7: The Ballcourt at Paso de la Amada

Mound 7 occupies a low rise at the site, approximately 200 meters north of Mound 6, where ongoing excavations have produced a sequence of large structures dating back to the early Locona phase. This mound measures 110m x 50m x 1.75m and covers an area of 5500 m^2, making it the largest mound at Paso de la Amada. Mound 7 was the focus of two separate investigations, one during the 1990 season and the other in 1995.

These investigations permit a basic reconstruction of the depositional history of the mound. First, Mokaya villagers occupied the mound during the Barra phase. The nature of this occupation is not fully understood. It appears, however, that this occupation did not involve the construction of artificial platforms. Ceramic densities from this occupation are very low, perhaps the result of the cleaning of the mound in later phases. No formal structures have been defined to date, thus we assume that perishable materials were involved in their use. Second, during the early Locona phase, the initial construction of the formal ballcourt began. Third, later in the Locona phase the ballcourt was expanded both in its length and width. Fourth, by the end of the Locona phase, the ballcourt began to erode and infill the central alley. Finally, the court was abandoned and later reoccupied during the Cherla phase.

The following sections summarize two seasons of fieldwork at Mound 7. An occupational sequence is proposed for the mound, construction events are outlined, and the dating of the ballcourt is discussed. A review of the 1990 excavations begins this discussion.

The 1990 Excavations

In order to compare Mounds 6 and 7, the Mazatán Early Formative Project placed three test pits in Mound 7 during the 1990 season, all excavated by Michael Ryan, a graduate student at the University of British Columbia, under the supervision of project director Michael Blake. The location of these test pits is shown in Figure 4.7. These were dubbed Test Pit 1 (2 x 2 m), Test Pit 2 (2 x 2 m) and Test Pit 3 (2 x 1 m), respectively (Blake *et al.* 1992). All excavated materials were screened using a 5 mm mesh.

The profile of Test Pit 1 revealed a 75 cm layer of finely-laminated deposits located atop a clay floor. This curious depositional pattern was initially interpreted as the result of fluvial action. However, it was also noted that this deposition occurred above the level of the surrounding terrain (Blake, Clark, Feddema et al. 1992:16). Thicker deposits above this layer were interpreted as floors (named floors 1 though 7). Two layers below the laminated layer were assigned the numbers Floor 8 and Floor 9.

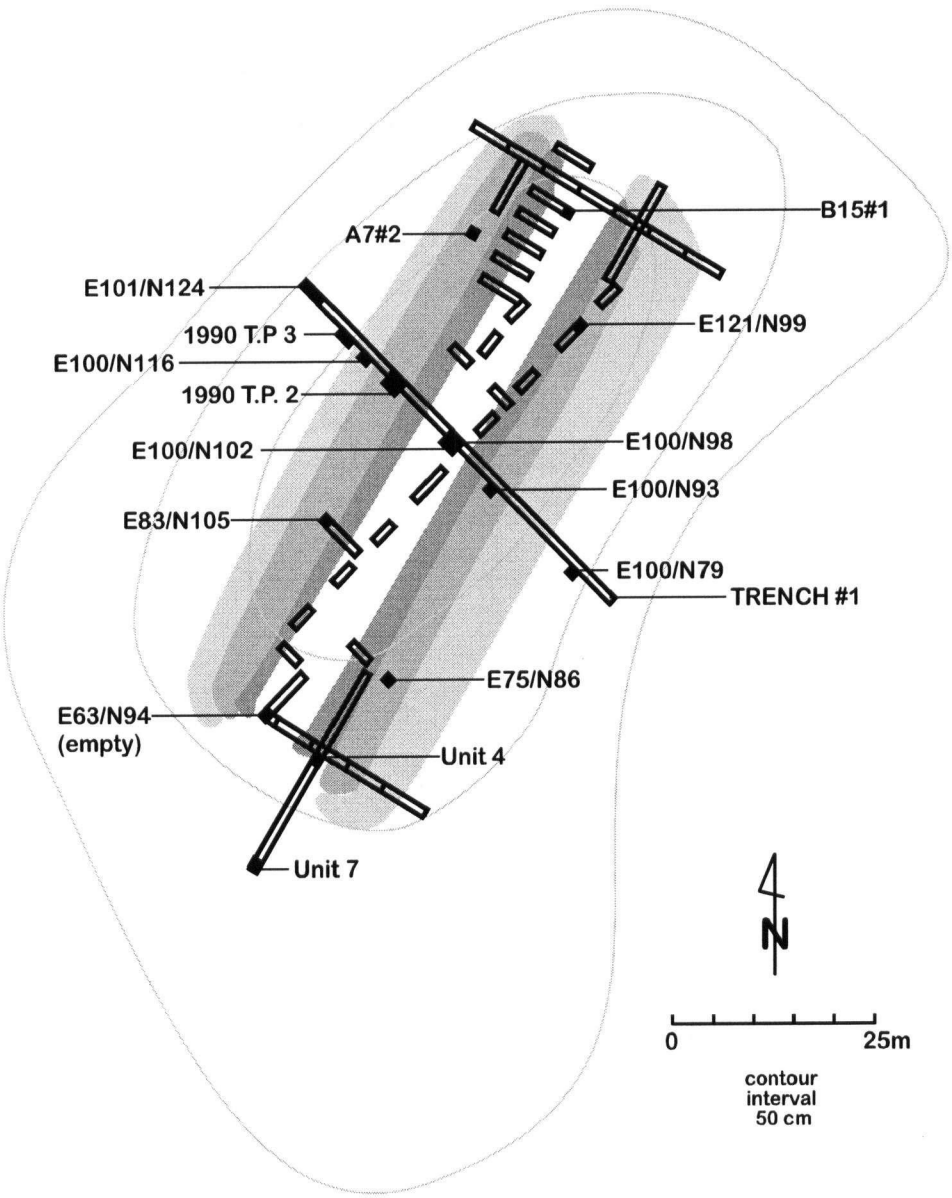


Figure 4.7 Location of 1990 and 1995 Excavations at Mound 7, Paso de la Amada.

Floors 1-7 consisted of Locona and possibly Jocotal phase ceramics (Blake, Clark, Feddema et al. 1992:16); however, the density of these deposits was very low compared to residential deposits at the site. Floors 8-9 contained Barra phase ceramics, as well as a sandy-silt layer below these floors. Based upon these results, it was thought that the basal occupation of Mound 7 was confined to the Barra phase.

Test Pits 2 and 3, located east of Test Pit 1, also produced Barra phase deposits, again in low densities. But these test pits lacked the laminated layers found in Test Pit 1. It was concluded, therefore, that the laminated layers in Test Pit 1 may have been associated with cultural activities. The profile of Test Pit 2 showed patches of mottled fill. No post holes were found in Test Pit 2 or 3.

On the basis of these test pits, it was thought that Mound 7 did not contain a large residence as did Mound 6. The presence of capped Barra phase deposits led us to conduct further investigations of Mound 7 during the 1995 season. It was thought that perhaps Mound 7 would yield substantial new information on the architecture of the Barra phase.

The 1995 Excavations

In 1995, members of the Mazatán Early Formative Project returned to the site of Paso de la Amada to conduct extensive excavations at Mound 7 and at other locations within the site (Figure 4.8). Initial excavation of Mound 7 proceeded by re-exposing a series of perplexing erosional surfaces (the ones first discovered in the 1990 season) with very few artifacts contained within them. A narrow trench, connecting the test pits from 1990, was excavated across the short axis of the mound. This trench revealed that Mound 7 was actually two parallel mounds, and the erosional deposits were trapped between the pair of mounds. Since these deposits looked much like water-laid deposits, we proposed several hypotheses to account for their presence. The first of these hypotheses was that the parallel mounds formed a reservoir or ritual pool, but closer examination of the deposits revealed evidence inconsistent with this hypothesis. After considering the evidence for other alternatives, excavation proceeded upon a working hypothesis proposed by John Clark that this structure was an early ballcourt. This focused our excavation strategy on collecting information which would enable comparisons between this structure and others throughout Mesoamerica.

The initial 1m wide trench bisecting the mound was expanded to 50 meters in length, an approach which provided a profile of the entire mound (Figures 4.9, 4.10, and 4.11). Shorter 1 x 3 m trenches were spaced along the long axis of the mound to expose architectural features. Additional cross-trenches were placed in order to identify earthen features such as benches, the alley/floor, lateral walls, etc. Once the structural elements of the ballcourt were defined, test pits (fully screened) were placed within and between features around the mound to collect ceramic samples from each major construction component of the ballcourt. In total, 255 m^2 of trenches were placed throughout the mound, with a total estimated volume of 275 m^3. These excavations represent a 5 percent sample of the total mound area and a 10 percent sample of the ballcourt area (these calculations are based upon estimates of the total mound area and volume). A detailed summary of the excavations is provided in the following section.

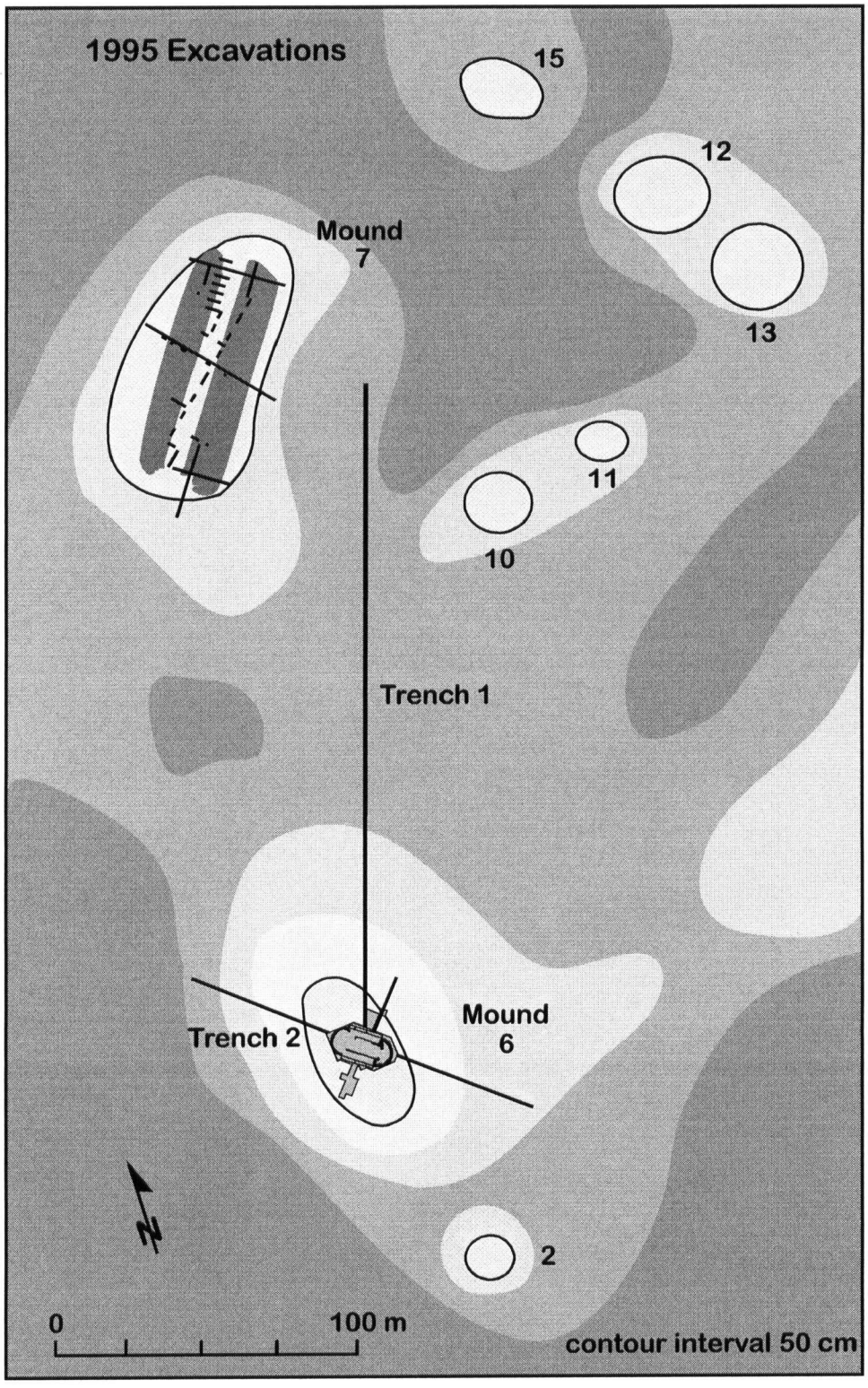


Figure 4.8 Map Showing 1995 Excavtions at Paso de la Amada.

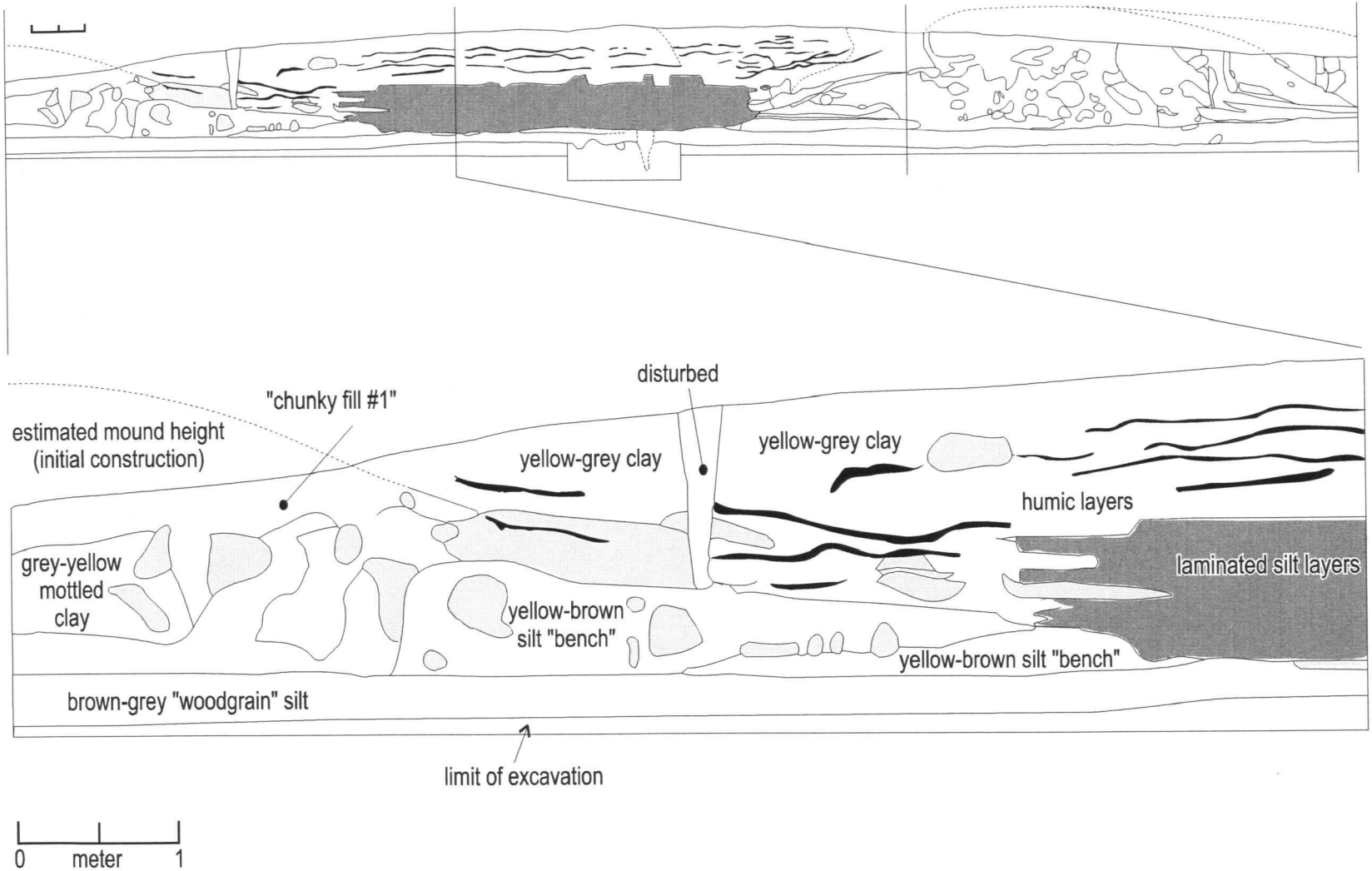


Figure 4.9 Profile of Trench #1, East Wall, Left Section, Mound 7, Paso de la Amada.

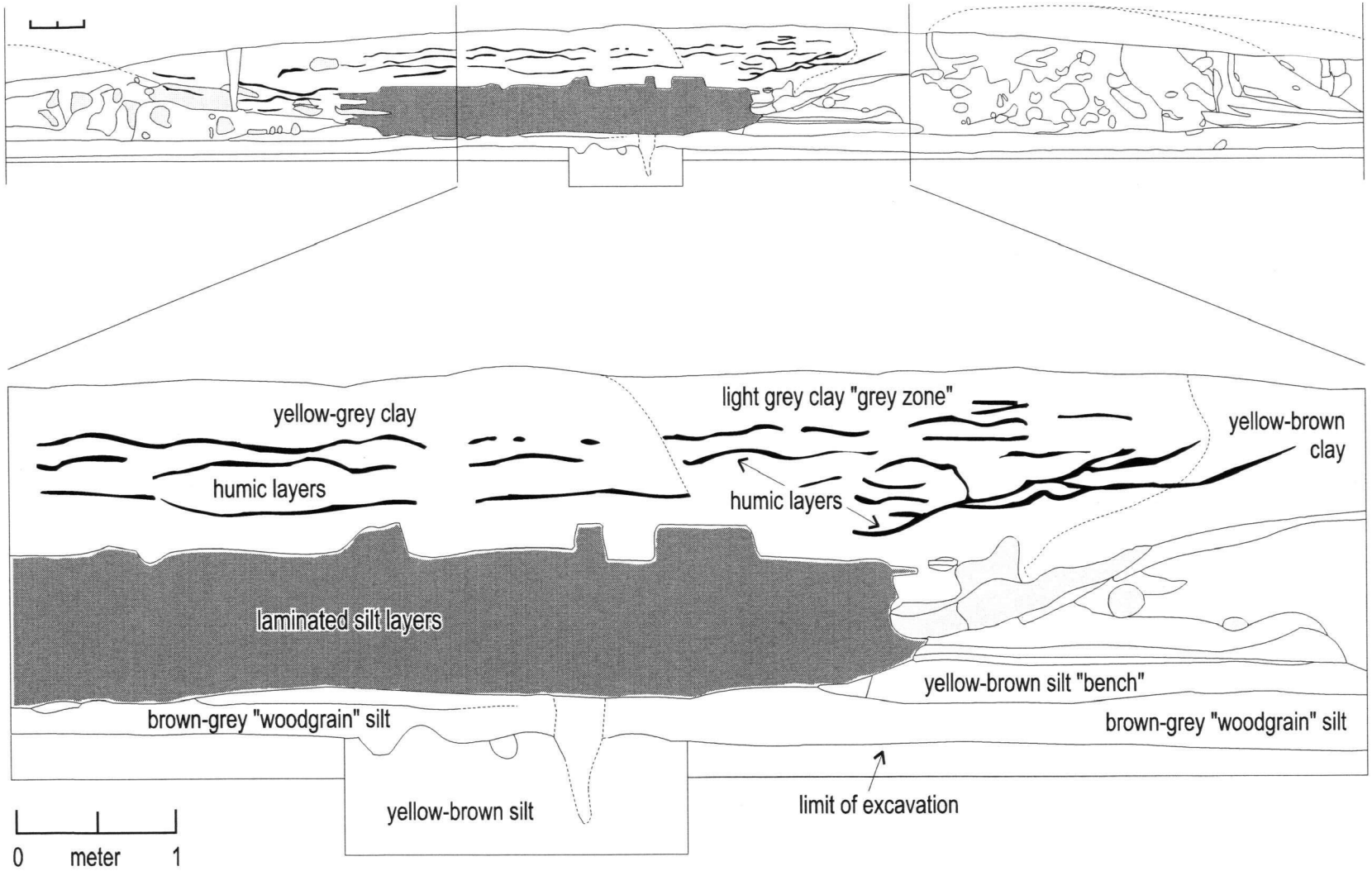


Figure 4.10 Profile of Trench #1, East Wall, Middle Section, Mound 7, Paso de la Amada.

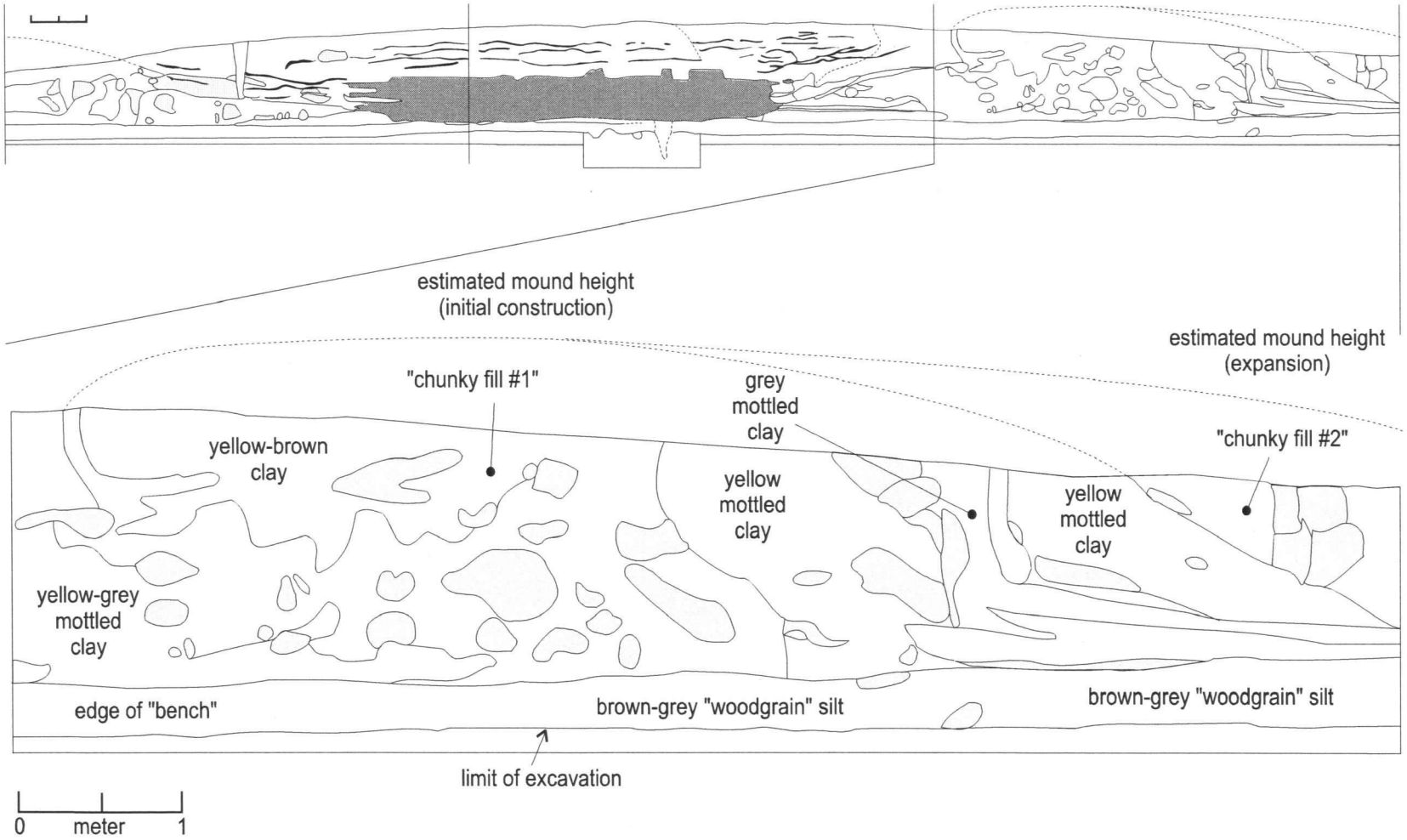


Figure 4.11 Profile of Trench #1, East Wall, Right Section, Mound 7, Paso de la Amada.

Excavation Units and Analysis

We devised the initial excavation strategy in order to maximize lateral exposure of structures such as residences or buildings. This was done to reveal patterns such as postmolds, which are often spread out over a large area but only on one level. Initially, we thought that Mound 7 would contain a sequence of structures, perhaps similar to that of Mound 6. However, after two weeks of excavation, no structures were exposed or even visible. At this point, we rejected the residential hypothesis and placed a narrow trench across the short axis of the mound. This new trench revealed that the mound consisted of two parallel platforms, as described in the previous section. It was clear from the beginning that the ballcourt was a massive structure. We therefore amended the strategy to identify the parameters of the ballcourt. This required defining its horizontal and vertical limits. We decided that our initial test trench should be expanded in order to completely bisect the short axis of the mound (see Figure 4.7). This became our "control trench," that is, it provided us with important architectural data which were subsequently used to determine the position of other units. We quickly realized, however, that we had cut through the ballcourt at a slightly oblique angle with respect to its true orientation. Rather than correct this with another trench across the short axis, we decided to re-orient trenches and test pits along the long axis. This strategy was highly effective. By the end of the excavation we were able to predict with great accuracy the size and shape of architectural features from only a few test pits. We chose this strategy in the interest of saving time and resources.

Since we knew from our main trench that the ballcourt was essentially symmetrical, we knew that architectural features found on one side had counterparts on the other. Occasionally, idiosyncrasies in the shape of ballcourt, either by design or by erosional processes, required the addition of side trenches or small "capture" units. Typically, this occurred near the end of a feature, such as a bench or lateral mound. This explains the two grid orientations visible in the excavation diagrams.

Excavation pits were placed for two main reasons: (1) to define architectural features such as benches and mounds, and (2) to collect samples for ceramic cross-dating of these features. The workers were split into two crews, one working on the architecture and the other collecting samples. In general, the architectural excavations were not screened. Screening was done in the so-called "control" units placed to collect ceramic samples. These were generally excavated in 20 cm levels unless otherwise noted. These units were placed at strategic locations around the ballcourt in order to collect equal samples from each architectural feature.

The control units provided an excellent means of dating construction episodes through analysis of the ceramics contained within the fill. Analyses of these samples took place in two stages. First, ceramics were washed, counted, sorted, and weighed. Then the samples were categorized by their temporal placement. This was done by the field crew in our Mazatán laboratory under the direct supervision of Michael Blake and John Clark. These initial counts and sorts gave us a rough idea of the age of the feature and the nature of the fill.

A second and more detailed analysis was undertaken later at the NWAF laboratory in San Cristóbal de Las Casas, Chiapas. This analysis was directed by Michael Blake and included crew chief Vicki Feddema, project newcomer David Cheetham, and me. In this stage of the analysis, we identified each individual sherd as to particular ceramic type or variety (e.g., Cotan Red or Salta Orange). These results were tallied for each individual excavation level. This permitted detailed confirmation of the preliminary phase designations assigned to the ceramic lots in the Mazatán field lab. This analysis took much longer than the initial assessment and was not completed until December of 1997. These data form part of the larger site report data, including excavations from other mounds and field seasons and I am not at liberty to provide them here. However, the data for the Mound 7 are presented in Appendix A. I have cross-checked the tallied results of the detailed type-variety analysis against phase designations made in the field. The phase designations correspond with the detailed analysis in all but a few cases. I have noted these discrepancies with the question mark sign in the ceramic tables below.

In addition to the phase designations, ceramic densities were calculated as sherds per unit volume, in this case the number of sherds per cubic meter of fill. In general, higher densities tend to correspond with a higher level of repeated activity. At Paso de la Amada, high ceramic densities are typical of residences and trash middens. Specialized structures, generally used on special occasions, tend to have lower ceramic densities, due to the limited range of activities occurring there. I compared the average number of sherds per cubic meter with other areas of the site. This comparison revealed that the ballcourt ceramic densities were extremely low. I then checked this result against other ballcourt excavations and found that this was a typical pattern for ballcourts.

Control Unit Summaries

The following section outlines the size and location of control units, gives a brief description of their contents, stratigraphy, and features. Control units were oriented on either the 1990 grid system (which appear as easting and northing coordinates) or the ballcourt grid, which conforms to the ballcourt orientation. These latter units have a variety of designations, e.g., "A7#2", "Unit 7", etc., that reflect different excavation lots. We expected to find the following ballcourt features in the course of our excavation: alley, benches, lateral mounds, and a basal mound surface (underlying all features). Excavation proceeded rapidly once these features were located. The stratigraphic elements of these features are described in each unit summary.

In Figure 4.12, I have presented a sample unit which explains the tables that accompany each unit summary. Note that ceramic densities are presented as the total number of sherds per cubic meter. This does not correct for sherd size, but this can be accomplished by dividing the total weight of all sherds by the total number of sherds. I have attempted to present the same information for all control units, however, some ceramic sherds were eroded or too small to identify.

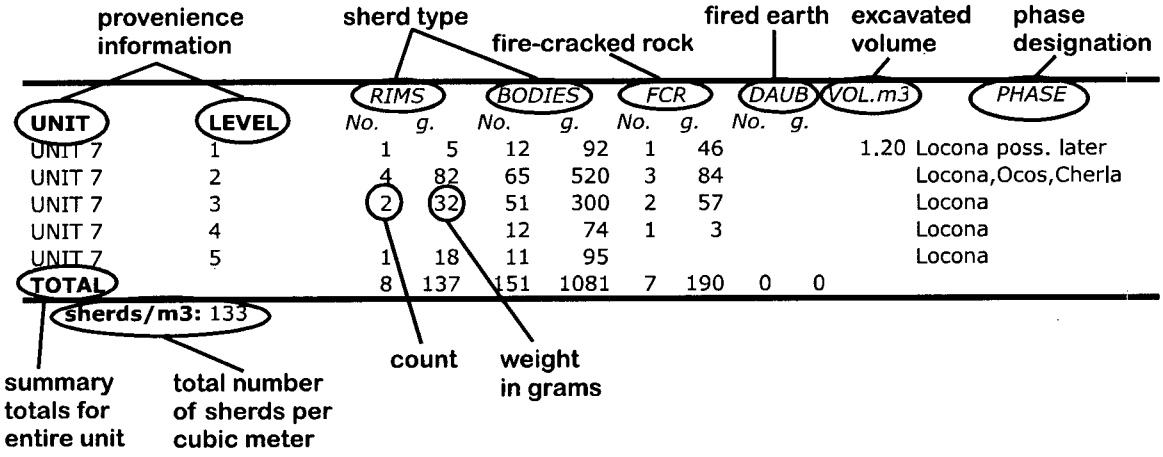


Figure 4.12 Sample Excavation Unit and Analysis.

Unit A7#2

A 1 x 1 meter unit was placed in the northwest quadrant of the mound and was designed to collect samples from the initial ballcourt construction episode. At this location, the ballcourt was exposed at the surface and therefore the entire excavation unit is shallow. Sterile was reached at 80 cm below surface (b.s.) and the excavation was terminated. The basic stratigraphy of this unit (from top to bottom) is presented in the table below.

Table 4.2 Data from Excavation Unit A7#2, Mound 7, Paso de la Amada.

Level	Description
0-20 cm	Grey mottled clay-silt; we designated this the "grey zone".
20-80 cm	Yellow-brown "chunky" fill; the "chunky" designation refers to presence of basket-loads or chunks of fill that characterize mound building or platform construction. In profile, these chunks appear a different color from the surrounding matrix.
80 cm	A tightly-compacted fine dark silt encountered. This silt has a "woodgrain" appearance and was thus so designated. This deposit was sterile, though on occasion we found artifacts embedded in the contact between this and the overlying deposit. The woodgrain surface was extensively sampled in 1990 and in the main trench, found in all excavation units, and therefore was the basal mound surface.

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
A7#2	1 (0-20)	2	14	17	80	4	22				Barra, Locona
A7#2	2 (20-40)			14	50						Locona
A7#2	3 (40-60)			6	36						Barra
A7#2	4 (60-80)			11	40	1	22				Barra
A7#2	5										-
TOTAL		2	14	48	206	5	44	0	0	1.00	

sherds/m3:50

Unit B15#1

This unit, measuring 1 x1 m, was located in the northwest quadrant, in the middle of the central alley. This unit provided a sample of the alley fill. Sterile deposits were reached with the woodgrain surface at 80 centimeters b.s. Ceramics from this unit were confined to the Barra and Locona phases. The details of the unit are found in the Table 4.3.

E 121/N99

This unit contained deposits from the benches which flanked the alley and the initial ballcourt construction. It formed the northern 1 x 1 m square of a larger 1 x 3 m unit. All ceramics were either Barra or Locona types. This sounding was deeper than most in order to examine the nature of the "woodgrain" stratum, which was found to contain pure Barra phase materials in low densities. Table 4.4 summarizes the excavation and describes the soil matrices.

Unit E100/N93

This unit was located off the main trench and was placed in order to sample the fill from the initial ballcourt. It measured 1 x 1 m and was excavated to a depth of 180 cm b.s. All the ceramics were either Barra or early Locona types. Chunky blocks of a yellow-brown silt characterized the fill of this unit. These often appeared as distinct basket loads when examined in profile. Table 4.5 provides the details.

Table 4.3 Data from Excavation Unit B15#1, Mound 7, Paso de la Amada.

Level	Description
0-40 cm	Grey zone.
40-80 cm	Laminated layers of fine silt and sand, alternating light and dark brown. These deposits, dubbed the "lamina," resulted from erosion of the lateral mounds which then filled the central alley.
80 cm	Woodgrain encountered; excavation terminated.

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
B15#1	1	4	32	73	210						Locona
B15#1	2			4	19						Locona
B15#1	3			5	29						Barra
B15#1	4			1	3	1	26				-
TOTAL		4	32	83	261	1	26	0	0	0.70	

sherds/m3:124

Table 4.4 Data from E121/N99 Excavation Unit, Mound 7, Paso de la Amada.

Level	Description
0-20 cm	Plow zone.
20-40 cm	Grey zone.
40-110 cm	Dark brown silt, which formed the "benches" was confined to the west wall of the unit. Chunky fill in a yellow-brown silt matrix form the remainder of the unit.
110-130 cm	Woodgrain silt; excavation continued to probe depth and composition of stratum.
130-150 cm	Woodgrain silt continues; human pre-molar and ceramic rattle fragment found in screen.
150-170	Excavation terminated as woodgrain encountered and artifact densities are low.

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
E121 N99	1 (0-20)	2	4	38	100						Locona? Barra
E121 N99	2 (20-40)			21	80	5	117				Barra
E121 N99	3 (40-60)	1	9	20	130	2	38				Locona/Barra
E121 N99	4 (60-80)	2	32	19	130	20	54	1	9		Locona/Barra
E121 N99	5 (80-100)			3	30	2	93				? dimple base
E121 N99	6 (100-110)			4	8						Barra
E121 N99	7 (110-130)			6	41						Barra
E121 N99	8 (130-150)										-
E121 N99	9 (150-170)			2	27	1	94				Barra
TOTAL		5	45	113	546	30	396	1	9	1.70	

sherds/m3:69

Table 4.5 Data from E100/N93 Excavation Unit, Mound 7, Paso de la Amada.

Level	Description
0-40 cm	Plow zone and disturbance. No data collected. Continue with Level 3.
40-50 cm	Grey zone.
50-110 cm	Chunky fill in yellow-brown silt matrix.
110-180 cm	Woodgrain silt; excavation continued to probe depth and composition of stratum.
180-200 cm	Sterile layer of woodgrain silt.

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
E100 N93	3										
E100 N93	4			1	24						Locona
E100 N93	5	1	27	4	17						Barra
E100 N93	6			1	21						Barra
E100 N93	7			2	9						Barra
E100 N93	8	2	64	10	80	4	83				Barra, Locona
E100 N93	9			3	28						Barra
E100 N93	10			2	17						Barra
TOTAL		3	91	23	196	4	83	0	0	1.60	

E100/N79

This unit was placed off the ballcourt structure in order to determine the nature of deposits around the court. A few problems, however, were encountered. First, the fill was a homogeneous grey clay, which made defining strata impossible. Second, the sherds from this matrix were badly eroded thwarting any attempt at type identification. Finally, several of the excavation level records are missing or incomplete. However, in my field notes, I indicated that much of the grey matrix could have been material redeposited from the top of the mound. This situation is similar to that seen by Clark in his long trench from Mound 6 toward Mound 7. He observed that much of Mound 6 had been removed by plowing activity and redeposited elsewhere. The density of the materials from this unit is higher than most other control units. Table 4.6 provides the details.

E75/N86

The objective of this 1 x 1 m test pit was to identify and date deposits associated with the initial ballcourt construction and possibly the expansion as well. However, the matrix was mainly chunky fill in a yellow-brown matrix, indicative of the initial ballcourt construction episode. All ceramics were either Barra or Locona phase. Specifics on the unit are found in Table 4.7.

Unit 4

This 1 x 1 m unit was designed to probe the southern limits of the ballcourt architecture. The northwest corner of the unit caught the southern limit of one of the benches. However, the rest of the unit was devoid of architectural features. The ceramic samples were pure Barra phase material. The summary description is provided in Table 4.8.

Table 4.6 Data from E100/N79 Excavation Unit, Mound 7, Paso de la Amada.

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
E100 N79	1	3	28	110	750	4	450				N/A
E100 N79	2	11	341	130	1030	4	44				N/A
E100 N79	3	19	242	184	1170	10	1000				N/A
E100 N79	4	22	446	266	2440	32	1900				N/A
E100 N79	5	3	66	54	460	2	323				N/A
E100 N79	6			6	73						N/A
E100 N79	7			3	20						N/A
E100 N79	8										N/A
E100 N79	9			1	18						N/A
TOTAL		58	1123	754	5961	52	3717	0	0	1.60	

sherds/m3:508

Unit 7

This 1 x 1 m unit was placed at the end of a long trench in order to obtain information about off-mound deposits. Sherd densities were slightly higher, and some Ocós and Cherla phase types were present in the sample from Level 2. Table 4.9 gives the unit summary.

E83/N105

This provided another 1 x 1 m sample of the composition of the initial lateral mounds. The results from this test pit mirror those of E75/N86. Ceramic densities were extremely low. Levels 3-7 were sterile. This suggests that the fill for this part of the construction was

Table 4.7 Data from E75/N86 Excavation Unit, Mound 7, Paso de la Amada.

Level	Description
0-20 cm	Loose, yellow silt.
20-80 cm	Chunky fill in yellow-brown silt matrix.
80-100 cm	Woodgrain silt.
100-120	Sterile encounted at 120 cm b.s.; excavation terminated

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
E75 N86	1	4	23	37	160						Barra/ Locona
E75 N86	2	2	6	7	25						Locona?
E75 N86	3	1	8	3	33						Barra
E75 N86	4										-
E75 N86	5			6	65						-
E75 N86	6			16	69	1	6	2	6		-
TOTAL		7	37	69	352	1	6	2	6	1.35	

sherds/m3: 56

Table 4.8 Data from Excavation Unit 4, Mound 7, Paso de la Amada.

Level	Description
0-60 cm	Yellow, mottled clayey silt.
60-80 cm	Woodgrain silt. Sterile.

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
UNIT 4	1			5	27						-
UNIT 4	2			5	31	1	35				Barra
UNIT 4	3	1	6	2	16						Barra
UNIT 4	4			7	47	3	27				Barra
TOTAL		1	6	19	121	4	62	0	0	0.80	

sherds/m3:25

very clean, perhaps coming from a new source. Only a few Barra and Locona phase sherds were recovered. Table 4.10 contains the unit details.

E100/N116

This unit provided the only controlled sample of ballcourt expansion fill (see Table 4.11). Surprisingly, this fill only produced evidence of Barra phase sherds in very low densities. I initially thought that this resulted from the use of clean fill in the ballcourt expansion.

Table 4.9 Data from Excavation Unit 7, Mound 7, Paso de la Amada.

Level	Description
0-40 cm	Dark grey, mottled clayey silt
40-80 cm	Tan mottled clayey silt.
80-100 cm	Tan-orange mottled silty clay. Sterile.

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
UNIT 7	1	1	5	12	92	1	46				Locona
UNIT 7	2	4	82	65	520	3	84				Loc.,Ocos,Cherla
UNIT 7	3	2	32	51	300	2	57				Locona
UNIT 7	4			12	74	1	3				Locona
UNIT 7	5	1	18	11	95						Locona
TOTAL		8	137	151	1081	7	190	0	0	1.20	

sherds/m3: 133

Table 4.10 Data from E83/N105 Excavation Unit, Mound 7, Paso de la Amada.

Level	Description
0-20 cm	Yellow-brown silt.
20-80 cm	Chunky fill in yellow-brown silt matrix.
80-100 cm	Woodgrain silt.
100-140 cm	Woodgrain continues until sterile; excavation terminated.

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
E83 N105	1			15	87	4	81				Barra
E83 N105	2			9	72	1	22				Barra/Locona
E83 N105	3										-
E83 N105	4										-
E83 N105	5										-
E83 N105	6										-
E83 N105	7										-
TOTAL		0	0	24	159	5	103	0	0	1.50	

sherds/m3:16

However, unscreened samples from the test trenches confirmed that the ballcourt expansion occurred sometime during the middle of the Locona phase. In retrospect, it would have been useful to obtain a few more controlled samples of this fill. Due to lack of time, we were not able to achieve this objective.

E101/N124

The objective of this larger test pit (1 x 3 m) was to obtain a better sample of off-mound deposits. It was thought that these deposits formed a midden, as sherd densities were considerably higher than other units. No architectural features were encountered. Ceramic types run the gamut from the Barra to the Cuadros phase, with the majority of these being Locona phase types. An unusually high quantity of fire-cracked rock was also recovered (see Table 4.12). This is often indicative of cooking activity and may represent some of the feasting activities thought to be associated with the ballcourt.

E100/N98

This unit formed part of the main trench and laid adjacent to Test Pit 1 from 1990. The general stratigraphy of Test Pit 1 has already been discussed. This unit was placed in order to sample the bench and the erosional fill from the initial ballcourt construction. With the exception of the top 30 cms, all of the ceramics from this unit date from the late Barra phase to the early Locona phase. This unit had the highest ceramic density of all control units and provided important confirmation of the date of the initial construction. The stratigraphy is summarized in Table 4.13.

Table 4.11 Data from E100/N116 Excavation Unit, Mound 7, Paso de la Amada.

Level	Description
0-60 cm	Dark brown chunky fill.
60-80 cm	Yellowish silty fill.
80-100 cm	Woodgrain silt.

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
E100 N116	1										-
E100 N116	2					1	3				-
E100 N116	3			15	130	4	10				Barra
E100 N116	4					2	4				-
E100 N116	5			3	20						-
TOTAL		0	0	18	150	7	17	0	0	1.00	

sherds/m3:18

Table 4.12 Data from E101/N124 Excavation Unit, Mound 7, Paso de la Amada.

Level	Description
0-50 cm	Dark grey clay.
50-80 cm	Light grey clay.
80-110 cm	Yellowish fill.
110-120 cm	Woodgrain silt.
120-140 cm	Moderately dense midden deposit in grey clay matrix.
140-200 cm	Grey clay matrix with fewer sherds than previous level
200-240 cm	Grey clayey sand.
240-260 cm	Sterile sand; excavation terminated.

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
E101 N124	1	10	104	202	1310	2	10	2	9		Barra/Locona
E101 N124	2	37	364	463	3390	6	840				Loc., Cuadros
E101 N124	3	26	258	364	2120	12	120	3	5		Locona, Barra
E101 N124	4	24	270	160	1570	17	1350	4	7		Locona/Barra
E101 N124	5	25	503	31	690	1	80				Locona/Ocos
E101 N124	6	39	596	266	3100	9	343	4	80		Loc.,Ocos,Barra
E101 N124	7	3	17	54	330	2	102				Locona
E101 N124	8	22	449	210	1500	9	500	4	25		Locona
E101 N124	9	12	230	102	1000	11	700	5	45		Locona
E101 N124	10	7	132	110	1330	4	332	2	50		-
E101 N124	11	6	211	34	540	11	1290				-
E101 N124	12			2	220	3	224				-
E101 N124	13										-
TOTAL		211	3134	1998	17100	87	5891	24	221	7.50	

sherds/m3:295

Table 4.13 Data from E100/N98 Excavation Unit, Mound 7, Paso de la Amada.

Level	Description
0-30 cm	Dark grey clay or "grey zone" with dark humic lines.
30-50 cm	Yellow-brown clay with dark humic zones.
50-70 cm	Yellow-brown silt with mottled chunky fill.
70-90 cm	Yellow to light brown silt "bench".
90-100 cm	Woodgrain.

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
E100 N98	1 (0-10)	14	185	177	870	5	411				Lt. Barra,Locona,Ocos
E100 N98	2 (10-20)	9	178	182	1310	5	720	4	15		Barra, Locona, Cherla
E100 N98	3 (20-30)	8	86	207	1290	10	315				Barra, Locona? Cherla
E100 N98	4 (30-40)	14	165	251	1340	4	116	3	5		Lt. Barra, E. Locona
E100 N98	5 (40-60)	28	332	354	2070	12	575	12	93		Lt. Barra, E. Locona
E100 N98	6 (60-80)	19	145	216	1200	11	210	5	10		Lt. Barra, E. Locona
E100 N98	7 (80-100)	5	64	42	259	3	25				Lt. Barra, E. Locona
TOTAL		97	1155	1429	8339	50	2372	24	123	2.80	

sherds/m3:545

Unit E100/N102

This unit was also located along the main trench and provided a good sample of the erosional deposit known as the "lamina." These were fine layers of sandy silt and clay, which were deposited in alternating light and dark bands. Close examination of these deposits revealed they were caused by erosion of the initial lateral walls of the ballcourt. The top level is the only one with ceramic types from later periods. All other ceramics, including those of the lamina, were either Barra or Locona phase types. Level 1 began at 30 cms below surface, in order to avoid oversampling of the upper grey zone (Table 4.14). In addition to the ceramic samples, soil and flotation samples were taken from the control units. The results of these analyses are pending.

Table 4.14 Data from E100/N102 Excavation Unit, Mound 7, Paso de la Amada.

Level	Description
0-10 cm	Dark grey clay or "grey zone" with dark humic lines.
10-20 cm	Yellow-brown clay with dark humic zones.
20-80 cm	Alternating light and dark bands of sandy silt or "lamina".

		RIMS		*BODIES*		*FCR*		*DAUB*		*VOL.m3*	*PHASE*
UNIT	**LEVEL**	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*	*No.*	*g.*		
E100 N102	1 (0-10)	9	214	111	650	5	650	3	30		Cuad,Ocos,Cherla
E100 N102	2 (10-20)	10	112	61	330	2	160				Locona
E100 N102	3 (20-30)	2	40	52	280	2	127	1	2		Locona, poss. later
E100 N102	4	3	18	20	100						Locona? Barra (1)
E100 N102	5	4	9	43	130	3	12	1	3		Locona, Barra
E100 N102	6A	1	3	22	60	1	124				Barra
E100 N102	6B	1	2	37	120	2	105	1	4		Barra, Locona
E100 N102	7 (80-100)	1	3	4	15						Barra
TOTAL		31	401	350	1685	15	1178	6	39	3.20	

sherds/m3:119

Description of Ballcourt

Excavation revealed a large, earthen ballcourt constructed in two major episodes: an initial construction and later expansion (Figures 4.13 and 4.14). During the early Locona phase, two long parallel mounds (which formed the ballcourt walls), benches, and a narrow alley were constructed on top of an earlier Barra surface. We do not know much about this earlier Barra occupation, but it appears that the mound may have been used as a ballcourt field prior to the construction of the formal ballcourt during the early Locona phase. Such a hypothesis is consistent with the low artifact density of the Barra surface and the stratigraphy of the mound. In addition, the underlying Barra surface shows evidence of trampling and leveling.

During the early Locona phase, construction of the parallel mounds occurred. These mounds were roughly symmetrical, with the north mound measuring 78 m long by 5.5 m

wide and 1.45 m high and the south mound measuring 74 m long by 4.5 m wide and 1.45 m high. The alley between them measured 77 m x 6.8 m. At almost eighty meters in length, this court is among the longest anywhere in Mesoamerica and covers an area roughly the size of modern football field. This ballcourt also contained "benches", a feature characteristic of later Mesoamerican ballcourts. These benches took the form of flat earthen structures which were present on both sides of the alley and measured 75 m x 2.5 m each, with an average rise of 35 cm above the court floor. The benches sloped from the foot of each mound towards

Figure 4.13 Artist's Conception of Ballcourt at Paso de la Amada (courtesy W. Wenzel).

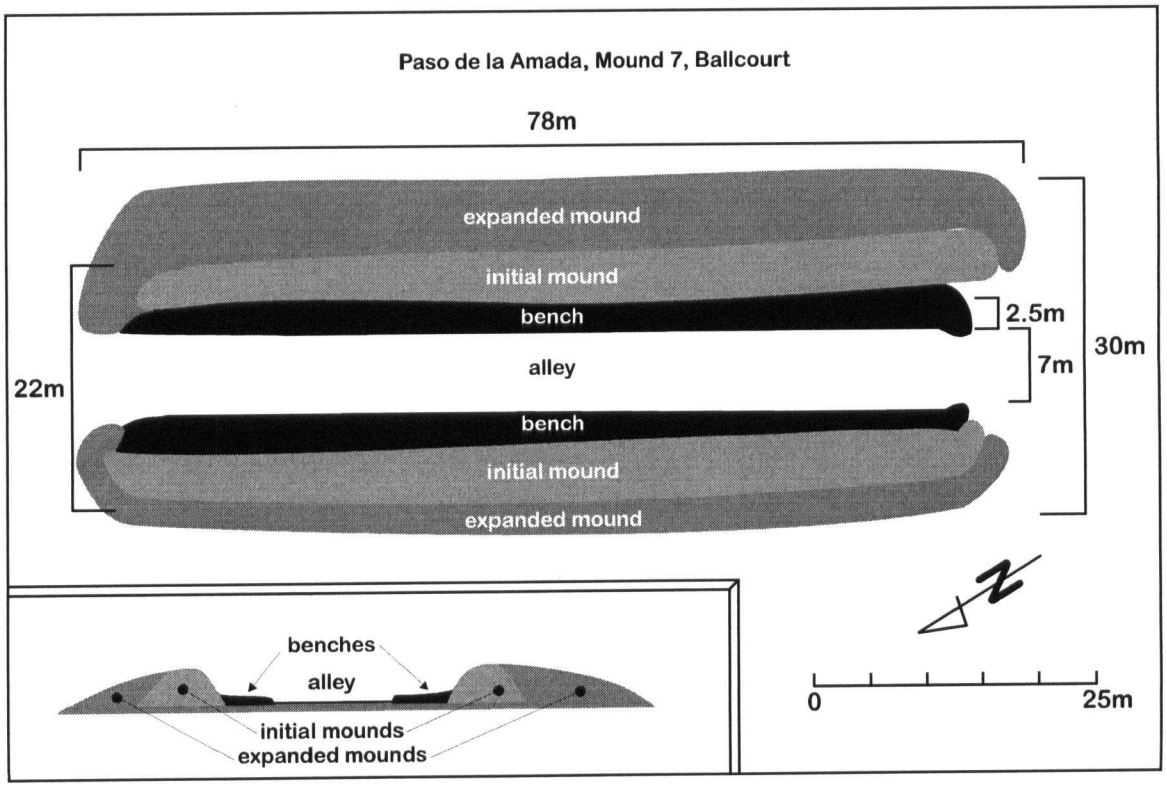


Figure 4.14 Ballcourt Features and Construction Sequence.

the center of the alley. No end zone constructions were encountered, suggesting the court was open-ended. No stone markers, tenons (rings), or any other features such as caches were found in association with the ballcourt. However, it should be noted that our excavation strategy was designed to define the architectural features of the mound, and time restrictions prevented us from probing outside the limits of the ballcourt. The ballcourt was oriented 35° east of magnetic North. This orientation was at right angles to the orientation of Structure 4 on Mound 6.

The first construction covered a total area of 1630 m^2 with a volume of 1229 m^3 of earthen fill. The exact measurements, area and volume calculations can be found in Table 17. With regard to labor, using a calculation derived by Abrams (1994:44) of 2.6 m^3/person/day for earth procurement, I estimate that it would have required a minimum of 473 person-days to build the initial ballcourt. In other words, it would have taken 22 people approximately 22 days to build this structure. I make more detailed calculations in a later section, incorporating more steps in the construction process. For now, however, these represent minimum working estimates.

Sometime after its initial construction, and no earlier than the late Locona phase, the ballcourt was expanded to almost twice its original size by the addition of 1135 m^3 of fill to the outside walls of each mound, plus a minor lengthening of the central alley. Some rough calculations provide an estimate of the scale of this expansion project. One cubic meter of river sand (roughly equivalent in weight to the type of fill used in the ballcourt) weighs a minimum of 1300 kilograms. The addition of 1135 m^3 of fill therefore weighed a staggering 1.48 million kilograms!

Table 4.15 provides the dimensions as measured from the excavations. Some of these estimates are based upon projections that assume symmetry of the court. This was necessary due to the logistical constraints of time and personnel. The symmetry of the court was verified through test excavations in key locations. However, most are actual measurements from the excavations. Also, volumes are based on uncompacted soil, and therefore underestimate the true volume. In order to obtain accurate measurements over great distances, a water level was used. All dimensions are presented in meters, area in square meters, and volume in cubic meters.

The ballcourt expansion brought the total area of the ballcourt to 2985 m^2 and the total volume to 2364 m^3. The expansion would have taken an additional 437 person-days of labor, slightly less than the time needed to construct the initial ballcourt. This estimate is similar to the scale of labor involved in the construction of Structure 2 on Mound 6 where Blake (1991:36) postulated that it would have taken 25 people 20 days to build Structure 2. Again, however, this estimate represents the minimum effort which only accounts for earth procurement. The expansion would have required an amount of labor nearly equal to that of the initial construction. It is difficult to ascertain from the current data exactly when the ballcourt expansion took place. It is possible that the ballcourt was expanded immediately after its initial construction. However, the data at hand point to a late Locona phase expansion.

Table 4.15 Ballcourt Measurement, Area, and Volume, Mound 7, Paso de la Amada

MOUNDS/FEATURE	DIMENSIONS					NOTES
	L	W	H	Area(m^2)	VOL(m^3)	
MOUND 7 Overall	110.0	50.0	1.75	5500	9625	
Initial South Mound	74.3	4.3	1.45	318	462	
Initial North Mound	77.5	5.4	1.45	415	602	
Expanded South Mound	82.5	6.4	1.40	530	743	
Expanded North Mound	79.6	3.2	1.40	256	358	
AVERAGE	78.5	4.8	1.40			
BENCHES						
South	75.0	2.5	0.36	188	67	Thk Max 40/ Min 20cm
North	75.0	2.5	0.36	188	67	Thk Max 43/ Min 20cm
AVERAGE	75.0	2.5	0.36			Width range 1.75-3.5m
ALLEY						
initial construction	76.8	6.8		521	31	
expansion	83.9	6.8		570	34	
AVERAGE	80.4	6.8				
Length Overall	79.42					
Width Overall	31.07					
ALLEY FLOOR	6-8cm thk					
SUBFLOOR ("woodgrain")	15-25cm					
			Total Initial ballcourt	1630 m^2	1229 m^3	
			Expansion	1356 m^2	1135 m^3	
			Total both ball-courts	2985 m^2	2364 m^3	

Straigraphic Summary and Ballcourt Chronology

In sum, the stratigraphic profiles indicate four distinct features spanning the pre-construction use of the mound, through ballcourt construction, and abandonment (Figure 4.15). First, the mound was initially occupied during the Barra phase, where the inhabitants took advantage of its natural elevation above the surrounding terrain. This occupation is thin, and we do not yet know much about it, but it may contain an open-field type ballcourt which lacks architectural features. Next, during the early Locona phase, the initial construction of the formal ballcourt was undertaken. Two long parallel mounds, benches, and an alley floor were constructed directly atop the Barra surface. After its construction, earth from the mounds eroded into the central court area, causing a 70-80 cm thick layer of finely stratified sands, silts, and clays to overlay the alley. As erosion continued the alley filled in and the tops of the flanking mounds were weathered to a flat surface. Finally, above the infilled court lies a distinct layer of dark grey clayey-silt which contains numerous humic

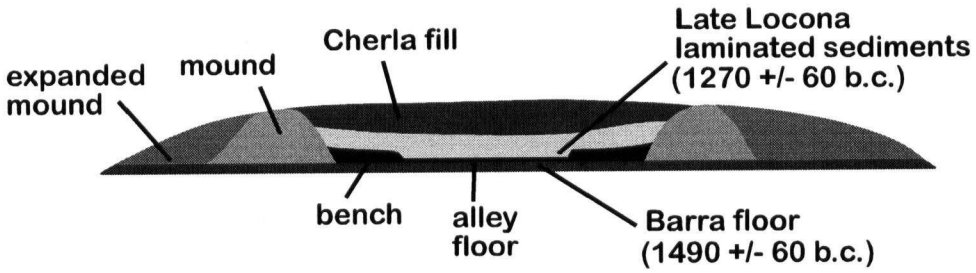


Figure 4.15 Locations of Radiocarbon Dates.

zones, indicating that dense vegetation periodically reclaimed the court. Mixed in this dark grey deposit are ceramics from Cherla times and later phases. This deposit provides a means of dating the abandonment of the court. Three lines of evidence support the early Locona (1400 bc) date for the ballcourt. They are the following: ceramic cross-dating, radiocarbon assays, and the depositional history of the site. Beginning with the ceramics, our initial analysis of ceramics from the 1995 excavations suggested that the ballcourt construction post-dated the Barra occupation. All ceramics from the first formal ballcourt construction were early Locona phase and were similar to those found in early Locona deposits in other parts of the site. After examining these initial samples, we collected additional screened samples from: (1) each parallel mound, (2) the mound expansion, (3) the central court, (4) the ends, and (5) the skirt of the mound outside the ballcourt and off the edge of the mound. The goal of these excavations was to fix the construction and use dates of the ballcourt. From these artifact samples the following sequence of events for Mound 7 can be delineated: First, samples from the first pair of mounds contained exclusively Barra and early Locona phase ceramics, indicating that the formal ballcourt was initially constructed and used during the early Locona phase. Samples from the second pair of mounds suggested that the ballcourt was expanded, in the late Locona phase. From the central court excavations, we learned that infilling of the ballcourt began in the late Locona phase and was completed by the Ocós phase. Cherla phase and later deposits cap the infilled court, indicating that the ballcourt was completely abandoned by the Cherla phase. Excavations from the ends of the court corroborated other evidence that the ballcourt was constructed on top of an earlier Barra phase surface. Finally, excavations from the edges of the mound produced Cherla midden deposits, resulting from the Cherla phase occupation after the ballcourt was abandoned.

Two AMS radiocarbon dates confirm the construction sequence outlined above (Figure 4.15). The first of these comes from the initial Barra surface underlying the ballcourt, which produced a date of 1490±60 bc (Beta-82233, cal. BC 1895 to 1605, intercept=BC 1735) or late Barra phase. The second date comes from the laminated sediments just above the alley floor (i.e., early in the infilling of the ballcourt). This deposit yielded a date of 1270±60 bc (Beta-82234, cal. BC1620 to 1390, intercept=BC 1490), or late Locona. We do not yet have a radiocarbon date from the grey deposit which caps the infilled court; however, a hearth on the surface of the mound produced a conventional date of AD 1190±80 (Beta-82235, cal. AD

1065 to 1075 and cal. AD 1155 to 1395, intercept=AD 1275), indicating that the mound was probably reused during the Postclassic period.

The depositional history of the site also supports the claim of an early Locona date for the formal ballcourt construction. By the late Locona phase, Paso de la Amada was so large it is unlikely that the builders of the ballcourt could have avoided the inclusion of late Locona fill if they had built it at that time. It is interesting to note that the ballcourt was built concurrently with the large residence at Mound 6, suggesting a strong link between these two structures.

Were emerging elites able to aggrandize themselves through their sponsorship of community construction projects? Given the data at hand, this is a difficult question to answer. However, the construction of the formal ballcourt occurs in tandem with several key events in the Mazatán region. One, during the early Locona phase, a four-tier site settlement hierarchy was developing which helped to propel Paso de la Amada to the status of a regional center. The ballcourt could have enhanced its position within that hierarchy. Two, the construction of an elite residence at Mound 6 correlates with the ballcourt construction. If a chiefly lineage built the large residence, then a connection may have existed between these two monumental structures and the people that built them. It is interesting to note that both projects required similar labor investments and are located in the same sector of the site. Three, the presence of a ballcourt at Paso de la Amada suggests it was part of a network of similar courts which developed during the Locona phase and spread throughout the Mazatán region. Though no other contemporary ballcourt has been found, evidence from later times suggests that formal ballcourts were *always* a part of a network. Four, the abandonment of the ballcourt coincides with the decline of Paso de la Amada as a regional center. Its replacement by another center, Aquiles Serdán, would suggest, if my hypothesis is correct, that a ballcourt may lie buried there as well.

CHAPTER V

TIME, SPACE AND BALLCOURTS

> While the evidence which exists is sparse, the sponsorship of competitive feasts and games in these facilities [ballcourts] must have been a significant process in the negotiation of power relations. (Fox 1994:227)

The Mazatán data outlined in the previous chapter provide a backdrop to consider different models for the emergence of complexity. As noted in Chapter 2, the ballcourt is a new and unique variable in the process. In this chapter, I discuss ballcourts in regional context and present my ideas about the role of ballcourts in the transition to complexity in Early Formative Mesoamerica.

A number of ethnohistorical and archaeological examples were previously cited in an attempt to show that ballcourts do not occur in isolation. I hypothesized that the Paso de la Amada ballcourt was part of a network of similar courts that extended throughout the Mazatán region by the beginning of the Locona phase. To date, however, no other ballcourts have been found, leaving the hypothesis to stand without any direct supporting evidence. If the pattern in later times can be taken as an indicator, then one would expect to find at least one of the following: first, given that ballcourts are associated with regional centers and other large sites, more ballcourts might be found at Paso de la Amada itself, and second, contemporary and successor regional centers should also possess ballcourts.

An analog to the Mazatán situation can be found among Middle Formative (Joyce 1992, 1996) and Terminal Classic sites of the Southeast Periphery of Honduras (Fung 1995) Both sets of excavations show a pattern similar to Mazatán, where competitive feasting was taking place within the context of elite residences. The appearance of ballcourts was coterminous with this feasting activity. Fox (1994:226) using evidence of feasting recovered from ballcourt caches, argued that the initial construction of a ballcourt represented an attempt at social differentiation by one segment of the community. He suggested that ballcourts were specifically chosen in order to link the sponsor community with distant regions of Mesoamerica where ballcourt construction was already highly institutionalized. He added that the creation of permanent space dedicated to feasting, ballgames, and other ritual permitted a new level of social interaction between neighboring communities, visibly raising the profile of the host community (Fox 1994:227).

The argument makes sense in terms of a local aggrandizer tapping into an existing network of symbolic interaction which would have had tangible benefits to the sponsor. This

also fits well within the parameters of the network strategy described by Blanton and his colleagues (Blanton *et al.* 1996). However, what was the driving force was behind the initial creation of these networks? As Clark (1994) has argued, one aspect of aggrandizer behavior is the constant search for new and innovative ways to enhance one's prestige. The introduction of ceramic technology during the Barra phase was a good example of this behavior in the Mazatán region. The ballgame was already widespread throughout Mesoamerica by the late Archaic period (Chapter 3). The evidence presented in the previous chapter showed that some individuals or groups at Paso de la Amada were experimenting with large scale architecture, argued by Blake (1991) to be an elite residence. The construction of a permanent ballcourt could have been an attempt by an individual aggrandizer to institutionalize a symbolic event (the ballgame) which had already gained currency in a number of different regions. This could explain both the timing of the event and its lack of clear antecedents in the region. However, the same evidence could point to other possibilities as well. Group or corporate competition could produce a similar archaeological pattern. As discussed in Chapter 2, ballcourts cross-cut both network and corporate strategies, exhibiting characteristics of each. At present, we lack the evidence to tie a specific individual to the ballcourt construction.

Data from later Mesoamerican societies indicate that competition between elite centers coupled with urbanization accelerated the proliferation of ballcourts. Models developed by Santley *et al.* (1991) and de Montmollin (1997) link the processes of centralization and de-centralization of political authority to the frequency of ballcourts. The model presented by de Montmollin claims that within a given site-settlement hierarchy, only sites above a certain population threshold possessed ballcourts. It is worth reiterating here ballcourt construction at Paso de la Amada occurred in tandem with the four-tiered hierarchy inferred for the Locona phase (Clark 1994).

Emulation and Elite Competition

The construction of the ballcourt may have been an attempt by some Mokaya to emulate elite behavior in other regions. An interesting parallel to the Mazatán case comes from the Maya lowlands of Belize. In a recent M.A. thesis, David Cheetham (1998) considers the emergence of social and political inequality among the transitional Early/Middle Formative period Maya. Using figurine and ceramic data, Cheetham argues that the appearance of the Olmec-like political and religious symbols at the site Cahal Pech was an attempt by local elites to emulate the sophisticated religious complex of the Olmec. This behavior led to the adoption of Olmec-like symbols which were then used by local elites to impress their followers with their connections. Cheetham (1998:33) notes that these symbols, far from being perceived as foreign, had many referents in the existing central lowlands system, thereby facilitating their adoption. He proposes that shamans were the agents of this transformation because they were in a position to mediate and manipulate the power of these symbols.

Perhaps the most fascinating aspect of the Cahal Pech case is that the adoption of the Olmec-like symbols occurred at the same time as the emergence of complexity. This process

of elite emulation of the Olmec has been discussed elsewhere and will not be reviewed here (see, e.g., Flannery 1968; Coe 1989; Lowe 1989; cf. Demarest 1989). Rather, I draw on this idea to suggest that the construction of a ballcourt could have been a means of emulating more sophisticated elites. This raises the problem of whom, if anyone, the Mokaya were trying to emulate? The fact that no other contemporaneous peers have yet been found mitigates against the emulation hypothesis. However, recent work in the Gulf Coast area (Stark and Arnold 1997) may yet discover that the Mokaya and the Olmec were initially competing groups, a hypothesis already proposed by Clark (1990). If this is the case, then one would expect that more (and possibly earlier) ballcourts should be found in both regions. Given the evidence at hand, I favor a view that the Mokaya institutionalized and enshrined an already pan-Mesoamerican ballgame through the construction of the initial ballcourt at Paso de la Amada. This implies a significant ideological component was tied to the early ballgame and that the Mokaya took it to a new level.

The above argument may sound like diffusion with a twist. The evidence suggests that the situation I describe is similar to what David Kelley calls "dependent invention" (Kelley 1992; cited in Clark and Gosser 1995:209). While Clark and Gosser discuss this in reference to the adoption of ceramic technology, a situation already discussed for the Barra phase, I see that the application of this idea is not limited to pure technologies. A similar idea may be applied to the ballcourt itself when it is viewed as an innovation. In brief, dependent invention involves the adoption of a particular technology which is subsequently modified by the borrowing group and put to uses foreign to the donor group. This principle implies that people were competing in such a way as to drive them to seek new and different innovations. The ballcourt, in this view, could have been one such dependent invention, drawing upon a long-term tradition of ballplaying but organizing it in a ritual space and tying it to a fixed location.

Another example of this principle comes from the Middle Formative site of Nakbe, Guatemala, the first known Maya site with monumental construction (Sharer 1994:82-84). By the late Middle Formative, the site of Nakbe possessed 20 meter high pyramids, colossal monuments, and a highly-developed planned ceremonial complex (Hansen 1991). All of these features were radical innovations for their time in this region. Traditionally, it was thought that these features were indigenous innovations—an interpretation still supported by the archaeological evidence. However, the organizational template for these constructions was derived elsewhere. As Clark (1998) has recently shown, this complex may have originated at La Venta, along with the ceremonial layout and site orientation. This example reinforces the idea that a concept or idea may be borrowed and put to use in ways foreign to the donor group. This example also illustrates the close links between early Mesoamerican societies during the development of more complex social and political arrangements.

One further comment is required here. Like others, I invoke human agency rather than teleology in the construction of this argument. This means that no individual set out to make a complex society out of an egalitarian one. Instead, I suggest that social change and the intensification of social differences were the result of innovation, as in the examples cited above. If aggrandizers built a ballcourt, temple, or pyramid, they would have had no way of knowing the long-term consequences of their actions (see Clark and Blake 1994). The

interesting aspect of this argument is that the recipient societies have to be in a position to make use of the donated idea or technology. Therefore, it comes as no surprise that the construction of the ballcourt and other monumental structures occurred during a complex nexus of social, political, and economic circumstances. Having peers of equal status, along with more sophisticated distant neighbors, provided a context in which the new innovation could make sense in terms of traditional beliefs (Cheetham 1998).

In Chapter 2, I outlined some of the more salient models which address the origins of complexity using archaeological data. I noted that these cases often did not have ethnographic analogs, and, therefore, we were dealing with social and political arrangements which lack known cognates. Because of this situation, I argued that the most relevant models were those which could accommodate a variety of evolutionary trajectories. Additionally, these models considered both processual concerns and human agency in their explanations. The models proposed by Hayden (1995) and Clark and Blake (1994) emphasized competitive feasting against a backdrop of aggrandizer behavior. I considered this behavior within the larger context of elite strategies for power (Earle 1997). The interplay between competitive aggrandizers and the construction of the ballcourt will be considered here. I would be remiss if I did not direct the reader to the prior evaluation of the Mazatán case by Lesure (1995). However, since his study focused on the circulation of valuables, it did not have the data necessary to address the architectural realm.

Competitive Feasting

To reiterate an earlier discussion, the Hayden model posits that competitive feasting was an important element in the transition to social and political complexity. Feasts satisfied a variety of functions, among them serving as a type of payment for debts incurred. Fox's work (1994) has clearly established ballcourts as multipurpose facilities, often being used as locales for ritual feasting. Feasts were almost always accompanied by games, the ballgame being chief among them.

An often overlooked aspect of feasting is that the objective of a feast can have drastic effects on refuse patterns. For example, if the objective of the feast were to give away as much wealth as possible, as is the case with potlatches of the Northwest Coast of North America, then one would expect a more even distributional pattern of feasting utensils and food residues throughout the community. The sponsor in this case would be archaeologically invisible in terms of refuse disposal patterns. In this scenario, the objective would be for guests to take home as much as they could, including the ceramic vessels, leaving the rich host looking like the pauper.

As oversimplified as this analogy is, it demonstrates that the patterning of feasting is complex and that certain variables, such as ceramic vessel consumption, when considered alone, may produce ambiguous patterns. In the Paso de la Amada case, the observed pattern, namely, the lack of clear differential distribution of feasting vessels (Lesure 1995:290), shows that this one line of evidence taken alone may lead to different conclusions.

Another point to be considered is that followers of aggrandizers also have a variety of options available to them. Essentially, "in all these [transegalitarian] societies, there are also

clear statements about supporters and tenants maintaining their residence options open so as to be able to affiliate with Entrepreneurs or corporate groups that provide the most benefits and the fewest excessive demands." (Hayden 1995:66) If this criterion is applied to the Mazatán case, then one would again expect some ambiguity in a study of the refuse patterns. Shifts in allegiance could result in more uniformity and less asymmetry in the distribution of wealth goods. Alternatively, this shift could signal different elite strategies. For example, Blanton *et al.* (1996:5) argue that the presence of large quantities of prestige goods (such as fancy pots) are indicative of a network-based strategy, as competing elites vie for control of exchange systems.

In his recent dissertation, Richard Lesure (1995) attempted to evaluate the Friedman and Rowland's model (1978), which postulates a specific distribution of feasting materials in an archaeological context, and could therefore be linked to competitive feasting. Lesure (1995) focused on the relationship between feasting and the circulation of valuables within the site of Paso de la Amada. In order to test the assumptions of the Friedman and Rowlands model, Lesure compared ceramic assemblages from different contexts within the site. He hypothesized that ceramic vessels and valuables should be unevenly distributed if feasts were sponsored by a particular individual or lineage. However, using ceramic data from Paso de la Amada, he found no evidence of spatial differentiation with respect to feasting during several archaeological phases (Lesure 1995:290). Lesure cautions that this result can be interpreted in two ways: that no one area of the site dominated feasting activities or that participants were sharing equally in the feasting and therefore sponsored feasts would go undetected (Lesure 1995:290). He also noted that differences existed in slip colors on ceramic serving vessels found at Mounds 6 and 12 at Paso de la Amada. He suggested that this difference was indicative of a flow of vessels from Mound 6 to Mound 12. Lesure (1995:290) concludes that this pattern supports "the idea that activities related to the sponsorship of feasts were widespread at the site."

Lesure's conclusions are problematic in my view because they contradict the architectural evidence that Mound 6 is an elite or high-status residence. Further, his conclusions rely on a number of questionable assumptions regarding the nature of feasts. Specifically, Lesure (1995:318) argues that anyone contributing something to the feast is contributing to sponsorship; therefore, the real issue becomes one of how *credit* is obtained for particular feasts. The ethnographic pattern suggests that credit for feasts is taken by aggrandizers such as Big Men or chiefs, but as Lesure (1995:319) implies, this may not be a universal pattern. Lesure elucidates the important point that sponsorship is culturally-determined; if all participants take credit for their contribution, the power derived from the sponsorship of the feast is equally diluted (Lederman 1991). However, his conclusions do not agree with other lines of evidence. In order to validate his claims, one must ignore the now robust architectural data coming from Paso de la Amada and the surrounding region.

An examination of architecture can help alleviate some of the problems inherent in other classes of data. This variable, however, also produces ambiguity with regard to interpretation of structure use and function since many residential structures serve more than one purpose. But if we examine nonresidential space, the picture becomes clearer. The ballcourt, being constructed near the site center and made by community labor, provides a useful example of

a nonresidential forum for feasting and gaming. These two activities create debt relationships, often with unpredictable outcomes, which merit closer examination.

Warfare and Debt Creation

Feasting, previously discussed in the context of the models of Hayden and others, has been argued to be an important component of debt creation, alliance building, and even social change (Godelier and Strathern 1991). Many of the ethnographic examples of feasting come from Oceania and New Guinea where "Big Man" societies proliferate. These societies are characterized by strong personality-based leadership and power which is not heritable. These societies provide a valuable glimpse at the process of wealth accumulation, debt creation, and reciprocity. Since any given Big Man must engage in all these activities, his *modus operandi* is important if we are to understand what material traces are left of these activities. One activity Big Men participated in with zeal was warfare. A closer examination of warfare shows that its causes and consequences can be related to competition among Big Men for power and prestige. On the face of it, this seems simple enough. However, when one considers the costs of warfare, it seems like a risky way of inflating a few egos. In the case of New Guinea, warfare can be viewed as secondary to the competition itself.

Lemonnier (1991:8-9) in his study among Big Men of Papua New Guinea noted that warfare is a competitive activity. The competing groups do not try to completely eradicate the other side, nor do they treat warfare as a game. Warfare is essential for perpetuating exchanges between groups (Lemonnier 1991:9), and Big Men exploit the chaos which ensues following battles. Warfare is followed by peace and large-scale ceremonial exchange. Foremost among these exchanges is the substitution of wealth items, such as pigs, for human lives, in a word—compensation. The principle of substitution of wealth items for human life represents a radical shift from the "eye for an eye" approach. It also permits Big Men to hedge against retaliation by their victims. These exchanges take place in a public forum, which allows a Big Man to aggrandize himself further by demonstrating not only his military prowess but his wealth as well.

These exchanges are not a surrogate for war (Lemmonier 1991:23). Rather, they satisfy the debt obligations incurred by warriors. In doing so, however, the principle of compensation, in the form of wealth for human life, becomes institutionalized. The Big Man sets himself up as the financier and organizer of ceremonial exchanges.

This example shows that competitive activities can lead to institutional social change and what appears to be the primary function of an activity, e.g., ballgames or deadly warfare, may actually be a pretext for wealth building activities and aggrandizement of leaders. This does not mean that Big Men engage in warfare in order to attract more followers; the risk is not worth the reward. Rather, it shows that aggrandizer behavior can lead to unforeseen risks as well as rewards. New Guinea Big Men could not have foreseen the benefits of warfare and compensation in terms of personal aggrandizement any more than the ancient Mokaya builders of the ballcourt could have foreseen ballcourts becoming an institution in Mesoamerica.

Many scholars have proposed that ballgames were surrogates for costly warfare between competing polities (Fox 1991:227-228; Taladoire and Colsenet 1991). While this may have indeed been the case in later Mesoamerican societies, it is more interesting to consider ballgames as a possible form of competition similar to warfare among New Guinea Big Men. Although any interpretation drawn from this analogy must be tentative, there is a strong link in Mesoamerican symbolism between militarism and the ballgame (Taladoire and Colsenet 1991:174). This association could have evolved as the power relations surrounding the ballgame were negotiated (Earle (1997) noted military power as one of three main sources of power). The competition between rival communities, in the form of ballgames, could have possessed formal and informal rules for compensation. If, as Schele and others (Freidel *et al.* 1993) have suggested, ballgames were contests of mortals against gods, then the game had the power of giving both life and death. Death would require compensation, the payment of which would require a formal ceremony, much like the New Guinea case. The heightened competition caused by the high stakes of ballgames would have provided aggrandizers with yet another avenue to enhance their status and attract more followers. As Hayden (1995:65-66) noted, funerals are one of many events requiring feasts. The funeral is often the instrument of debt itself, reaffirming the debts of the deceased incumbent upon the heirs. The New Guinea example shows that debt creation and perpetuation involve substitution of capital for human life. The larger point is that aggrandizers engage in high-stakes competitive activities that create even greater debts, and then formalize the repayment of those debts. These require (1) a forum, (2) capital, and (3) formal rules for reciprocity. In the Mazatán case, I hypothesize that ballcourts were the forum, natural abundance and human labor the capital, and competitive ballgames with formal rules the means of reciprocity.

Gambling

The New Guinea example shows that wealth capital can be substituted for the negative outcome of a competitive activity such as warfare. The opportunities for aggrandizement created by warfare, though not foreseen by New Guinea Big Men, were nonetheless exploited to full advantage. The common thread between ballgames and warfare is the unpredictability of the outcome. The New Guinea case involved compensation payments but ballgames are clearly of a different order. The unique aspect of the ballgames appears to have been capital waged on their outcome. Spanish clerics who witnessed ballgames among 16th century Aztecs noted that huge sums were often wagered on the outcomes. These wagers were not confined to the elite class; commoners were also observed wagering. Occasionally, wagers were made that exceeded the economic capital of the wagerer. In the Aztec case, formal rules tantamount to laws, provided for the payment of sums won or lost. Some unfortunate and zealous bettors paid for their losses with their freedom, confined to a lifetime of slavery for their new master.

The Mazatán case was probably less dramatic. Having said this, it is useful to look at gambling in egalitarian and non-egalitarian societies. The potential for the creation of debts is obvious. Less clear are the mechanisms whereby societies control such dangerous activity. Although few sources address this activity, a wide-variety of societies have been observed

to tolerate gambling. A few examples will help illustrate the power of gambling to affect social change.

South American Games

John Cooper (1949:506), in a summary article about games and gambling among South American Indians, noted that gambling was a common feature of ballgames, though he appears to have relied on the work of others in making this remark. He observed that in non-ball games in egalitarian societies, wagers were confined to items of value, not future labor or similar intangible resources (Cooper 1949:512). However, he notes that gambling on games introduced by Europeans possessed no such boundaries. Cooper (1949:512) implies that Europeans encouraged high-stakes wagering, especially in horse racing, cards and dice. Surprisingly, Cooper argues that gambling was virtually unknown prior to the arrival of Europeans. This, however, seems to contradict the strong evidence for a prior tradition of gambling among tribal societies in South America. Referring to ballgames in particular, Cooper (1949:514) acknowledges their Mesoamerican origin but notes that the games were not played in formal courts.

Cooper also mentions wagering on ballgames. He suggests that "they played not merely for the fun of the game but to win substantial stakes", the wagers consisting of "baskets of maize, strings of glass beads, and, when necessary, everything the players had in their houses" (Cooper 1949:514). This does not seem to be confined to the participants; spectators also engaged in wagering. Cooper's observations also indicate that gambling formed part of the mortuary ritual as well. In Peru and Bolivia, the playing of *taba*, a dice-like game played with an astragalus bone, was thought to help the deceased in their journey to the afterlife. The winner of the *taba* game was permitted a share of the deceased's property.

Finally, Cooper discusses a "hockey" game that is better described as a ballgame played with sticks. This game was also attended with gambling, especially among the *Mapuche-Huilliche*. Cooper adds that "sometimes serious affairs of public concern were decided by the outcome of a hockey game" (Cooper 1949:515). The veracity of this statement will not be doubted by the Canadian reader! A plate which accompanies Cooper's description is dated 1646 and clearly shows the stakes wagered, such as garments and buckets of food, suspended from a prominent nearby tree. He offers no further comment on what "serious affairs" were settled by the games.

Although Cooper provides sketchy data, it is apparent that gambling was an important part of ballgames and other similar games throughout a wide area and among diverse groups of people. This pattern also extends to North America. The South American example shows that the stakes associated with gambling were largely dependent on the game played, with ballgames having higher stakes than other games. The indigenous games were also in constant flux, as the power relations and the games themselves were transformed. It is interesting to note that contact with state societies increased the stakes wagered, a situation also reported in examples from other regions. In one case, contact with state societies strained the egalitarian ethos (due to accumulation of individual wealth and power through

gambling) to the point where the traditional hierarchies broke-down under the stress (Mitchell 1988:649-650).

North American Games

Ballgames were also widely-played in North America but generally not in formal ballcourts as were their Mesoamerican counterparts. Nevertheless, they offer examples of a wide-range of societies that engaged in wagering on the outcome of ballgames. Like the situation in South America, the data are spotty and imperfect. A discussion of ballgames among the Choctaw of the southeastern US begins this analysis.

In the latter part of the 19th century, the Choctaw were forcibly removed from their traditional homeland of northern Alabama and Mississippi. They were relocated to reservations in Arkansas and Oklahoma through a series of arduous, forced marches overseen by the US Army. While staying at the Choctaw agency, George Catlin, an amateur artist and most likely an army officer, made it a custom to observe every ballgame he could, sometimes traveling great distances to do so. The scale of these ballgames was enormous. "It is no uncommon occurrence for *six or eight hundred or a thousand* of these young men, to engage in a game of ball, with five or six times that number of spectators, of men, women, and children surrounding the ground, looking on" (Catlin 1953:290, italics mine). Even if these numbers were exaggerated, which they certainly were, the sheer number of players is staggering. Catlin notes that an equally large playing field was required. After remaining on the playing field all night watching ceremonies related to the ballgame, Catlin observed the erection of the goalposts, the preparation of the playing field, and the placing of bets, which he describes in the following passage:

> Each party had their goal made with two upright posts, about 25 feet high and six feet apart, set firm in the ground, with a pole across the top. These goals were about forty or fifty rods apart (200-250m); and at a point just half way between, was another small stake, driven down, where the ball was to be thrown up at the firing of a gun, to be struggled for by the players. All this preparation was made by some old men, who were, it seems, selected to be the judges of the play, who drew a line from one bye [goal] to the other; to which directly came from the woods, on both sides, a great concourse of women and old men, boys and girls, and dogs and horses, where bets were to be made on the play. The betting was all done across this line, and seemed to be chiefly left to the women, who seemed to have martialled [sic] out a little of everything that their houses and their fields possessed. Goods and chattels—knives—dresses—blankets—pots and kettles—dogs and horses, and guns; and all were placed in the possession of *stake-holders*, who sat by them, and watched them on the ground all night, preparatory to the play. (Catlin 1953:291-291, original emphasis)

As in the South American examples, wagers were placed prior to the game and held "in trust" by a third party until the game was completed. Catlin notes that shouts of encourage-

ment were offered by non-players, especially those who had goods at stake. Although he does not elaborate on the outcome of this wagering, the goods wagered must have been of substantial importance; the often violent determination of the players to score accentuates the nature of the stakes.

Stern (1950) in his comprehensive work *Rubber-Ball Games of the Americas,* reported that among the Acaxee of Nayarit, Mexico, large wagers were an integral part of the ballgame. The stakes rose even higher for intercommunity games, though still tended to be limited to personal property (Stern 1950:84). A challenge by one village could not be refused by another. A messenger was sent to collect the wagered articles, usually of equal value to those wagered by the challengers. Stern argues that a "consolation prize" was awarded to the losing team unless they were the host team. If the host team won, everyone dined on a luxurious feast. But if they lost, the hosts did not share their feast with the victors, who presumably had just made off with their possessions (Stern 1950:84).

Similar examples of wagering can be found in historic documents, especially those written by Spanish clerics during the conquest of Mexico. Diego Durán (1971) described professional gamblers among the Aztec; some even sold their children into slavery! Stern (1950:58) characterizes Aztec commoners as possessed by a "gambling mania." Among nobles, entire kingdoms were sometimes risked.

The above examples show that the stakes varied widely from region to region, game to game. The common thread between these accounts is the creation and perpetuation of debt within the institution of the ballgame. Curiously, other games do not seem to have generated the intense gambling and elaborate ritual typical of ballgames.

Status could be greatly enhanced, or lowered, through gambling. Among the Gros Ventre of Montana, gambling was used as a means of social mobility (Flannery and Cooper 1946:398). Most gambling was centered around a wheel game which required some skill and dexterity. Supporters of the opponents would often provide food for the spectators and boast of their ability to provide. The ethnographers record shows that social ambition could be crushed in a single bad day of gaming. For example, White Owl, an older man of great standing in the group, was challenged to a wheel game by a young upstart named Lame Bull. So confident was Lame Bull that he wagered all his possessions, including his lodge, and those of his wife as well. Lame Bull's relatives also wagered heavily on his behalf. The social stakes were even higher. A loss by White Owl could have meant his downfall; a win could make him even bigger in the eyes of his followers (Flannery and Cooper note that a loss by White Owl could have actually enhanced his prestige by virtue of his having lost to an opponent of rising status and prestige).

Lame Bull lost the wheel game and all his possessions. He was ridiculed by his family and followers. Although White Owl gained numerous possessions in the contest, more importantly, he kept the prestige he had acquired among his people. Lame Bull eventually tried to indebt White Owl by hosting feasts for him and giving him gifts. It took many years for Lame Bull to regain his status (Flannery and Cooper 1946:400-401).

The tying of status to gambling success also extended to inter-tribal games. Flannery and Cooper (1946:407) note that accomplished gamblers would be thought to possess a certain "gambling power" that helped elevate their status in the community. However, this power

was also considered potentially dangerous. One particularly successful Gros Ventre gambler was avoided because of his winning tradition (Flannery and Cooper 1946:408).

Inevitably, gambling also led to serious conflicts. The Gros Ventre solved the most extreme of these conflicts by fissioning from the main group, which they were free to do at any time (Flannery and Cooper 1946:411). Gambling stakes seemed to have been largest between rival bands. To prevent rivalries from destroying the social fabric, gambling was prohibited among ritual specialists and between certain kin relations (both fictive and sanguine). High-stakes gamblers were not favored to become ritual specialists, since their gambling power was thought to interfere in the execution of their duties.

Flannery and Cooper (1946:415) list the rules of gambling among numerous Plains groups. Two common themes emerge: (1) gambling was prohibited between close relatives and (2) gambling was encouraged and, in some cases, obligatory, between rival groups. Clearly, gambling provided an effective means of getting nearby villages or communities to interact with each other in a competitive way. The taboos against sanguine gambling channeled the gambling power toward rivals, thus assuring that victorious gamblers would not accumulate riches on the backs of their families. As one informant put it, gambling within the family would be "like winning [property] from yourself" (Flannery and Cooper 1946:414).

Mitchell (1988:643-644) observed that inter-village gambling stakes were the highest, while intra-village stakes were generally equalized among the Wape of New Guinea. He notes that "a man who wins heavily while playing the men of his own village is expected to play the next day to give the losers the chance to recoup their losses" (Mitchell 1988:643). Similarly, men from neighboring villages "literally lost their shirts...after losing their money, some of these men began betting their personal possessions such as flashlights, belts, and shirts, and lost these too" (Mitchell 1988:644-645). As Mitchell (1988:645) suggests, gambling is unique in that it can only circulate wealth which already exists and therefore operates outside the traditional exchange system. As such, it provides another avenue for young or poor aspirants to pursue additional wealth or prestige.

The concept of gambling power is another recurring theme among gambling narratives. Some narratives attest to help from deceased ancestors which brought success in gambling (Flaskerd 1961:92). Still others record using gambling as a means of dividing property of a deceased person (Beauchamp 1896:274). Gambling was so powerful it was thought to interfere or threaten other powers and therefore must be controlled. However, there are few studies which address the subject in any detail and for now any hypotheses must remain speculative. A relatively unexplored component of this line of thought is the psychology of gambling and its effects on prehistoric societies. Did gambling and the associated debts incurred intensify existing inequalities? Were inter-community rivalries heightened by high-stakes gambling? Did this kind of behavior lead to more permanent inequalities among sedentary peoples? The data reviewed here suggest that gambling was a fundamental element of all gaming, but ballgames in particular were the focus of heavy wagering. Among egalitarian societies, wagering possessed basic guidelines consistent with similar prohibitions against concentration of wealth in these types of societies. Such prohibitions might be grouped under the general heading of "egalitarian leveling mechanisms." But what happens

when these mechanisms can no longer operate, as appears to have been the case for the Mazatán region some 3,500 years ago?

As argued in Chapter 4, the Mazatán region was filling up with competing hunter-gatherer-fishers by at least the beginning of the Barra phase, in 1550 bc. A tradition of ballgames was the legacy of the Archaic period. These games were most likely played in open fields and involved inter-community play. The tensions associated with this settling-down process were numerous. The examples presented here suggest that gambling most likely accompanied the playing of ballgames. Although we have no direct archaeological evidence of gambling, numerous worked sherd disks, of unknown function, have been found in a variety of Early Formative deposits. At a minimum, gambling on the outcome of ballgames may have formed an alternative means to acquire property and create debts. Debt creation, as argued by Hayden (1995) and others, is a fundamental component of trans-egalitarian societies. Imbalances in debts must be redressed. Any gambling on games of chance and skill would have granted early Mokaya villagers with a way to create and cement competitive debt relationships. In addition, gambling might have provided a mechanism to diffuse many of the tensions associated with the settling down process. Future research needs to be directed toward examining the effects of gambling and gaming on small-scale sedentary communities.

Another aspect of both gaming and gambling is the instructional use of these activities. The participation of youth in these activities would help them internalize the rules of society and understand the penalties for transgression. The pedagogical uses of games have long been studied by anthropologists in their attempts to understand the role of games in social development (e.g., Cheska 1979, Sbrezsny 1976). These studies clearly show that play and games, together with gambling on the outcomes, are crucial elements in social development. For now, the instructional value of ballgames and gambling must remain an open-question. Given the material reviewed here, however, I conclude that such games must have been powerful influences on the development of social norms among the Early Formative Mokaya. Games and gambling must have presented formidable challenges to any egalitarian ethos. If, as some have proposed, the subversion of this ethos was an important step in the transition to complex society, then these activities may have been one means by which that step was accomplished in the Mazatán case. The formal ballcourt is the material link to this process.

The examples presented here demonstrate that gambling on ballgames and other games involving both skill and chance was widespread in the Americas. Gambling of personal property was common and, among more complex societies, the wagering of human labor or future considerations occurred. The potential for gambling to create debts is obvious. Less clear is the long-term effect of this activity on the general social fabric and the egalitarian ethos in particular. I argued that competitive games could have provided a mechanism to diffuse some of the tensions associated with the "settling down" process. These same games, however, may also have been the means of debt creation via gambling. Intercommunity rivalries were the strongest and may hold an important clue to the organizational principles of gambling in small-scale societies. Gambling was also used as means of raising (or lowering) status and prestige, as noted the Gros Ventre example. Finally, a completely under-researched aspect of gambling and competitive games is the effect of these activities

on a society as a whole. The stakes of each ballgame may have indeed been higher than previously imagined.

Monumental Architecture and Society

> While some egalitarian societies construct large, multi-family dwellings, men's houses, lineage shrines, and tribal forts, monumental architecture is generally present on a modest scale, if at all. (Trigger 1990:120)

Another way of approaching the question of the social organization of early Mokaya ballcourt builders is to examine the types of constructions undertaken by egalitarian and complex societies, respectively. The quote by Bruce Trigger above shows that scale is an essential element when considering the limits of egalitarian construction. Monumental architecture was recognized as one of the ten abstract criteria of civilization by Charles Redman (1978) in his study of Near East civilizations. In the previous chapter, using labor constants provided by Abrams (1994), I calculated that it would have taken a minimum of 473 person-days to build the initial Paso de la Amada ballcourt, or 22 people for working for 22 days. By no means is this calculation astronomical in terms of energy expenditure. On the other hand, neither is it a casual labor investment. Trigger, in his survey of monumental architecture worldwide, cites the *ahus* of Easter Island (see Kirch 1984) as the upper limit of monumental architecture for egalitarian societies. However, Trigger's characterization of the people who erected the Easter Island *ahus* and *moais* as an egalitarian society seems at odds with current views of Easter Island social and political organization. New perspectives suggest that Easter Island society was organized minimally at the chiefdom level by the beginning of *ahu* construction. The point is not trivial—the largest ahu is estimated at 23,000 cubic meters, almost 10 times the size of the ballcourt. The first *ahus* were much smaller in size. These smaller *ahus* do not really approach the scale of the ballcourt, though the monolith statutes that adorn these platforms are impressive. In fact, Kirch (1990:211) while discussing Tongan chiefdom formation on the island of Niuatoputapu, notes that the largest monumental construction has a volume of 2,519 cubic meters. The ballcourt, at 2,500 cubic meters, is therefore equal to the largest construction in a chiefly society, or at least as it is expressed on the island of Niuatoputapu. When viewed as a monumental construction, the ballcourt falls clearly outside the scope of those generally characteristic of egalitarian societies. This begs the question of exactly what kind of society undertakes the construction of facilities such as ballcourts?

A study by Michael Alder and Richard Wilshusen (1990) provides a partial answer to this question. They examined 28 cultures worldwide for the presence of monumental architecture using the Human Area Relations Files (HRAF) as a data base. Two main questions were addressed in their study: (1) how is population size connected to the appearance of "large-scale integrative facilities," and (2) what kinds of activities were associated with these facilities (Alder and Wilshusen 1990:132-133)? The results show that the presence of large-scale integrative facilities is closely related to community size. That is, large communities have large-scale facilities and smaller communities have smaller ones. While hardly a

revelation, Alder and Wilshusen found a qualitative difference between small-scale and large-scale integrative facilities. Their data showed that large-scale integrative facilities tended to be specialized for ritual uses and were used less often than smaller ones. Small facilities, on the other hand, were used daily for a wide variety of activities. They further noted that the presence of large-scale integrative facilities was closely associated with regional aggregation and a larger community size (Alder and Wilshusen 1990:143). Though they leave social and political organization as an open question, it is clear from their data that large-scale integrative facilities, such as ballcourts, are more likely to occur in larger, non-egalitarian communities. There are, of course, exceptions to this rule, for example, the great Kivas of the Southwest.

Thus, monumental architecture provides another useful corollary for evaluating societal complexity. As Trigger (1990:120) argued, an increase in size and scale of monumental constructions correlates with increased social stratification among the upper classes. But what is monumental to one society may seem diminutive to another. It all comes down to a question of relative scale. In the case of Paso de la Amada, the ballcourt is the largest known structure of the Early Formative sequence. The successive platforms at Mound 6, together with the superstructures, involved a greater cumulative labor investment than the ballcourt (especially if one includes the roof in the calculations). Two main points emerge from this discussion: (1) monumental architecture, proportional to scale, is strongly correlated with increasing complexity and (2) it involves significant labor investments and serves as a testament to the ability of their builders to control and amass labor (Trigger 1995:215). As noted in Chapter 2, the monumental aspect of the ballcourt would have served as a powerful ideological symbol, subject to manipulation by elites.

Another significant issue in complexity studies concerns the control of labor. Did people voluntarily surrender their labor to others? If so, what did they get in return? If not, were people coerced into contributing their labor? Of more immediate interest is the question of how did early Mokaya villagers build a substantial ballcourt?

Ballcourt Financing and Financiers

If one accepts the classification of the ballcourt as monumental architecture, then how was its construction organized and completed? As with all construction projects, this undertaking required extensive planning, procurement of resources, deployment of labor, and financing. The term financing is used here in a broad sense and could have included exchanges of goods, services, food, labor, and the like. For purposes of this discussion, I see two main possibilities: (1) the ballcourt construction was undertaken and financed by emerging elites, or (2) the ballcourt was an egalitarian project, and no single individual or lineage held claim to it. Subsumed under this second possibility are a wide variety of egalitarian-looking social organizations, including sodalities, factions, and even corporate groups, as discussed in Chapter 2. The archaeological patterns of many of these social formulations would be ambiguous, that is, they would look similar due to their lack of centralized hierarchy. There are, of course, an infinite number of other possibilities, but most

are variations of these two. Therefore, I focus on the broader binary division of egalitarian vs. non-egalitarian, while acknowledging the vast array of finer distinctions.

I envision that the construction of a ballcourt was a costly venture. I have tried to summarize the costs in terms of labor or energy expenditure and outline some of the managerial requirements of the project. In brief, the major costs may have included:

1. pre-construction planning,
2. site procurement and clearing,
3. labor organization, deployment, and management,
4. earth procurement and transport,
5. court construction,
6. dedicatory offering and ceremony feast.

To this point, a very conservative estimate of 473 person/days for the construction of the ballcourt was given. This was based on a formula derived by Abrams (1994) and only included earth procurement. His research shows that the average worker, using a digging stick and baskets to move earth, can excavate 2.6 m^3 of earth per day but only transport 1.9 m^3 per day (based on distances of <1km). To obtain an accurate estimate of the true costs of construction, we must factor in the additional steps listed above. When this is done, the costs rise considerably. Abrams' study shows that earth procurement and transport account for only 53 percent of project energy expenditure (Abrams 1994:67). Unfortunately, no reliable estimates are available for the additional costs of planning, site preparation, and actual court construction during prehistoric times. However, I will use Abrams' formula to approximate the basic costs of ballcourt construction. His formulae are listed in Table 5.1.

Table 5.1 Abrams (1994) Formulae for Construction Costs.

TASK	VOLUME/p-d (person days)
Earth Procurement	2.6 m^3 /p-d
Transport	1.9 m^3 /p-d
Construction	4.8 m^3 /p-d

Abrams' formula can be applied to the Mazatán data by taking the total volume of initial construction, dividing it by each of the constants listed in Table 5.1, and summing the resulting person days (p-d). This is accomplished as shown in Table 5.2. Note that I have included only the volume from the initial ballcourt in my calculations. The expansion of the ballcourt would have required a labor investment equal to that of the initial construction episode. If the ballcourt expansion was part of the same event (a possibility that cannot be ruled out with the current data), then the labor expendure would double and the costs would rise accordingly.

Table 5.2 Construction Costs for Paso de la Amada Ballcourt.

TASK	VOLUME	FORMULA	PERSON DAYS
Earth Procurement	1229 m^3 ,	2.6 m^3 /p-d	= 473
Transport	1229 m^3 ,	1.9 m^3 /p-d	= 646
Construction	1229 m^3 ,	4.8 m^3 /p-d	= 256
		TOTAL COST	**=1375**

These calculations result in a basic labor investment around 1375 person/days for construction of the ballcourt at Paso de la Amada. I assume that earth transport would be minimal but there's some evidence to suggest that the Mokaya builders had a preference for a yellow-brown clay that was transported from a distance. If so, digging and transport costs would be much higher . Transport costs are, of course, higher at greater distances. Also, it should be noted that I have omitted a number of costs for which I lack reliable estimates of time. Clark (1994:213-214) estimated that 983 to 2293 people lived within a 5km radius of Paso de la Amada. Without correcting for the demographic profile and using the lowest cost estimate, a substantial percentage of the workforce would need to devote at least three full days of labor in order to complete the ballcourt project. I arrive at this figure by using a two step calculation as shown in Table 5.3.

Table 5.3 Estimate of Available Labor at Paso de la Amada, Locona Phase.

STEP 1: Calculate Available Labor Pool				
	Avg. Pop. Size		Percentage of Pop. Available as Laborers	Total Number of Workers
	1638	X	25%	410
STEP 2: Calculate Labor Days per Person				
	# of Person Days	÷	Total Number of Workers	Total Labor Days per Person
	1375		410	**3.4 days/person**

Of course, coordinating the efforts of 410 workers be logistically difficult, and this does not take into account the costs of losing their labor normally devoted to other productive activities. An estimate of 50-100 workers would be far more manageable. In the case of 50 workers, it would take about 28 days to complete the ballcourt—a substantial investment of energy. My experience with managing the work force for excavating the ballcourt suggests

that even 50 workers is an unwieldy number. But such an estimate is not outside the managerial realm of possibility, especially for pre-industrialized societies. I have assumed, in all these calculations, that occupational specialists were not required to build the ballcourt.. However, some architectural features of the ballcourt, such as the benches, would have required special supervision. Molding boards were needed to keep the clay in place, and a specific kind of clay was chosen for the benches (this clay may have been combined with water and poured like concrete). The same is true for the lateral walls. In Chapter 4, I noted that there seemed to be a preference for yellow clay in the construction of these features. This preference alone would have necessitated management of fill procurement, transport, and deposition. Finally, the entire ballcourt seems to have been built to exacting numerical specifications, and therefore some ritual specialists would have been required to oversee the project. These specific measurements of the ballcourt merit a brief discussion here because they appear to transcend functional considerations.

A Note on Ballcourt Proportions

The long-standing association between celestial events and the ballgame in Mesoamerica was addressed in Chapter 3. This discussion suggested that ballgames may have been re-inactments of heavenly events or were played to ensure continuance of the ritual cycle. Looking in detail at the proportions of the Paso de la Amada ballcourt, its measurement of roughly 78 m x 30 m seems odd, especially given the proportions of later ballcourts. Initially, I thought these proportions were due to purely functional considerations resulting from the size and shape of the mound. Then, Ayax Moreno, artist in residence at the NWAF facilities in Chiapas, brought to my attention that the ballcourt may have been built to a human scale. He pointed out that the average height of an early Mokaya villager, or their arm span, would have been around 150 cm (5 feet tall). Taking this a step further, he divided the length of the ballcourt (78 m) by the average height of a person (1.5 m). The result was 52. Repeating this procedure for the ballcourt width (30 m) produced a result of 20. These numbers, 52 and 20, formed the basis of the Mesoamerican Calendar Round system! What makes this finding even more remarkable is that the Calendar Round system is not known to have been utilized until around 600 BC, when stone monuments with Long Count dates appear. If this is the case, then the proportions of the ballcourt take on a whole new meaning.

For some time it has been argued that the origins of the Mesoamerican calendar system would likely be found at a site along the 15th parallel North (Aveni 1980:148). This argument is based upon the periodicity of a certain solar phenomenon, known as the zenith passage days. These are the days where the sun passes directly overhead (i.e., perpendicular to the earth) at noon. This has the unusual effect of removing shadows for a few moments. These days are observed by modern Maya peoples with great reverence and are considered extremely dangerous days. This phenomenon occurs twice each year, but only between the tropics of Cancer and Capricorn. The exact date of this phenomenon depends on the latitude of the observer. Since Mazatán lies just south of the 15° North latitude, the sun passes directly overhead once in late April (on or around April 28) and again 105 days later in August (on or around Aug. 12). Curiously, August 12 is that date proposed as the zero or

origin date of the long count by the Goodman-Martínez-Thompson (GMT) correlation (the reason these dates are not exact has to do with the inaccuracies of our own calendar and not the periodicity of the phenomenon, which, for all intents and purposes, is a constant). The period between these dates is exactly 260 days, which is equal to the 260 day "almanac year" of the Mesoamerican calendar system. Initially, it was thought that the 260 day almanac year corresponded to the length of human gestation. However, the human gestation period averages around 264 days and, as many will attest, has considerable variation around that mean. I mentioned above that the human proportions of the ballcourt corresponded to 52 and 20, respectively. Together with a 365 day calendar year, we now have all the numbers needed to complete the Calendar Round system which I will explain below.

All Mesoamerican civilizations utilized a calendar that consisted of 20 named days with 13 numbers. Together these formed a 260 day calendar round or sacred almanac (13 x 20 = 260). This ritual calendar can be thought of as a wheel, which repeats itself each 260 days. But the length of the solar year is 365 days. When these two calendars are meshed, we find that only 52 days of the 260 ritual calendar could serve as the beginning date for the 365 day calendar. In order to discover how long it will be before a particular date repeats itself, we must get a least common multiple of 260 and 365. Both numbers are divisible by 5, leaving quotients of 52 and 73, respectively. To find the number of days until a particular day will be repeated, we take the product of the least common multiple, 5, and the two quotients, 52 and 73. The formula is simplified as follows: 5 x 52 x 73 = 18,980 days or 52 solar years until the Calendar Round is repeated.

The ballcourt measurements, coupled with the 260 day periodicity between zenith passages, indicate that Mokaya villagers understood the periodicity on which the calendar round was based. However, this is not evidence that they used the calendar round in all its specifics. The next earliest example of the Calendar Round appears on stone slabs at Monte Albán, Oaxaca (Caso 1965). These bas-relief glyphs date from the end of the Middle Formative onward and show that the Calendar Round was in use there. Thus, the basic periodicity of the calendar round predates its formal appearance on stone monuments in the Valley of Oaxaca and elsewhere. If this argument is correct, then the proportions of the ballcourt held a specific cultural meaning. This also increases the likelihood that ritual specialists were employed in the construction and dedication of the ballcourt.

Labor Organization and Transformation

Retuning to the discussion of labor organization, one easy way to mobilize labor on a large scale would be to organize it through existing lineage heads. At Paso de la Amada, we have mounting evidence that a chiefly lineage was based at Mound 6 by the beginning of the Locona phase. The proximity of this lineage to the ballcourt site is worth noting. The fact that this project was accomplished without any archaeologically visible organizational changes suggests that the transformation to lineage-based societies may have taken place at some time prior to Locona times. As previously noted, lineages and conical clans are typical of network strategists, as they permit elites to monopolize social relationships.

The calculations and data presented here permit some general observations. First, consideration of construction costs cast serious doubt on the idea that an egalitarian society built the ballcourt. The managerial imperatives (Wittfogel 1957) alone would entail a hierarchy or managerial elite to coordinate, plan, and organize construction as well as resolve conflicts. Managerial elites are not usually found in egalitarian societies. Second, even if the management problems were solved by the existing framework, the costs of such a project would have involved an accumulation and redistribution of wealth. In this scenario, the productive capacity of an egalitarian society would be stretched to its limits in order to support the redirection of labor toward construction and away from subsistence activities.

Arnold (1996b) in her comprehensive survey of labor organization among complex hunter-gatherers found that large construction projects were generally undertaken in societies with permanent institutionalized leadership (e.g., chiefdoms). However, Big Man societies also possess institutionalized leadership without hereditary inequality. Arnold notes that societies that generate surpluses consistently consume those same surpluses, including surpluses in excess labor. Again, it is a question of scale. She notes that transformations in labor organization are constantly occurring in hunter-gatherer societies. These transformations permit opportunities for leaders to create labor pools and appropriate that labor when required. Hayden (1995:67) concurs with this idea, adding that "the main goal of aggrandizers was to attract, control, and manipulate labor."

The exact mechanism of labor transformation seems less clear, though I envision that it could have occurred in a fashion similar to that described by Struna (1996) and outlined in Chpater 2. This transformation of labor may have occurred through the manipulation of sport and the playing of ballgames. Both Arnold (1996b) and Hayden (1995) cite debt creation, coupled with aggrandizer behavior, as the fundamental driving forces behind labor transformations. Hayden (1995:69) suggests the costs associated with the promotion of self-interest prevent many transegalitarian communities from instituting more permanent hierarchies. In this sense, the ballcourt at Paso de la Amada can be viewed as a statement of wealth and, if so, reflects the social structure which created it. Taking this idea one step further, it suggests that egalitarian societies do not normally possess the resources, either managerial or financial, to undertake and complete a project of this magnitude. As Earle (1997:156-157) observes: "Monumental constructions require leadership, coordination, and finance. They are inherently expensive with regard to group resources, requiring many people to work together for long hours. *Monumental construction is not found in egalitarian societies*" (emphasis mine). He adds, "because of scale, monuments are clearly one of the most remarkable expressions of social power."

Earlier I hypothesized that the ballcourt at Paso de la Amada was part of a network of similar courts in the Mazatán region, a position consistent with the network strategy outlined by Blanton *et al.* (1996). The basis for this hypothesis came from the observed pattern of later Mesoamerican ballcourts coupled with the inherent competitive aspect of the ballgame. Only future excavations can validate this hypothesis. However, if this hypothesis is correct, we would have to include the costs of ballcourt construction for other communities within the region in our calculations of monumental construction. When these costs are factored in, the construction of ballcourt is more than just a "one-time investment". It represents a

commitment to future financing and, as such, implies an ongoing need to maintain a labor pool. Retention of labor, especially for construction projects, appears to be the exclusive domain of complex societies. I offer these as general observations—logic dictates that one cannot confirm one hypothesis by disproving another. Both ideas must be tested. I have reviewed the evidence in such a way in order to make a strong case that the builders of the ballcourt were a complex society.

Chapter Summary

In this chapter, I have (1) explored some possibilities for the origin and spread of ballcourts, (2) discussed the kinds of activities associated with ballcourts and ballgames, (3) examined the role of competitive activities and their effects on society, (4) itemized the costs of ballcourt construction, and (5) explored the relationship between labor organization and complexity. The evidence and examples presented suggest that the construction of monumental architecture requires a sophisticated level of social organization, namely, a complex society. This conclusion implies that not only was a complex society responsible for its construction but that *a complex society must have been present by at least the beginning of the Locona phase.*

This conclusion has several other important implications which I will briefly mention here. At the outset of this chapter, I reiterated the feasting pattern observed by Lesure (1995), which involved widespread feasting from the Locona through to the Cherla phases. A change in ceramic patterns from the Barra to Locona times is coeval with the construction of the ballcourt. This pattern corresponds exactly to the life-history of the ballcourt presented in Chapter 4. Thus, feasting appears to be intimately linked with the construction and use of the ballcourt. The importance of feasting in the creation and maintenance of debt relationships should be underscored here.

I presented a number of examples on the effects of games and gambling on society. Gambling can be a threat or a benefit to society. In particular, it can present a threat to the egalitarian ethos due to the wealth inequities it can create. Flannery and Marcus (1993:263) noted that subversion of the egalitarian ethos was a significant hurtle in the transition to complex society. The examples showed that gambling is often seen as a powerful agent of social change, sometimes even as a dangerous force itself. More importantly, gambling was presented as an alternative and effective means of acquiring social prestige and not just personal property. Gambling appears to have accompanied almost all games throughout the Americas. Ballgames, in particular, were the focus of large wagering. I suggested that gambling was practiced among the Early Formative Mokaya and could have functioned in ways similar to the cases presented here. It may also have been a significant instrument for debt creation and an important component of social change in aggrandizer societies.

Gambling, besides generating debts that must be repaid, accentuates the element of competition and conflict present in both egalitarian and complex societies. Competition takes many forms but is often diffused through rituals such as games. I noted earlier that this is not exactly surrogacy, where the ritual replaces another form of competition, such as deadly warfare. In this sense, the competition itself is the issue in focus. Competition, in its

ritualized form, is a common feature of both egalitarian and complex societies. The effects of gambling on egalitarian societies, in particular, remain an understudied aspect of the transition to complex society.

Another line of evidence considered was the possible costs of ballcourt construction. I calculated that the costs of ballcourt construction were high, especially given the proportion of resources that must have been allocated to this project. The scale of the mobilization and management of the required labor is usually not found in egalitarian societies. Examples were presented to support this claim, noting that monumental architecture is consistently noted as one of the hallmarks of complex society.

In Chapter 2, I briefly reviewed some salient models for the emergence of complexity. I was critical of what can be termed *prime mover* models because of their reliance on a single causal element in the emergence of complexity. Additionally, it was argued that such models actually obscure the process itself, by reducing it to a single variable. All prime mover explanations are devoid of human agency. The emergence of complexity, one of the most important events in human history, becomes an inevitable process in these models. In effect, these models take the people out of history.

The search for more robust models has led to the development of a number of new ones that incorporate human agency. Agents are typically seen as aggrandizers, competing within communities and regions for power and prestige. These models are predicated on the assumption that aggrandizer behavior is a constant among all societies. Aggrandizers usually enhance their prestige through competitive displays of wealth, though there are numerous strategies they may pursue (Blanton *et al.* 1996; Earle 1997). In the process, they create debt alliances, thus insuring the perpetuation of the debt cycle. Feasts are the focal point of these competitive displays.

Thus far, models of emerging complexity have overlooked an important manifestation of competition—ballgames. The archaeological case presented here satisfies the requirements of aggrandizer models but presents a new twist, namely, the construction of a formal ballcourt. The Paso de la Amada ballcourt arguably created a number of new opportunities for its builders, among them the subversion of an egalitarian ethos in order to accumulate and pass on wealth (and prestige) to heirs. Such a large-scale construction project required management on a scale not seen in egalitarian societies. Accordingly, I argued that elites were the sponsors of ballcourt construction and, as such, enjoyed the benefits of other's labor. However, it was noted that sponsorship occurred at multiple levels and that aggrandizers were not the only beneficiaries of the ballcourt. The community itself could have enhanced its position through the construction of a ballcourt. As well, the ballgame itself could have been used to structure and transform labor both present and future.

The data presented here suggest that ballgames (and wagering) were important variables in the transition to complex society. These variables have not been considered in current models of the emergence of complex society. Additionally, the construction of formal ballcourts, or similar monumental architecture, is seen as a compelling sign for the presence of a complex society. This does not mean that ballgames are the engine of social change. Rather, they must be considered in conjunction with other factors, such as sedentism, excess production, and increased population density. Ballcourts, on the other hand, represent a

different order of evidence. As monumental architecture, they perdure time and leave a legacy for future generations. They provide clues about the nature of the social arrangement required for their construction. They also would have created new opportunities for their builders to acquire wealth and prestige—opportunities that will be considered in the coming chapter.

CHAPTER VI

IMPLICATIONS FOR UNDERSTANDING COMPLEXITY

> The competitive [ball] game thus exhibits considerable stability in form over nearly fifty degrees of latitude, yet it can be said to be congruent with only a few societal features: namely, with agricultural communities possessing a moderate degree of political integration, in which it serves as a sport, as well as a vehicle whereby youths may demonstrate their prowess and warriors maintain bellicose values even in times of peace. These are the general features that must have had weight in the adoption or rejection of the game. In addition, other local circumstances, such as tribal prestige and ceremonial linkage must may have been operative on occasion. (Stern 1950:97)

Theodore Stern nicely summarizes in the epigraph the case for ballgames having a significant role in the transition to complex society. He made this observation after examining ballgames from dozens of societies throughout North and South America. Stern's (1950) original idea was that the distribution of early ballcourts should correspond to the natural distribution of rubber trees. Almost fifty years later, the discovery of the ballcourt at Paso de la Amada appears to confirm Stern's hypothesis.

The primary objective of this dissertation has been to explore the relationship between ballcourts, competitive games, and the emergence of complex society. I have argued that ballcourt construction was inexorably linked with the presence of a complex society, at least in Mesoamerica. A review of the evidence shows that ballcourts are one of the defining features of all later complex societies. The discovery of a ballcourt at Paso de la Amada indicates that ballcourts were an important element in the initial transition to complex society itself. The presence of ballcourts so early in the process of emerging complexity has significant implications for modeling this process. In this chapter I will summarize the findings of this dissertation, discuss their implications, and suggest directions for future inquiry.

Dissertation Summary

The unexpected discovery of a ballcourt at the site of Paso de la Amada added a new dimension to complexity studies. I began this dissertation with the assertion that ballcourts were important components of later Mesoamerican societies, forming an integral part of the

archaeological landscape from the Late Formative to the Spanish Conquest. With the Paso de la Amada ballcourt, we now know that the first ballcourts were constructed around 1400 bc, some 500 years earlier than previously thought. The construction of a formal ballcourt was presented as an outgrowth of the popularity of the Mesoamerican ballgame, of which many variants were played from late Archaic times and perhaps earlier. I presented evidence from other parts of Mesoamerica to support this claim.

The Mesoamerican ballgame and ballcourts have received much scholastic inquiry over the past century. Most of this research was focused on one of three main themes: ethnohistory, iconography, and typology. I presented a brief review of each of these approaches. The recent work of Fox (1994) has shown that these foci have hampered our understanding by not approaching ballcourts as "lived spaces." Fox argued that ballcourts were multipurpose facilities of social integration where a variety of ritual activities took place. I agree with Fox, and would add that no one has yet examined the role ballcourts and competitive games played in the emergence of complex society.

Why did the first known ballcourt appear at Paso de la Amada? I contend that the appearance of this ballcourt in one of Mesoamerica's earliest villages was more than a mere coincidence. Paso de la Amada is thought to have been an Early Formative chiefdom by Clark and Blake (1994). Their model for the emergence of hereditary inequality relied on agency theory in order to explain this phenomenon. Agency theories draw our attention to specific historical events that are visible archaeologically, for example, the construction of a ballcourt or a large residence. I argue that the construction of the ballcourt required sponsorship as well as management and suggested that a project of this magnitude was most likely undertaken by members of a complex society.

This led me to consider models for the development of social and political inequality. Most extant models addressing this process search for monocausal or "prime mover" causes of inequality. I disagree with this approach; I doubt that there are universal causes of hereditary inequality. The utility of these models, however, lies in fact that they identify a basic set of conditions that existed in societies undergoing this transformation. These general prerequisites included sedentism, agriculture or some form of excess production, and increasing population density. The early archaeological test case considered here satisfies these conditions. Actor-centered models were explored as alternatives to prime mover approaches. A number of these models center on aggrandizers as the principal agents of social change (though not the only variable in the process). Over time, constant competition among aggrandizers results in systemic changes and fosters inequality. However, the egalitarian ethic and ethos remain strong, even among complex societies. Competitive games were presented as one means by which aggrandizers could preserve an egalitarian ethic, in the form of contests between equals, while simultaneously accumulating disproportionate amounts of wealth and prestige. This process is not teleological; individual aggrandizers do not set out to bring about systemic change to the structure of society. Rather, the emergence of complex society is a cumulative process. Ballcourts were a way of institutionalizing competition and providing aggrandizers with a permanent means of passing on their legacy to future generations.

In Chapter 4, I described the Mazatán region and outlined the archaeological test case. By the beginning of the Early Formative period, a people known as the Mokaya were settled in permanent villages and smaller hamlets throughout the Mazatán region of coastal Chiapas, Mexico. They began to produce sophisticated pottery which had no local antecedents. Clark and Gosser (1995) argued that the adoption of ceramics by the Mokaya was indicative of elite emulation, a process whereby pre-elite aggrandizers sponsor individual artisans to travel long distance in order to master a new technology. This entailed a network of interacting elites, such as a simple chiefdom. The new technology was then brought to the home region where it was used to aggrandize its sponsor. The first glimmer of elite sponsorship, in the form of ceramic production, occurred during the Barra phase, 1550-1400 bc. Unlike other parts of the world, where the emergence of complexity was strongly linked with the advent of agriculture, it appears to have played a minor role in the process in the Mazatán case. Instead, agriculture supplemented the bounty extracted from the natural environment in this tropical paradise.

There is mounting evidence of status differences among the Mokaya by the Locona phase. Lesure (1995) found that feasting was widespread at Paso de la Amada from Locona to Cherla times. Blake and his colleagues (1990) discovered a large, elevated residence, which dates to the early Locona phase (around 1400 bc), thought to have been constructed by an emerging elite lineage. Evidence of feasting and public ritual have been found in and around this structure. Further excavation has shown that platform architecture was widespread throughout the region, marking other high-status residences. A four-tier settlement hierarchy was inferred for a regional site survey by Clark (1994). This indicates that the region was reorganizing, both socially and politically during the early Locona phase. It was during these transformations that the earliest formal ballcourt was constructed.

Following the initial construction, the ballcourt was expanded to almost twice its original size. This expansion occurred sometime during the Locona phase. This gave the ballcourt the unusual dimensions of 78 m long by 30 m wide. If these dimensions are divided by the average height of an ancient Mokaya villager (1.5 m), the resulting numbers, 52 and 20, were calendrically significant numbers for the Mesoamerican Calendar Round. If this assertion is correct, then the ballcourt expansion corresponds to the first known use of the these calendric proportions in Mesoamerica. I presented evidence from elsewhere in Mesoamerica that showed that the basic numeric elements of the Calendar Round preceded the appearance of the Long Count. The ballcourt proportions, therefore, represented a deliberate attempt to map the cosmos on to the archaeological landscape. In addition, it was noted that Paso de la Amada is located on a 260 day periodicity between zenith passage days. This suggests a number of possibilities. If the advent of the ritual calendar and ballcourt occurred in tandem, then ballcourts *were* indeed the "courts of creation." If, on the other hand, calendric science may have preceded ballcourt construction, then the ballcourt proportions may represented a way of legitimizing the institutionalization of the ballgame in the form of a ballcourt.

In Chapter 5, several possibilities for the origin and spread of ballcourts were discussed. Analogs to the Mazatán case may be found in Late Formative Honduras, Nakbe, and the pan-regional culture known as the Olmec. The idea of elite emulation was integral to this discussion. Additionally, I suggested that ballcourts as an "idea" may have spread in much

the same fashion as other technological innovations. Ballcourts thus became part of a suite of innovations which were reproduced by later Mesoamerican societies for millennia. The basic design set out in the Paso de la Amada court was preserved with few modifications until the Spanish Conquest.

Ballcourts were not just venues for ballgames. They also functioned as a forum for community-based rituals and feasts. Fox (1994) found widespread evidence for feasting in his study of Late Formative ballcourts in Honduras. Feasting, it was argued, was an important element in alliance building and debt creation. The model by Hayden (1995), which considers feasting a key element in the transition to complex society, was reviewed. The ballcourt, it was reasoned, was also a place in which feasting could have been institutionalized.

The role of competitive activities was discussed with respect to their potential for fomenting social change. Several examples were presented which showed that gambling is used by aggrandizers in both egalitarian and complex societies as an alternative means of acquiring prestige and wealth. Competitive games thus served as a pretext for wealth building. Games may mask the inequalities they produce or may hide intra-societal differences (Kelly 1998). That is, success in gaming is often seen as a legitimate means of accumulating wealth and status. Levi-Strauss (1966) observed that competitive games divide people into winners and losers where no previous inequalities existed. In addition, competitive games are also important components in the perpetuation of the debt relationships. Ballgames, it was noted, were the subject of large wagering in later Meso-american societies. Consequently, I suggested that gambling and similar competitive activities may have threatened the egalitarian ethos of earlier, simpler societies. Gambling in sedentary societies was an easily-overlooked instrument of social change.

The costs of ballcourt construction were tallied. The total labor investment indicates this was not a casual undertaking. More than 2300 cubic meters of earth weighing over 3,300 tons were carefully placed in the construction of the initial and expanded ballcourts. I looked for examples of this scale of construction among societies worldwide. I expected to find numerous examples of egalitarian societies that engaged in monumental construction projects. However, this exercise demonstrated that, in general, only complex societies, organized minimally at the chiefdom level, constructed architecture of this magnitude. As a result, I concluded that members of a complex society probably constructed the ballcourt at Paso de la Amada. As a logical extension of this conjecture, I also suggested that a complex society may have been present in the Mazatán region by at least 1400 bc or the beginning of the Locona phase.

Finally, I explored the relationship between labor organization and complexity. Arnold's (1996b) comprehensive study found that large construction projects were generally undertaken in societies with permanent institutionalized leadership. The ballcourt, being one such project, required a great degree of planning, financing, and management of labor in order to reach completion. Some scholars even go as far as to say that monumental architecture is never found in egalitarian societies (Earle 1997), though clearly there are exceptions to this rule, such as kivas. I argue that the ballcourt also required continued financing and maintenance. Even if an egalitarian society cooperated to achieve the initial

construction, they would have had to continue that cooperation for decades or centuries in order to keep the ballcourt operational.

Multiple Pathways to Hereditary Inequality

The data presented here have important implications for modeling the process of hereditary inequality. Foremost among them is the role that competitive games may have played in the process. Several of the models considered were centered around the concept of competitive interaction among aggrandizers. However, none of these models specifically considered the potential competitive games have to create permanent inequalities. Since I have already discussed the Mazatán case, here I will focus on its broader implications for models of complexity. In order to enrich this discussion, a review of the basic aims of complexity models is warranted.

All models of the emergence of complex society seek to explain the process in general evolutionary terms. Most models take as a given that societies tend toward increasingly more complex arrangements. Explanations differ as to what drives this social change. Some models look for a single while others suggest multiple factors. Still others suggest a functional approach, where hierarchies emerge to solve social problems. But this implies that an entire society or region foresaw the benefits of the new social arrangement and agreed upon the means for its resolution. Clearly, the process differed widely in space and time. When discussed in evolutionary terms, there is a tendency to view societal evolution as a ladder-like progression from band to tribe to chiefdom to state. However, many examples can be adduced to counter this view. The introduction of human agents into the process accommodates historical events and the different pathways to complexity. This avoids the problem of searching for chiefdoms or tribes in the archaeological record. It also focuses the problem on the search for specific events which may have facilitated social change. As Feinman (1995:262) observed, "viable explanations of change must ultimately unravel the interplay between human strategies and socio-environmental opportunities and stresses. They must also recognize the historical nature of these social transitions."

The key to complexity models seems to lie in their ability to explain a particular trajectory of social change. This is what Feinman means by a "viable explanation of change." I would take this a step further to ask what specific pathway is being modeled. In a very general sense, all pathways lead to some more complex arrangement than the previous one. One fruitful avenue of pursuit is the concept of multiple pathways to complexity. In this view, there are many paths to complexity, each dependent on a particular historical trajectory. However, merely defining the pathway does little to further our understanding of the process other than enriching our knowledge of history. The elements of the process are more enlightening. What kinds of social and political relationships characterized the case in question? What were the key variables of the chosen pathway to complexity? What strategies were pursued? What were the particular social arrangements which were formulated along the way? What was the outcome of these choices?

The models reviewed in this dissertation show that significant advances have been made since the initial typologies of Service and Fried. Scholars have made great strides in defining

a number of the requisite conditions of social change, such as sedentism, agricultural production, and increasing population density. The concept of egalitarian society has also been challenged and redefined. Geographic and historical considerations have been taken into account. People have been put back into the models by the incorporation of human agency. The behavior and psychological tendencies of these individuals has appeared in more recent paradigms.

What implications do the data presented have for models of complexity? I argued that competitive games were more than just another form of competition because they possessed the unique ability to mask the inequalities they created. From the perspective of modeling, competitive games have not been taken into account by current models. In addition, I cited examples where wealth and prestige were accumulated through victory in games and gambling. Some of these examples came from egalitarian societies where imbalances in the wealth and prestige could be redressed by fissioning or could be repaid during future games. All of these societies recognized the potential power of competitive games.

Games also provided opportunities for intercommunity social interaction and hence widened the audience (and potential followers) for emerging elites. Getting communities interacting in a competitive way both naturalized and masked the inherent violation of the egalitarian ethos (Kelly 1998). From this perspective, the building of a ballcourt can be seen as a way of enshrining or legitimizing the ballgame as an institution.

The data reviewed here suggest that those interested in modeling the process of emerging complexity should look for (1) the genesis and perpetuation of formal competitive games followed by (2) the institutionalization of the games themselves via monumental architecture. In the case presented here, I established that a strong tradition of ballplaying was widespread in Mesoamerica by the late Archaic times. By the beginning of the Early Formative period, the ballgame itself was institutionalized in the form of a ballcourt. This had the effect of accelerating developing inequalities and provided a permanent venue for the game itself. Shortly after the game was formalized in ballcourts, it was endowed with a deeper meaning. There is considerable evidence from later Mesoamerican societies that ballgames were a re-enactment of creation itself, a form of communion with the gods. Ballcourts were the sacred locales where this communion took place (Freidel *et al.* 1993).

Thus, the significance of the Mazatán test case for the modeling process is twofold: First, competitive games exist in all egalitarian societies but represent potential threats to the egalitarian structure. As such, they have the potential to create imbalances as well as being effective vehicles for acquiring power and prestige. As competitive games are a universal feature of societies in the Americas, they likely existed worldwide and exerted the similar effects in different contexts. The second implication is that the institutionalization of a game in the form of architecture signals a fundamental reorganization of a society. More often than not, this event will take place in concert with other signals of inequality. The construction of large-scale facilities dedicated to gaming provides *de facto* evidence of complexity. These amendments do not mean that current models are wrong or flawed in their axioms and assumptions. Rather, competitive gaming leaves tangible archaeological evidence which should be considered when modeling the process. These corollaries, of course, must be considered in light of other factors that signal emerging complexity.

Conclusions Based on the Archaeological Test Case

Having considered the general implications for modeling complexity, I return to consider the same issues for Mesoamerica. Over the past few decades, Mesoamericanists have begun to look to Early Formative societies for evidence of emerging complexity. Much of this comes from the recognition that the sophisticated cultures of the Middle Formative, most notably the La Venta Olmec, had antecedents in the Early Formative. However, only a few areas of Mesoamerica possessed the archaeological data necessary to tackle this problem, namely the Soconusco, the Gulf Coast, the Valley of Oaxaca, and the Basin of Mexico. Each of these regions has its own problems in terms of quality of archaeological data. But when synthesized, these data indicate that a general trajectory of increasing social and political inequality can be seen in each of these four regions. We now know that the social formulations and religious beliefs of these early societies became the template for later generations of Mesoamericans. With few exceptions, this "Mesoamerican substrate," or the basic social and religious template, was set out by the end of the Early Formative period.

For the better part of the last century, the Mesoamerican ballgame has fascinated archaeologists as one part of the Mesoamerican substrate. The archaeological manifestation of this ballgame was the ballcourt, which conformed to a standard design with few modifications for more than three millennia. The origins of the ballgame were thought to date to the Middle Formative period. However, a growing body of evidence suggested that this assessment is incorrect. The presence of rubber balls, figurines, and other ballplayer paraphernalia found in Early Formative deposits confirmed the antiquity of the ballgame. But an early ballcourt lay still undiscovered, leaving hypotheses that ballcourts were part of the initial package with only indirect support.

The discovery of the ballcourt at Paso de la Amada suggests that all the elements of the Mesoamerican substrate had their roots in the Early Formative. Moreover, there are substantial implications for modeling social relationships of the Early Formative Mazatán region and in other parts of Mesoamerica. Based on the data presented here, I concluded that the construction of ballcourts was undertaken exclusively by complex societies, largely because ballcourts are a form of monumental architecture. The social formulation required to undertake and complete this project was, I argued based on managerial imperatives, minimally a chiefdom. This conclusion supports the claims made by Clark (1994) for the social organization of the Mazatán region during the Locona phase. This finding also sheds some light on some of the ambiguity of the data collected by Lesure (1995). The shifts in social organization he inferred from the ceramic data may actually reflect social processes related to the centering of community ritual at the ballcourt and away from individual households.

Considering regional interaction and based upon a strong pattern observed in later Mesoamerican societies, I proposed that the ballcourt at Paso de la Amada must have been part of a network of similar courts. This network developed during the early Locona phase and spread throughout the Mazatán region. Other courts may lie buried at Paso de la Amada and other sites in the region. This network would have permitted individual aggrandizers to

enhance their power and prestige through the sponsorship of ballgames and ballcourt construction, as well as feasts associated with these events.

The Mokayan fortunes were, by the late Locona phase, tied to the success of the new network of ballcourts. The expansion of the ballcourt was calculated to reproduce the basic elements of the Mesoamerican calendar round. I speculated this was an attempt to sanctify the ballcourt, either to make it conform to existing religious beliefs or to endow it with sacred proportions. We know the elements of the calendar round became part of the Mesoamerican substrate, but later ballcourts do not conform to these ratios. However, most architectural layouts, especially those of urban centers, do conform to these ratios (Mora-Echeverría 1984). Whatever the scenario, the expanded ballcourt must have taken on new meaning for the community based at Paso de la Amada. It also represents the first known attempt to map the cosmos onto the landscape in Mesoamerica.

I also argue that the expansion of the ballcourt may have been an attempt by Paso de la Amada elites to enhance their regional position, consistent with a network-based strategy (Blanton *et al.* 1996). By the end of the Locona phase, the Mokaya were part of larger interaction sphere that included the other Early Formative regions of Mesoamerica. Olmec culture grew out of this interaction which suggests that the Olmec were competing with the Mokaya at this time. It seems a logical assumption that these interactions included ballgames played in formal ballcourts.

In later times, the ballgame was confined to formal ballcourts which had their own architectural template. This template cemented the rules for interaction and likely standardized the rituals associated with them. Social and political mobility was generally tied to success in the ballgame as well as the ability to muster the necessary resources to construct a ballcourt. This new standard of interaction must have limited the candidates for high status positions. The social formulation which produced these achievements is less clear. Corporate groups could have initially vied for prestige only to be replaced by individual lineage heads. The data have not yet been recovered to test this idea but they are crucial to evaluating the theoretical positions taken by Earle (1997) and Blanton *et al.* (1996).

In sum, the construction of a formal ballcourt generated new rules for regional interaction. It also introduced one of the main elements of the Mesoamerican substrate which was reproduced by later Mesoamerican societies. Ballcourt construction permitted the validation of competitive interaction and legitimized the accumulation of wealth and prestige associated with the ballgame. This form of interaction was so successful that it was immediately copied by other communities both locally and regionally. Evidence of this network is yet to be uncovered, but later Mesoamerican history mitigates strongly in favor of this explanation.

Ballgames and Ballcourts in the Transition to Complex Society

In retrospect, it makes perfect sense that early Paso de la Amada had a ballcourt. As Stern (1950) observed, the distribution of rubber ball games in the Americas corresponded with the natural distribution of rubber trees. The best source of rubber was the *Castilla elastica* tree, a species whose distribution was confined to lowland Mesoamerica. Ballplayer

figurines from the El Opeño site, rubber balls from El Manatí, and stone portraits of leaders wearing ballplayer gear from San Lorenzo, suggests that the ballgame was pan-Mesoamerican by the Early Formative period. The three earliest-known examples of formal ballcourts come from Middle Formative sites in Chiapas. Ballcourts were an integral component of the archaeological landscape throughout Mesoamerican from the Late Formative onward. Therefore, if one were to set out to find the earliest ballcourt in Mesoamerica, it would be prudent to look in an early village with signs of differentiating inequality—Paso de la Amada.

As hindsight is nearly always perfect, I would have known where to look had finding early ballcourts been my original research objective at Paso de la Amada (aside from the obvious aspect that the mound I was investigating was a Lucky "7"!). I've chronicled the story of the accidental discovery of the ballcourt while searching for remains of early residences at Mound 7. This led me to consider the role that ballcourts may have played in the transition to complex society. I suggested that the construction of a ballcourt created an important ritual space for the community. Coupled with the competitive aspect of the ballgame, I argued that the ballcourt presented early Mokaya aggrandizers with a unique opportunity to enhance their prestige and even build wealth. By way of conclusion, I wish to outline a possible scenario to explain the construction of the ballcourt at Paso de la Amada during the early Locona phase.

By the end of the Barra phase, I propose that a network of competing groups of aggrandizers, resembling simple chiefdoms, was present in the Mazatán region. A developing settlement hierarchy, the introduction of new and innovative technologies, and long distance exchange support this assertion. Paso de la Amada was rapidly growing to become a regional center. During the Barra-Locona transition, the region was reorganizing to accommodate the influx of immigrants and indigenous growth. This reorganization was most visible in architecture but was reflected in other categories of material culture as well (Clark 1994). Status differences began to be marked in architecture, with higher status residences occupying elevated platforms. These residences were also larger than their predecessors. The largest and most prominent of these was Structure 4 at Mound 6, believed to have been an elite residence (Blake 1991). Feasting was probably a common activity at the site, though identification of specific sponsors has proven difficult using ceramic analysis (Lesure 1995).

At the same time the elite residence was built, a ballcourt was constructed at Mound 7. This court grew out of a long tradition of ballplaying throughout Mesoamerica. The physical dimensions of the court suggest its builders endowed it with multiple meanings. Most likely, the ballcourt design and form were guided by long-held religious beliefs, though we only have glimpses of what these were. Whatever the case, the ballcourt created new opportunities for the builders. Among these was a means of acquiring wealth and prestige while conforming to an egalitarian ethic. The sponsors of the ballcourt were able to enshrine their social power via the construction of the ballcourt. In the process, they were creating debts and obligations among their competitors. Perhaps, as Clark and Blake (1994) argued, the goal of competitive behavior of this kind was to attract more followers. In this respect, the

ballcourt provided its builders with a highly effective means of attracting people to the site and the region.

The project of constructing the ballcourt may have taken many months to complete, though I estimated that 22 people could have completed the initial ballcourt in 22 days. It must have been a spectacular event, with hundreds of people contributing labor to the project. Upon completion, a huge feast and dedication were required. Payment for laborers was remitted at this time, with the entire community witnessing the exchange of goods for labor. Modern society is devoid of these kinds of experiences, but in a small community 3,400 years ago this event must have made a lasting impression among its participants. The dedication culminated in the playing of ballgames, which were contests of strength, chance, and strategy. The ballcourt had become the new focal point of the community.

Sometime after its initial construction, the ballcourt was expanded to over twice its original volume. However, fill was not equally distributed in this expanded version. The new dimensions, in human terms, were equal to 52 by 20 units of measure. The correspondence of these measurements to the numerology of the Mesoamerican calendar was intentional. Coupled with the 260 day periodicity of zenith passage, the modification of the ballcourt's dimensions clearly was designed to conform to a particular world view. This made the court a sacred place, if it was not one already. The expanded court also permitted a new chief or other elite to put his mark on a community landmark.

By the end of the Locona phase, Paso de la Amada likely possessed more than one ballcourt, and perhaps more were constructed at other sites in the region. This hypothesis must be tested with future excavations and survey. However, data from later Mesoamerican societies show that ballcourts were always part of a network. The competitive nature of the ballgame also mitigates in favor of this idea.

By the Ocós phase, the ballcourt at Paso de la Amada had begun to fall into disuse, and the space dedicated to the ballcourt does not appear to have been reoccupied. This sudden abandonment correlates with the rise of another regional center, Aquiles Serdán. In regional terms, the beginning of the San Lorenzo Olmec marks a permanent end to the ballcourt at Paso de la Amada. Cherla phase midden was deposited atop of the infilled ballcourt and serves as a good chronological marker for the court's final abandonment.

The fact that the ballcourt was never reoccupied during the Early Formative suggests that the ritual space dedicated to it was sacred. As the largest mound at the site, it would have been under occupational pressure in an area where high ground is at a premium. So powerful was the court itself that it was left for the jungle to reclaim. The complete abandonment of the space attests to the importance of the ballgame and ballcourts during the transition to complex society.

By the end of the Cherla phase, the Mazatán region was completely "Olmecized," that is, the Mokaya were emulating their more sophisticated Olmec neighbors. How this process occurred is still a subject of debate (Sharer and Grove 1989). It is interesting to note that the abandonment of the ballcourt at Paso de la Amada corresponds to the fluorescence of the San Lorenzo Olmec in the Gulf Coast. Also at this time, an emphasis on the ballgame at San Lorenzo can be seen in stone sculpture, figurines, and a possible ballcourt (mentioned in Chapter 3). Did the Olmecization of the Mokaya result in the closure of the ballcourt at Paso

de la Amada? Did the Olmec have or usurp exclusive rights to this sacred game? Only further research can provide answers to these questions. For now, this connection hints at the power that the ballgame institution had acquired by the end of the Early Formative.

This summary of events suggests that the ballgame and ballcourts had a significant role in the transition to complex society in Mesoamerica. The construction of the ballcourt at Paso de la Amada was coeval with increasing social hierarchies among the Early Formative Mokaya. It provided the Mokaya with a new and innovating means of interacting with their neighbors. The historical aspect of this innovation speaks for itself—the Mokaya were the progenitors of a pan-Mesoamerican tradition.

The Transition to Complex Society: New Directions

There's an old adage that in order to be lucky, one must to be in a position to receive luck. Looking at the questions concerning the origins of complex society in Mesoamerica led me to Paso de la Amada. My initial research there was directed by broad questions about the mechanics of the process of emerging complexity. One of these concerned the enigma of Mound 7. Occupying a prominent place at the site, it seemed strange that it would be passed over for human occupation. Initial sondages indicated that occupation was sparse and confined to the Barra and Locona phases. The 1995 excavations were puzzling at first. There was no evidence of houses nor of a continuous platform across the mound. When the idea of a ballcourt was presented to me, I had one of those rare moments of eureka followed by awe at the nature of the discovery. The rest of the excavation was a frantic drive to expose and record the structure, establish its dates of construction and occupation, and collect samples for future analysis. The larger implications of this find are still coming to me in bits and pieces.

Foremost among these implications is that ballcourts and competitive ballgames played a critical role in the emergence of complex society in Mesoamerica. I have sketched some of the more likely scenarios in this dissertation. There are, of course, a wide-variety of possibilities which cannot be considered here. In the absence of an Early Formative ballcourt, no one had addressed the role ballcourts played in this fundamental transformation of Mesoamerican society.

Looking back over the literature, complexity studies have made significant advances in the identification of the variables involved in the transition to complex society. These variables echo the observations of Stern (1950) in the epigraph of this chapter and are few in number. As Stern mused, these must have been substantial factors in the adoption of the ballgame by a particular society. The fact that competitive ballgames are so closely linked with certain kinds of societies is worth investigating further. I have argued here that the construction of ballcourt provides *de facto* evidence of a complex society. Therefore, it seems that the real key to understanding the emergence of complex society is to look at the Mesoamerican societies before the first ballcourt was constructed.

Complexity studies, as avenues of future inquiry, need to look for alternative evidence of competitive games and rituals. These are often seen as secondary epiphenomena but the evidence I have presented here suggests that competitive games merit worth a closer look.

This does not call for a radical alteration of the models I reviewed. I envision more of a textual emendation than a full-scale revision. Since competitive games are another form of aggrandizer behavior, the search for archaeological indicators of competitive gaming should be the only major modification to existing models. On the theoretical side, future models may draw from a growing body of literature concerning the anthropology of sport. This nascent field draws together perspectives which seek to explain the mechanisms whereby sport masks, intensifies, and negotiates inequalities .

A robust body of data has now been collected on the emergence of complex society. The challenge for the future will be the synthesis of these disparate data into a cohesive theoretical package. I have attempted to outline what I feel to be the basic elements of the process. My research shows that social transformations are connected to ritual. By looking at ritual and competitive games, we gain new insight into the process of emerging complexity. This gives a valuable diachronic perspective on social evolution and the specific role of ritual in that process.

As ideas of ritual power gain more currency in the literature, it seems appropriate that researchers look for evidence of ritual and competition among societies with developing social and political inequality. In Mesoamerica, the construction of ballcourts represents an important step toward formalizing the rules of competition and giving it a permanent venue. Since we now know this occurred very early in the process of emerging complexity, I suggest that scholars investigating this problem should look for evidence of ballcourts or other large ritual structures that mark this formalization.

We need to locate more ballcourts in Early Formative sites in the Mazatán region and in other regions of Mesoamerica. Looking for evidence of other ballcourts should be a research priority. It is likely that these structures have been missed or misinterpreted in the past. The discovery of the ballcourt at Paso de la Amada has caused me to re-evaluate my ideas about the emergence of complexity. I hope that other researchers will give ballcourts equal consideration in future models. The study of competitive games is still in its infancy but holds real promise to enhance our understanding of the process of emerging complexity.

REFERENCES CITED

Abrams, E.M.
1994 *How the Maya Built Their World: Energetics and Ancient Architecture.* University of Texas Press, Austin.

Acosta, J. and H.M. Koer
1940 Exploraciónes en Tula, Hidalgo. *Revista Mexicana de Estudios Antropológicos*, Tome IV:172-194. Mexico.

Agrinier, P.
1991 The Ballcourts of Southern Chiapas, Mexico. In *The Mesoamerican Ballgame,* edited by V.L. Scarborough and D. Wilcox, pp. 175-194. University of Arizona Press, Tucson.

Alder, M. and R. Wilshusen
1990 Large-scale Integrative Facilities in Tribal Societies: Cross-cultural and Southwestern US Examples. *World Archaeology* 22(2):133-146.

Alvarez del Toro, M.
1985 *¡Asi era Chiapas!: 42 años de andanzas por montañas, selvas y caminos en el estado*. Universidad Autónoma de Chiapas, Tuxtla Gutiérrez, Chiapas.

Ambrose, S. and L. Norr
1992 On Stable Isotopic Data and Prehistoric Subsistence in the Soconusco Region. *Current Anthropology* 33(4):401-404.

Andrews, A. P.
1983 *Maya Salt Production and Trade*. University of Arizona Press, Tucson.

Archer, M.S.
1982 Morphogenesis versus Structuration: On Combining Structure and Action. *British Journal of Sociology* 33:455-483.

Arnold, J.E.
1993 Labor and the Rise of Complex Hunter-Gatherers. *Journal of Anthropological Archaeology* 12:75-119.

1996a *Emergent Complexity: The Evolution of Intermediate Societies*. International Monographs in Prehistory, edited by J.E. Arnold. Archaeological Series 9. Ann Arbor, Michigan.

1996b Organizational Transformations: Power and Labor Among Complex Hunter-Gatherers and Other Intermediate Societies. In *Emergent Complexity: The Evolution of Intermediate Societies*. International Monographs in Prehistory, edited by J.E. Arnold, pp. 59-73. Archaeological Series 9. Ann Arbor, Michigan.

Arroyo, B.

1990 *Early Formative Ceramics in El Salvador: The El Carmen Site*. Paper Presented at the 55th Annual Meetings of the Society for American Archaeology, Las Vegas, Nevada, April 18-22.

1991 *Informe preliminar del proyecto Tecojate, Guatemala*. Ms. on File, Instituto de Antropología e Historia de Guatemala. Guatemala City.

1994 *The Early Formative in Southern Mesoamerica: An Explanation for the Origins of Sedentary Villages*. Unpublished Ph.D. dissertation, Vanderbilt University, Nashville, TN.

Arroyo, B. and H. Neff

1996 *The Early Formative in Coastal Suchitepéquez and Escuintla*, Guatemala. Paper Presented at the 61st Annual Meeting, Society for American Archaeology, April 10-14, 1996, New Orleans, LA.

Aveni, A.F.

1980 *Skywatchers of Ancient Mexico*. University of Texas Press, Austin.

Becarra, M.E.

1930 *Nombres Geográficas Indígenas del Estado de Chiapas*. Imprenta del Gobierno, Tuxtla Gutiérrez.

Beatty, A.

1992 *Society and Exchange in Nias*. Claredon Press, Oxford.

Beauchamp, W.M.

1896 Iroquois Games. *Journal of American Folk-Lore*, Vol. IX, No. XXXV:269-277

Blake, M.

1991 An Emerging Early Formative Chiefdom at Paso de la Amada, Chiapas, Mexico. In *The Formation of Complex Society in Southeastern Mesoamerica*, edited by W. L. J. Fowler, pp. 27-46. CRC Press, Boca Raton.

1993 *The Rise of Chiefdoms in Coastal Chiapas, Mexico*. Paper Presented at the 1993 American Anthropological Association meetings, Washington, D.C.

Blake, M. and J. E. Clark
1999 The Emergence of Hereditary Inequality: the Case of Pacific Coastal Chiapas, Mexico. In *Pacific and Latin America in Prehistory: The Evolution of Archaic and Formative Cultures*, edited by Michael Blake, pp. 55-74. Washington State University Press, Pullman, WA.

Blake, M. and V. Feddema
1991 Paso de la Amada: un resumen de las excavaciones. In *Primer foro de arqueología de Chiapas: cazadores-recolectores-pescadores, agricultores tempranos*, pp.75-85. Gobierno del Estado de Chiapas, Tuxtla Gutierrez, Chiapas.

Blake, M., B.S. Chisholm, J.E. Clark, B. Voorhies and M.W. Love
1992 Early Farming, Fishing and Hunting along the Pacific Coast of Mexico and Guatemala. *Current Anthropology* 33:83-94.

Blake, M., J. E. Clark, V. Feddema, R. Lesure and M. Ryan
1992 *Excavations at Paso de la Amada: Early Formative Chiefdoms in Southeastern Mexico*. Report prepared for the Social Sciences and Humanities Research Council of Canada. Ms. on file, Laboratory of Archaeology, University of British Columbia, Vancouver, B.C.

Blake, M., J. E. Clark, V. Feddema, M. Ryan and R. Lesure
1991 *Early Formative Architecture at Paso de la Amada, Chiapas, Mexico*. Ms. on file, Laboratory of Archaeology, University of British Columbia, Vancouver, B.C.

Blake, M., J. E. Clark, B. Voorhies, G. Michaels, M. W. Love, M. E. Pye, A. A. Demarest and B. Arroyo
1995 A Revised Chronology for the Late Archaic and Formative Periods on the Pacific Coast of Southeastern Mesoamerica. *Ancient Mesoamerica* 6:161-183.

Blake, M., J. E. Clark, B. S. Chisholm and K. Mudar
1992 Non-agricultural Staples and Agricultural Supplements: Early Formative Subsistence in the Soconusco Region, Mexico. In *Transitions to Agriculture in Prehistory*, edited by A. B. Gebauer and T. D. Price, pp.133-151. Prehistory Press, Madison.

Blake, M., R. Lesure, V. Feddema, W. Hill, D. Gosser, J. Clark and R. Lowe
1993 *Preliminary Report: 1993 Excavations at Paso de la Amada, Chiapas, Mexico.* Report prepared for the Social Sciences and Humanities Research Council of Canada. Laboratory of Archaeology, University of British Columbia.

Blanchard, K.
1981 *The Mississippi Choctaws at Play: The Serious Side of Play.* University of Illinois Press, Urbana.

Blanchard, K. and A. Cheska
1985 *The Anthropology of Sport: An Introduction.* Bergin & Garvey, South Hadley, Massachusetts.

Blanton, R.E., G.M. Feinman, S.A. Kowalewski and P.N. Peregrine
1996 A Dual-Processual Theory for the Evolution of Mesoamerican Civilization. *Current Anthropology* 37(1):1-14

Blom, F.
1932 The Maya Ball-Game *Pok-Ta-Pok (*called *Tlachtli* by the Aztecs). *Middle American Research Series Publications* 4:485-530.

Borhegyi, S.F. de
1980 *The Pre-Columbian Ballgames: A Pan-Mesoamerican Tradition.* Milwaukee Public Museum; Contributions in Anthropology and History, Number 1.

Bradley, D.E. and P.D. Joralemon
1992 *The Lords of Life: The Iconography of Power and Fertility in Preclassic Mesoamerica.* The Snite Museum of Art, University of Notre Dame, Indiana.

Breedlove, D.E.
1981 *Flora of Chiapas.* California Academy of Sciences, San Francisco.

Brumfiel, E.M.
1992 Breaking and Entering the Ecosystem: Gender, Class, and Faction Steal the Show. *American Anthropologist* 94:551-567.

1996 Comment on Blanton *et al. Current Anthropology* 37(1):48-50.

Brumfiel, E.M. and J.W. Fox (editors)
1994 *Factional Competition and Political Development in the New World.* Cambridge University Press, Cambridge.

Burley, D.V.
1996 Sport, Status, and Field Monuments in the Polynesian Chiefdom of Tonga: The Pigeon Snaring Mounds of Northern Ha'apai. *Journal of Field Archaeology* 23(4):421-435.

Byland, B.E.
1993 Introduction and Commentary. In *The Codex Borgia*, edited by G. Díaz and A. Rodgers, pp.xiii-xxxii. Dover Publications, Inc. New York.

Campbell, L. and T. Kaufman
1976 A Linguistic Look at the Olmecs. *American Antiquity* 41(1):80-89.

Carneiro, R.L.
1967 On the Relationship Between Size of Population and Complexity of Social Organization. *Southwestern Journal of Anthropology* 23:234-243.

1970 A Theory of the Origin of the State. *Science* 169:733-738.

1981 The Chiefdom: Precursor of the State. In *The Transition to Statehood in the New World,* edited by G.D. Jones and R.R. Kautz, pp.37-79. Cambridge University Press, Cambridge.

Cashdan, E.
1980 Egalitarianism among Hunters and Gatherers. *American Anthropologist* 82: 116-120.

Catlin, G.
1953 A Choktaw Ball Game. In *Primitive Heritage: An Anthropological Anthology,* edited by M. Mead and N. Calas, pp. 289-295. New York.

Caso, A.
1965 Zapotec writing and calendar. In *Handbook of Middle American Indians*, Volume 3, edited by Robert Wauchope and Gordon R. Willey. University of Texas Press, Austin.

Ceja Tenorio, J. F.
1985 Paso de la Amada: An Early Preclassic Site in the Soconusco, Chiapas. *Papers of the New World Archaeological Foundation*, 49. Brigham Young University, Provo.

Cheska, A.T.
1979 Native American Games as Strategies of Social Maintenance. In Play Froms of Native North Americans, edited by E. Norbeck and C. Farrer, West Publishing, St. Paul.

Cheetham, D.
1998 Interregional Interaction, Symbol Emulation, and the Emergence of Socio-political Inequality in the Central Maya Lowlands. Unpublished M.A. Thesis, the University of British Columbia, Vancouver, B.C.

Clark, J. E.
1990 Olmecas, olmequismo y olmequización en Mesoamérica. *Arqueología* 3:49-55.

1991 The Beginnings of Mesoamerica: Apologia for the Soconusco Early Formative. In *The Formation of Complex Society in Southeastern Mesoamerica*, edited by W. R. Fowler, Jr., pp. 13-26. CRC Press, Boca Raton.

1994 *The Development of Early Formative Rank Societies in the Soconusco*, Chiapas, México. Unpublished Ph.D. dissertation, University of Michigan, Ann Arbor.

1996 Comment on Blanton *et al. Current Anthropology* 37(1):51-52.

1998 *The Problematic Evolution of Maya Lords*. Paper Presented at the 63rd Annual Meeting, Society for American Archaeology, March 25-29, 1998, Seattle, WA.

Clark, J. E., and M. Blake
1989 El origen de la civilización en Mesoamerica: Los Olmecas y Mokaya del Soconusco de Chiapas, México. In *El preclásico o formativo: avances y perspectivas*, edited by M. Carmona Macias, pp. 385-403. Museo Nacional de Antropología and Instituto Nacional de Antropología e Historia, México, D.F.

1994 The Power of Prestige: Competitive Generosity and the Emergence of Rank Societies in Lowland Mesoamerica. In *Factional Competition and Political Development in the New World*, edited by E. M. Brumfiel and J. W. Fox, pp. 17-30. Cambridge University Press, Cambridge.

Clark, J.E. and D. Gosser
1995 Reinventing Mesoamerica's First Pottery. In *The Emergence of Pottery*, edited by W.K. Barnett and J.W. Hoopes, pp. 209-221. Smithsonian Institution, Washington.

Clark, J.E. and T.A. Lee Jr.
1984 Formative Obsidian Exchange and the Emergence of Public Economies in Chiapas, Mexico. In *Trade and Exchange in Early Mesoamerica*, edited by K. Hirth, pp. 235-274. University of New Mexico Press, Albuquerque.

Clark, J.E., R. Lesure and T. Pérez S.
1994 *Investigaciones del formativo temprano del litoral Chiapaneco*, 1992. Ms. on file, Instituto Nacional de Antropología e Historia, México, D.F.

Clark, J. E., M. Blake, P. Guzzy, M. Cuevas and T. Salcedo R.
1987 *El preclásico temprano en la costa del pacifico: informe final.* Ms. on file, Instituto Nacional de Antropología e Historia, México, D.F.

Clark, J. E., M. Blake, B. Arroyo, M. E. Pye, R. G. Lesure, V. Feddema and M. Ryan
1990 *Reporte final del proyecto investigaciones del formativo temprano en el litoral Chiapaneco.* Ms. on file, Instituto Nacional de Antropología e Historia, México, D.F.

Coates, A.
1987 *The Commerce in Rubber: The First 250 years.* Oxford University Press, New York.

Codex Medoza
1938 *Codex Medoza.* Waterlow and Sons, London.

Coe, M. D.
1960 Archaeological Linkages with North and South America at La Victoria, Guatemala. *American Anthropologist* 62:363-393.

1961 La Victoria, an Early Site on the Pacific Coast of Guatemala. *Papers of the Peabody Museum of Archaeology and Ethnology*, No. 53. Harvard University, Cambridge, MA.

1965 *The Jaguar's Children: Pre-Classic Central Mexico.* The Museum of Primitive Art, New York.

1989 The Olmec Heartland: Evolution of Ideology. In *Regional Perspectives on the Olmec*, edited by R.J. Sharer and D.C. Grove, pp. 68-82. Cambridge University Press, Cambridge.

Coe, M.D. and S.D. Coe
1996 *The True History of Chocolate.* Thames and Hudson, London.

Coe, M.D. and R.A. Diehl
1980 *In the Land of the Olmec. The Archaeology of San Lorenzo Tenochitán*, Vol.1. University of Texas Press, Austin.

Coe, M. D., and K. V. Flannery
1967 Early Cultures and Human Ecology in South Coastal Guatemala. *Smithsonian Contributions to Anthropology*, vol. 3. Smithsonian Institution, Washington, D.C.

Cohodas, M.
1975 The Symbolism and Ritual Function of the Middle Classic Ball Game in Mesoamerica. *American Indian Quarterly* 2,(2): 99-130.

1978 *The Great Ball Court at Chichén Itzá, Yucatán, Mexico*. Garland Publishing, New York.

1991 Ballgame Imagery of the Maya Lowlands: History and Iconography. In *The Mesoamerican Ballgame,* edited by V.L. Scarborough and D. Wilcox, pp. 251-288. University of Arizona Press, Tucson.

Cohen, M.N.
1985 Prehistoric Hunter-Gatherers: The Meaning of Social Complexity. In *Prehistoric Hunter-Gatherers: The Emergence Of Cultural Complexity,* edited by T.D. Price and J.A. Brown, pp. 99-119. Academic Press, Orlando.

Collier, J. and M. Z. Rosaldo
1981 Politics and Gender in Simple Societies. In *Sexual Meanings: The Cultural Construction of Gender and Sexuality*, edited by S. Ortner and H. Whitehead, pp. 275-329. Cambridge University Press, Cambridge.

Cooper, J.M
1949 Games and Gambling. *Bureau of American Ethnography Bulletin,* Vol. 5, No. 5:503-524. Washington, D.C.

Coupland, G.
1988 Prehistoric Cultural Change at Kitselas Canyon. *National Museum Of Man, Mercury Series,* No. 138. Archaeological Survey of Canada, Ottawa.

Demarest, A.
1989 The Olmec and the Rise of Civilization in Eastern Mesoamerica. In *Regional Perspectives on the Olmec*, edited by R.J. Sharer and D.C. Grove, pp. 303-344. Cambridge University Press, Cambridge.

de Montmollin, O.
1989 *Settlement Survey in the Rosario Valley, Chiapas, Mexico*. Paper No. 57. New World Archaeological Foundation, Brigham Young University, Provo, UT.

1997 A Regional Study of Classic Maya Ballcourts from the Upper Grijalva Basin, Chiapas, Mexico. *Ancient Mesoamerica*, 8:23-41.

Díaz, G. and A. Rodgers
1993 *The Codex Borgia*. Dover Publications, Inc., New York.

Drucker, P.
1948 Preliminary Notes on an Archaeological Survey of the Chiapas Coast. *Middle American Research Records* 1:151-169. New Orleans.

Drennan, R.
1976 Religion and Social Evolution in Formative Mesoamerica. In *The Early Mesoamerican Village*, edited by K.V. Flannery, pp. 345-364. Academic Press, New York.

Drennan, R. D., and C. A. Uribe (editors)
1987 *Chiefdoms in the Americas*. University Press of America, Lanham, MD.

Durán, F.D.
1971 *Book of the Gods and Rites of the Ancient Calendar*. Translated by Fernando Horcasitas and Doris Heyden. University of Oklahoma Press, Norman.

Earle, T.
1978 *Economic and Social Organization of a Complex Chiefdom: the Halelea District, Kauai, Hawaii.* Museum of Anthropology, University of Michigan, Anthropological Papers, 63. University of Michigan, Ann Arbor.

1991 *Chiefdoms: Power, Economy and Ideology*. Cambridge University Press, Cambridge.

1997 *How Chiefs Come to Power: The Political Economy in Prehistory*. Stanford University Press, Stanford.

Eccardi, F. and R. Alvarez del Toro
1987 *Aspectos generales de la ecología en el estado de Chiapas*. Instituto de Historia Natural, México.

Ekholm, S.M.
1969 Mound 30a and the Early Preclassic Ceramic Sequence of Izapa, Chiapas, Mexico. *Papers of the New World Archaeological Foundation*, 25. Provo, Utah.

1991 Ceramic Figurines and the Mesoamerican Ballgame. In *The Mesoamerican Ballgame*, edited by V.L. Scarborough and D. Wilcox, pp. 241-250. University of Arizona Press, Tucson.

Fagan, B.M.
1995 *People of the Earth.* 8th ed. Harper Collins, New York.

Feddema, V.L
1993 *Early Formative Subsistence and Agriculture in Southeastern Mesoamerica.* Unpublished M.A. Thesis, The University of British Columbia.

Feinman, G. M.
1995 The Emergence of Inequality: A Focus on Strategies and Processes. In *Foundations of Social Inequality*, edited by T.D. Price and G. M. Feinman, pp.255-279. Plenum Press, New York.

Feinman, G. M., and J. Neitzel
1984 Too Many Types: An Overview of Sedentary Prestate Societies in the Americas. In *Advances in Archaeological Method and Theory*, Vol. 7, edited by M. B. Schiffer. Academic Press, New York.

Flanagan, J.G.
1989 Hierarchy in Simple "Egalitarian" Societies. *Annual Review of Anthropology* 18:245-266.

Flannery, K. V
1968 The Olmec and the Valley of Oaxaca: A Model for Interregional Interaction in Formative Times. In *Dumbarton Oaks Conference on the Olmec*, edited by E.P. Benson. Dumbaton Oaks, Washington, DC.

1972 The Cultural Evolution of Civilizations. *Annual Review of Ecology and Systematics* 3:399-426.

1975 San José Mogote. *Boletín del Centro Regional de Oaxaca* no. 3, Oaxaca.

Flannery, K.V. and J. Marcus
1976 Evolution of the Public Building in Formative Oaxaca. In *Cultural Change and Continuity: Essays in Honor of James Bennett Griffin,* edited by C.E. Cleland, pp. 205-232. Academic Press, New York.

1993 Cognitive Archaeology. *Cambridge Archaeological Journal* 3(2):260-270.

Flannery, K.V., and R. Spores
1993 Excavated Sites of the Oaxaca Preceramic. In *The Cloud People: Divergent Evolution of the Zapotec and Mixtec Civilizations*, edited by K.V. Flannery and J. Marcus, pp.23-25. Academic Press, New York.

Flannery, R. and J.M Cooper
1946 Social Mechanisms in Gros Venture Gambling. *Southwestern Journal of Anthropology*, Vol.2, No. 4:391-419. Albuquerque, New Mexico.

Flaskerd, G.A.
1961 The Chippewa or Ojibway Moccasin Game. *The Minnesota Archaeologist,* Vol. XXII, No. 4:86-94. Minneapolis, Minnesota.

Fox, J.G.
1993 The Ballcourt Markers of Tenam Rosario, Chiapas, Mexico. *Ancient Mesoamerica* 4(1):55-64.

1994 *Putting the Heart Back in the Court: Ballcourts and Ritual Action in Mesoamerica.* Ph.D. dissertation, Harvard University. UMI, Ann Arbor.

1996 Playing with Power: Ballcourts and Political Ritual in Southern Mesoamerica. *Current Anthropology*, Volume 37(3):483-509.

Fox, J.W.
1991 The Lords Of Light Versus The Lords Of Dark: The Postclassic Highland Maya Ballgame. In *The Mesoamerican Ballgame,* edited by V.L. Scarborough and D. Wilcox, pp. 213-240. University of Arizona Press, Tucson.

Freidel D, L. Schele and J. Parker
1993 *Maya Cosmos: Three Thousand Years of the Shamans' Path.* William Morrow and Company, Inc., New York.

Fried, M.
1967 *The Evolution of Political Society: An Essay in Political Anthropology.* Random House, New York.

Friedman, J.
1979 *System, Structure and Contradiction: The Evolution of Asiatic Social Formations*. The National Museum of Denmark, Copenhagen.

Friedman, J. and M.J. Rowlands
1978 Notes Towards and Epigenetic Model of the Evolution of 'Civilization'. In *The Evolution of Social Systems*, edited by J. Friedman and M.J. Rowlands, pp. 201-276. Proceedings of the 5th Research Seminar in Archaeology, London University, 1977.

Fung, C.D.
1995 *Domestic Labor, Gender, and Social Power*. Ph.D. dissertation, Harvard University. UMI, Ann Arbor

Garcia-Cook, A.
1976 El desarollo cultural en el Norte del Valle Poblano. Inferencias. *INAH Serie Arqueología* no.1. Mexico.

Gillespie, S.
1991 Ballgames and Boundaries. In *The Mesoamerican Ballgame,* edited by V.L. Scarborough and D. Wilcox, pp. 317-345. University of Arizona Press, Tucson.

Godelier, M. and M. Strathern
1991 *Big Men and Great Men: Personification of power in Melanesia.* Cambridge University Press, Cambridge.

Goldman, I.
1970 *Ancient Polynesia.* University of Chicago Press, Chicago.

Green, D. F., and G. W. Lowe (editors)
1967 Altamira and Padre Piedra, Early Preclassic Sites in Chiapas, Mexico. *Papers of the New World Archaeological Foundation*, 20. Brigham Young University, Provo.

Griffin, G.
1972 Xochipala, the Earliest Great Art Style in Mexico. *American Philosophical Society Proceedings* 116:301-309.

Gruneau, R.S.
1975 Sport, Social Differentiation and Social Inequality. In *Sport and Social Order: Contributions to the Sociology of Sport*, edited by D.W. Ball and J.W. Loy, pp. 121-134. Addison-Wesley, Reading, MA.

Hall, G.D., S.M. Tarka, Jr., W.J. Hurst, D. Stuart, and R.E. Adams
1990 Cacao Residues in Ancient Maya Vessels from Río Azul, Guatemala. *American Antiquity* 55(1):138-143.

Hansen, R.D.
1991 The Maya Rediscovered: The Road to Nakbé. *Natural History* 91(5):8-14.

Hayden, B.
1992 *A Complex Culture of the British Columbia Plateau: Stl'atl'imx Resource Use.* University of British Columbia Press, Vancouver.

1995 Pathways to Power: Principles for Creating Socioeconomic Inequalities. In *Foundations of Social Inequality,* edited by D. Price and G. Feinman, pp. 15-86. Plenum Press, New York.

Hayden, B. and R. Gargett
1990 Big Man, Big Heart? A Mesoamerican View of the Emergence of Complex Society. *Ancient Mesoamerica* 1:3-20

Helbig, C.
1964 *El Soconusco y su zona cafetalera en Chiapas*. Instituto de Ciencias y Artes de Chiapas, Tuxtla Gutierrez, Chiapas, Mexico.

Helms, M. W.
1979 *Ancient Panama*. University of Texas Press, Austin.

Hill, W.D.
1996 *Mesoamerica's Earliest Ballcourt and the Origins of Inequality*. Paper Presented at the 61st Annual Meeting, Society for American Archaeology, April 10-14, 1996, New Orleans, LA.

Hill, W.D., M. Blake and J.E. Clark
1998 Ball Court Design Dates Back 3,400 Years. *Nature* 392:878-879.

Hodder, I.
1990 *The Domestication of Europe*. Blackwell Press, Oxford.

Johnson, A.W. and T. Earle
1987 *The Evolution of Human Societies: From Foraging Group To Agrarian State.* Stanford University Press, Stanford.

Joyce, R.A.
1992 Innovation, Communication and the Archaeological Record: A Reassessment of Middle Formative Honduras. *Journal of the Steward Anthropological Society* 20(1 and 2):235-256.

1996 Social Dynamics of Exchange: Changing Patterns in the Honduran Archaeological Record. In *Chieftains, Power and Trade: Regional Interaction in the Intermediate Area of the Americas*, edited by C.H. Langebaek and F. Cardenas-Arroyo, pp. 31-46. Departamento de Antropología, Universidad de los Andes, Bogata, Colombia.

Keeley, L.H.
1988 Hunter-Gatherer Economic Complexity and "Population Pressure": A Cross-Cultural Analysis. *Journal of Anthropological Archaeology* 7(4):373-411.

Kelley, J.C.
1991 The Known Archaeological Ballcourts of Durango and Zacatecas, Mexico. In *The Mesoamerican Ballgame*, edited by V.L. Scarborough and D. Wilcox, pp. 87-100. University of Arizona Press, Tucson.

Kelly, I.
1943 Notes on a West Coast Survival of the Ancient Mexican Ball Game. *Notes on Middle American Archaeology and Ethnology,* 1(26):163-174. Cambridge, Massachusetts.

Kelly, W.W.
1998 Blood and Guts in Japanese Professional Baseball. In *The Culture of Japan as Seen Through its Leisure*, edited by Sepp Linhart and Sabine Früstrück, pp. 95-111. SUNY Press, Albany.

Kirch, P.V.
1984 *The Evolution of the Polynesian chiefdoms.* Cambridge University Press, Cambridge.

1990 Monumental Architecture in Polynesian Chiefdoms: A Comparison of Tonga and Hawaii. *World Archaeology* 22(2):206-222.

Knauth, L.
1961 El juego de pelota y el rito de la decapitación. *Estudios de cultura Maya* 1:183-198.

Kowalewski, S.A., G. Feinman, L. Finsten, R.E. Blanton
1991 Pre-Hispanic Ballcourts from the Valley of Oaxaca, Mexico. In *The Meso-american Ballgame,* edited by V.L. Scarborough and D. Wilcox, pp. 25-44. University of Arizona Press, Tucson.

Krickeberg, W.
1948 [1966] El juego de pelota y su simbolismo religioso. *Traducciones Meso-americanistas* 1:191-313. Sociedad Mexicana de Antropología.

Lederman, R.
1991 'Interests' in Exchange: Increment, Equivalence and the Limits of Big-Manship. In *Big Men and Great men: Personifications of Power in Melanesia*, edited by M. Godelier and M. Strathern, pp. 215-233. Cambridge University Press, Cambridge.

Lemonnier, P.
1991 From Great Men to Big Men: Peace, Substitution and Competition in the Highlands of New Guinea. In *Big Men and Great Men: Personification of Power in Melanesia*, edited M. Godelier and M. Strathern, pp. 7-27. Cambridge University Press, Cambridge.

Lesure, R.G.
1995 *Paso de la Amada: Sociopolitical Dynamics in an Early Formative Community.* Unpublished Ph.D. dissertation, University of Michigan, Ann Arbor.

1997 Early Formative Platforms at Paso de la Amada, Chiapas, Mexico. *Latin American Antiquity* 8(3):217-236.

Lévi-Strauss, C.
1966 *The Savage Mind.* University of Chicago Press, Chicago.

Leyenaar, T.J.J.
1978 *Ulama: The Perpetuation in Mexico of the Pre-Spanish Ball Game Ullamaliztli.* E.J. Brill, Leiden.

1988 Trophy Heads, Coffee Bean Eyes and The Ballgame. In *The Mesoamerican Ballgame. Papers prepared at the International Colloquium "The Mesoamerican Ballgame 2000 BC – AD 2000"*, Leiden, June 30th – July 3rd, 1988, edited by G.W. van Bussel, P.L.F. van Dongen and T.J.J. Leyenaar. Rijksmuseum voor Volkenkunden, Leiden, 1991.

1992 Ulama, The Survival of the Mesoamerican Ballgame *Ullamaliztli. Kiva* 58:115-153.

Lorenzo, J.L.
1955 Los concheros de la costa de Chiapas. *Anales del Instituto Nacional de Antropología e Historia* 7:41-50. México.

Love, M.W.
1986 *Preliminary Report on Archaeological Work in Ocós, San Marcos*, 1984-85. Ms. on file, Instituto de Antropología e Historia, Guatemala.

1989 *Early Settlements and Chronology of the Rio Naranjo, Guatemala.* Unpublished Ph.D. dissertation, University of California, Berkeley.

1991 Style and Social Complexity in Formative Mesoamerica. In *The Formation of Complex Society in Southeastern Mesoamerica,* edited by W.R. Fowler, Jr., pp. 47-76. CRC Press, Boca Raton.

Lowe, G. W.
1959 Archaeological Exploration of the Upper Grijalva River, Chiapas, Mexico. In Research in Chiapas, Mexico. *Papers of the New World Archaeological Foundation*, 2. Brigham Young University, Provo, UT.

1975 The Early Preclassic Barra Phase of Altamira, Chiapas: A Review with New Data. *Papers of the New World Archaeological Foundation*, 38. Brigham Young University, Provo, UT.

1977 The Mixe-Zoque as Competing Neighbors of the Lowland Maya. In *The Origins of Maya Civilization*, edited by R.E.W. Adams, pp. 197-248. University of New Mexico, Albuquerque.

Lowe, G.W. and J.A. Mason
1965 Archaeological Survey of the Chiapas Coast, Highlands, and Upper Grijalva Basin. In *Handbook of Middle American Indians*, Vol. 2, pp. 195-236. University of Texas Press, Austin.

Lowe, G.W., T.A. Lee, Jr. and E. Martinez
1982 Izapa: An Introduction to the Ruins and Monuments. *Papers of the New World Archaeological Foundation*, 31. Provo, Utah.

MacClancy, J.
1996 *Sport, Identity and Ethnicity*. Berg Press, Oxford.

MacNeish, R.S., F.A. Peterson and K.V. Flannery
1972 *The Prehistory of the Tehuacán Valley*, Vol. 1, edited by R.S. MacNeish. University of Texas Press, Austin.

Matos Moctezuma, E.
1968 Piezas de saqueo procedentes de Jerécuaro, Gto. *Boletín de Instituto Nacional de Antropología e Historia* 33:30-35. Mexico, D.F.

Matson, R.G.
1983 Intensification and the Development of Cultural Complexity. In *The Evolution of Maritime Cultures on the Northeast and Northwest Coasts of America*, edited by Ronald Nash, pp., 125-148. Simon Fraser University, Department of Archaeology Publication No. 11, Burnaby, B.C.

1985 The Relationship Between Sedentism and Status Inequalities Among Hunters and Gatherers. In *Status, Structure and Stratification: Current Archaeological Reconstructions*, edited by Marc Thompson, Maria T. Garcia and Francois Kense, pp. 245-252. University of Calgary Archaeological Association, Calgary, Alberta.

McBryde, F.W.
1947 *Cultural and Historical Geography of Southwest Guatemala.* Smithsonian Institution, Institute of Social Anthropology, Publication No. 4. Washington, D.C.

Messner, M.A.
1988 Sports and Male Domination: The Female Athlete as Contested Ideological Terrain. *Sociology of Sports Journal* 5:197-211.

Michaels, G. and B. Voorhies
1989 *Late Archaic Period Coastal Collectors in Southern Mesoamerica: The Chantuto Revisited.* Paper Presented at the Circum-Pacific Prehistory Conference: The Development of Agriculture and the Emergence of Formative Civilization. Seattle, Washington.

Miller, D.E.
1976 *La Libertad: A Major Middle and Late Preclassic Ceremonial Center in Chiapas,* Mexico: *A Preliminary Report.* New World Archaeological Foundation, Brigham Young University, Provo, UT.

Miller, M.E. and S.D. Houston
1987 The Classic Maya ballgame and its architectural setting. *Res* 14:46-65.

Mitchell, W.E.
1988 The Defeat of Hierarchy: Gambling as Exchange in Sepic Society. *American Ethnologist* 15(4):638-657.

Mora-Echeverría, J.
1984 Prácticas y conceptos prehispánicos sobre espacio y tiempo: a propósito del origin del calendario mesoamericano. *Boletín de Antropología Americana,* 9:5-46. Instituto Panamericano de Geografía y Historia, Mexico, D.F.

Navarrete, C.
n.d. Investigaciones de Aquiles Serdán, Chiapas, México. Manuscript on file at the New World Archaeological Foundation, Provo, UT.

Ochoa-Castillo, P.
1992 *El juego de pelota en el México precolombino y su pervivencia en la actualidad.* Museu Etnológic, Fundación Folch, Barcelona.

Oliveros, A.
1992 Apuntes sobre orígenes y desarrollo del juego de pelota. In *El juego de pelota en Mesoamérica: sus raíces y supervivencia*, edited by M.T. Uriate, pp. 39-51. Siglo veintiuno editores, Mexico.

Ortiz, P.
1992 Las ofrendas de El Manatí y su posible asociación con el juego de pelota: un yugo a destiempo. In *El juego de pelota en Mesoamérica: sus raíces y supervivencia*, edited by M.T. Uriate, pp. 55-90. Siglo veintiuno editores, Mexico.

Ortiz, P. and M. del Carmen Rodríguez
1994 Los espacios sagrados olmecas: El Manatí, un caso especial. In *Los olmecas in Mesoamérica*, edited by J.E. Clark, pp.69-91, Citibank, Mexico.

Paillés, M.
1980 Pampa el Pajón: An Early Middle Preclassic Estaurine Site, Chiapas, México. *Papers of the New World Archaeological Foundation*, 44. Provo, UT.

Pasztory, E.
1978. Historical Synthesis of the Middle Classic Period. In *Middle Classic Mesoamerica: A.D.* 400-700, edited by E. Pasztory, pp. 3-22. Columbia University Press, New York.

Peebles, C. and S.M. Kus
1977 Some Archaeological Correlates Of Rank Society. *American Antiquity* 42:421-448.

Piña Chan, R.
1955 *Las Culturas Preclasicas de la Cuenca de Mexico*. Fondo de Cultura Economica, México, D.F.

1961 Reconocimiento arqueológico en el estado de Chiapas. *Tercer Mesa Redonda*, Sociedad Mexicana de Antropología, pp. 53-62.

Plog, S.
1995 Equality and Hierarchy: Holistic Approaches to Understanding Social Dynamics in the Pueblo Southwest. In *Foundations of Social Inequality*, edited by T.D. Price and G.M. Feinman, pp. 189-206. Plenum Press, New York.

Pozorski, T. and S. Pozorski
1995 An I-Shaped Ball-Court Form at Pampa de las Llamas-Moxeke, Peru. *Latin American Antiquity*, 6(3):pp. 274-280.

Price, D. and G.M. Feinman (editors)
1995 *Foundations of Social Inequality*. Plenum Press, New York.

Pye, M.E.
1995 *Settlement, Specialization, and Adaptation in the Río Jesus Drainage, Retalhuleu, Guatemala*. Unpublished Ph.D. dissertation, Department of Anthropology, Vanderbilt University, Nashville.

Pye M.E. and A.A. Demarest
1995 The Evolution of Complex Societies in Southeastern Mesoamerica: New Evidence from El Mesak, Guatemala. In *The Formation of Complex Society in Southeastern Mesoamerica*, edited by W.R. Fowler, Jr., pp.77-100. CRC Press, Boca Raton.

Quirarte, J.
1977 The Ballcourt in Mesoamerica: Its Architectural Development. In *Pre-Columbian Art History*, edited by A. Corody-Collins and J. Stern, pp. 191-212. Peek Publications, Palo Alto.

Redman, C.L.
1978 The Rise of Civilization: From Early Farmers to Urban Society in the Ancient Near East. Freeman Press, San Francisco.

Renfrew, C.
1974 Beyond a Subsistence Economy: The Evolution of Social Organization in Prehistoric Europe. In *Reconstructing Complex Societies: An Archaeological Colloquium*, edited by C.B. Moore, pp. 65-95. Bulletin of the American Schools of Oriental Research 20.

1983 The Social Archaeology of Megaliths. *Scientific American* 249:152-163.

1994 The Archaeology of Religion. In The Ancient Mind: Elements of a Cognitive Archaeology, edited by C. Renfrew and E. Zubrow, pp. 47-54. Cambridge University Press, Cambridge.

Renfrew, C. and J.F. Cherry
1986 *Peer-Polity Interaction and Socio-Political Change*. Cambridge University Press, Cambridge.

Rosenswig, R.
1998 *A Comparison of Early and Middle Formative Political Development in the Soconusco and the Valley of Oaxaca: Settlement, Mortuary, and Architectural Patterns*. Unpublished M.A. Thesis, University of British Columbia, Vancouver.

Rzedowski, J. and M. Equihua
1987 *Atlas cultural de México: Flora*. Secretaría de Educación Pública; Instituto Nacional de Antropología e Historia, Mexico City.

Sahlins, M. D.
1958 *Social Stratification in Polynesia*. University of Washington Press, Seattle.

Sanders, W.T. and B. Price
1968 *Mesoamerica: The Evolution of a Civilization*. Random House, New York.

Santley, R.S., Berman, M.J., and Rani T. Alexander
1991 The Politicization of the Mesoamerican Ballgame and its Implications for the Interpretation of the Distribution of Ballcourts in Central Mexico. In *The Mesoamerican Ballgame*, edited by V.L. Scarborough and D. Wilcox, pp. 3-24. University of Arizona Press, Tucson.

Sbrzesny, H.
1976 *Die Spiele der !Ko-Buschleute: unter besonderer Berücksichtigung ihrer sozialisierenden und gruppenbindenden Funktionen.* R. Piper and Company, Munich.

Scarborough, V.L. and D.R. Wilcox (editors)
1991 *The Mesoamerican Ballgame.* University of Arizona Press, Tucson.

Schele, L. and D.A. Freidel
1991 The Courts of Creation: Ballcourts, Ballgames, and Portals to the Maya Otherworld. In *The Mesoamerican Ballgame,* edited by V.L. Scarborough and D. Wilcox, pp. 289-316. University of Arizona Press, Tucson.

Schele, L. and M.E. Miller
1986. *The Blood of Kings: Dynasty and Ritual in Maya Art.* Kimball Art Museum, Ft. Worth.

Seler, E.
1904-1909 *Codex Borgia. Eine altmexikanische Bilderschrift der Bibliothek der Congregatio de Propaganda Fide*. 3 vols. Berlin.

1963 *Comentarios al Codice Borgia*, 3 vols. Trans. Marianna Frenk. Fondo de Cultura Economica, Mexico.

Service, E. R.
1962 *Primitive Social Organization: An Evolutionary Perspective*. Random House, New York.

1975 *The Origins of the State and Civilization.* W.W. Norton & Co., New York.

Sethuraj, M.R. and C.R. Nehru
1997 *Beekeeping in Rubber Plantations.* Rubber Research Institute of India, Kottayam, Kerala, India.

Sharer, R.J.
1994 *The Ancient Maya.* 5th Edition. Stanford University Press, Stanford.

Sharer, R.J. and D.C. Grove (editors)
1989 *Regional Perspectives on the Olmec.* Cambridge University Press, Cambridge.

Shook, E.M. and M. Hatch
1979 The Early Preclassic Sequence in the Ocós/Salinas La Blanca Area, South Coast of Guatemala. *Contributions of the University of California Archaeological Research Facility* 41:143-195.

Smith, A.L.
1961 Types of Ball Courts in the Highlands of Guatemala. In *Essays in Precolumbian Art and Archaeology,* edited by S. K. Lothrop, pp. 100-125. Harvard University Press, Cambridge.

Standley, P,C.
1926 *Trees and Shrubs of Mexico.* Contributions from the United States National Herbarium, Vol. 23. Smithsonian Institution United States National Museum. Washington Government Printing Office.

Stern, T.
1950 *The Rubber-Ball Game of the Americas.* Monographs of the American Ethnological Society 17.

Stark, B.L and P.J. Arnold (editors)
1997 *Olmec to Aztec: Settlement Patterns in the Ancient Gulf Lowlands.* University of Arizona Press, Tucson.

Stirling, M.W.
1943 *Stone Monuments of Southern Mexico.* Bureau of American Ethnology, Bulletin 138. Smithsonian Institution, Washington.

Struna, N.L.
1996 *People of Prowess: Sport, Leisure, and Labor in Early Anglo-America.* University of Illinois Press, Chicago.

Taladoire, E.
1981 *Les Terrains de Jeu de Balle (Mésoamérique et Sud-ouest des Etats-Unis).* Etudes Mésoaméricaines, Series II, 4. Mission Archeologique et Ethnologique Française au Mexique, Mexico.

Taladoire, E. and B. Colsenet
1991 Bois Ton Sang, Beaumanoir: The Political and Conflictual Aspects of the Ballgame in the Northern Chiapas Area. In *The Mesoamerican Ballgame,* edited by V.L. Scarborough and D. Wilcox, pp. 161-174. University of Arizona Press, Tucson.

Taube, K.A.
1992 Uses of Sport: Review of The Mesoamerican Ballgame. *Science* 256:1064-1065.

Tedlock, D.
1985 *Popol Vuh: The Definitive Edition of The Mayan Book of the Dawn of Life and the Glories of Gods and Kings.* Simon and Schuster, New York.

Testart, A.
1982 The Significance of Food Storage among Hunter-Gatherers: Residence Patterns, Population Densities, and Social Inequalities. *Current Anthropology* 23:523-537.

Torquemada, F.J.
1943 Monarquía Indiana. 3rd ed., Vol. 2. Salvador Chávez Press, Mexico.

Trigger, B.G.
1990 Monumental Architecture: A Thermodynamic Explanation of Symbolic Behavior. *World Archaeology* 22(2):119-132.

Uriate, M.T.
1992 El juego de pelota en los murales de Tepantitla, en Teotihuacán. In *El juego de pelota en Mesoamérica: sus Raíces y supervivencia*, edited by M.T. Uriate, pp. 113-141. Siglo veintiuno editores, Mexico.

Van Bussel G.W., P.L.F. van Dongen and T.J.J. Leyenaar
1991 The Mesoamerican Ballgame. *Papers Presented at the International Colloquium 'The Mesoamerican Ballgame 2000 BC – AD 2000'*, Leiden, June 30th – July 3rd, 1988. Rijksmuseum voor Volkenkunden, Leiden.

Voorhies, B.
1976 The Chantuto People: An Archaic Period Society of the Chiapas Littoral, Mexico. *Papers of the New World Archaeological Foundation*, 41. Brigham Young University, Provo, UT.

1989 *Ancient Trade and Tribute: Economies of the Soconusco Region of Mesoamerica.* University of Utah Press, Salt Lake City.

1990 *Late Archaic Coastal Adaptations in Southern Mesoamerica.* Final Report Submitted to the National Geographic Society, Washington, D.C.

1994 *Subsistence and Settlement of Preceramic Peoples of Coastal Chiapas, Mexico.* Report Submitted to the National Geographic Society, Washington, D.C.

Weigand, P.C.
1991 The Western Mesoamerican Tlachco: A-Two-Thousand-Year Perspective. In *The Mesoamerican Ballgame*, edited by V.L. Scarborough and D. Wilcox, pp. 73-86. University of Arizona Press, Tucson.

Wilkerson, J.
1991 And Then They Were Sacrificed: The Ritual Ballgame of Northeastern Mesoamerica Through Time and Space. In *The Mesoamerican Ballgame,* edited by V.L. Scarborough and D. Wilcox, pp. 45-72. University of Arizona Press, Tucson.

Wittfogel, K.A.
1957 *Oriental Despotism: A Comparative Study of Total Power.* Yale University Press, New Haven.

Wolf, E.R.
1990 Distinguished Lecture: Facing Power—Old Insights, New Questions. *American Anthropologist* 92:586-596.

Wyshak, L.W., R. Berger, J.A. Graham and R. F. Heizer
1971 A Possible Ball Court at La Venta, Mexico. *Nature* 232:650-651.

Yoffee, N.
1993 Too Many Chiefs? (or, Safe Texts for the '90s). In *Archaeological Theory: Who Sets The Agenda?* edited by N. Yoffee, pp. 60-78. Cambridge University Press, Cambridge.

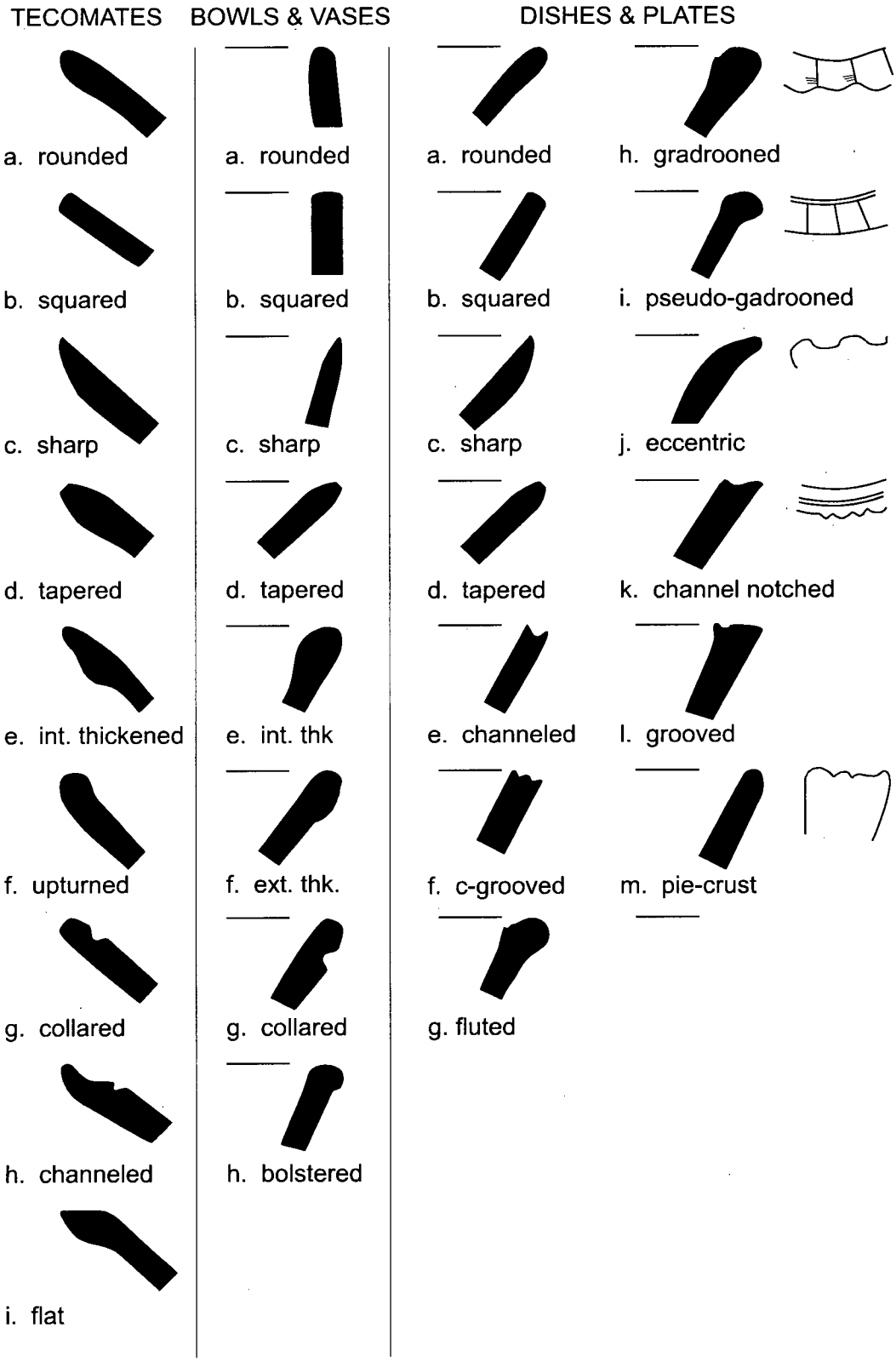
APPENDIX A

POTTERY TYPES, VESSEL, AND RIM FORMS FROM CONTROL UNITS

Pottery was classified according to a type-variety system developed by Clark (n.d.) for the Mazatán region. It cannot be reproduced here. However, pottery classification followed the general typology outlined in Blake *et al.* (1995). Rim form designations are illustrated in the following pages. Vessel forms, along with their numerical designations, also appear. A sample entry is as follows:

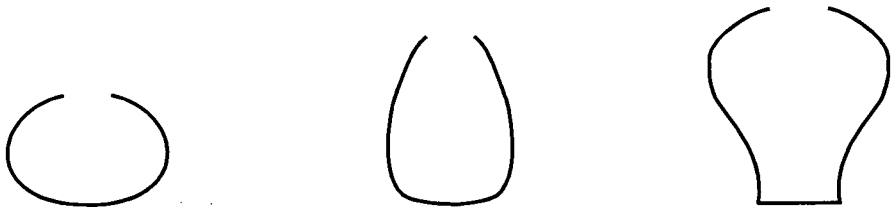
Unit= excavation unit
Level= arbitrary level
Depth= depth below surface
Count= sherd count of a particular type or variety
Weight= in grams
Type= pottery type according to typology
R/B/L= rim/body/leg
Form= vessel form followed by rim form, if applicable (see illustrations for key)
Décor= plastic decoration
Slip= type of slip and where applied

RIM FORMS


TECOMATES
BOWLS & VASES
DISHES & PLATES
a. rounded
b. squared
c. sharp
d. tapered
e. int. thickened
f. upturned
g. collared
h. channeled
i. flat
a. rounded
b. squared
c. sharp
d. tapered
e. int. thk
f. ext. thk.
g. collared
h. bolstered
a. rounded
b. squared
c. sharp
d. tapered
e. channeled
f. c-grooved
g. fluted
h. gradrooned
i. pseudo-gadrooned
j. eccentric
k. channel notched
l. grooved
m. pie-crust

VESSEL FORMS

TECOMATES (T)

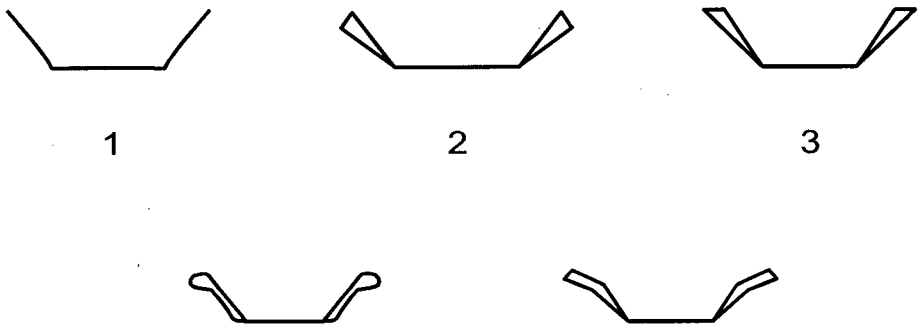


1 2 3

BOWLS AND VASES (B)

1 2 3 4

DISHES AND PLATES (D)



1 2 3

4 5

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
E75/N86	1	0-20cm	1	23	Bayo Brown	B	B3	ribbed	int.
			1	12	Chilo Red	B	T	base	
			1	5	Michis P/O washed	R	T		
			1	5	Michis P/O washed	B	T	shell-edge	
			2	18	Chilo Red	R	D5b		
			3	14	Michis P/O washed	B	T		
			6	23	Chilo Red	B	T		
			27	88	Unknown (eroded)	B	-		
E75/N86	2	20-40cm	1	6	Chilo Red	B	T		
			2	6	Chilo Red	R	D1b		int.
			3	8	Unknown (eroded)				
			1	2	Unknown Buff	R	T		
			2	11	Unknown Buff	B	T		
E75/N86	3	40-60cm	1	25	Tepa R/W	B	T		
			1	10	Capote White	R	D1c		int./ext.
			1	8	Tusta Red	B	T		
			1	3	Bayo Brown	B	D		int./ext.
			1	2	Unknown (eroded)	B			
E75/N86	5	80-100cm	1	4	Bayo Brown	B	T		
			1	3	Unknown (eroded)	B			
			1	21	Capote White	B	T		
			1	15	Unknown Buff	B	T	fluted	
			1	16	Unknown Buff	B	T		
			1	10	Tusta Red	B	T	grooved	
E75/N86	6	100-120cm	1	11	Cotan Red	B	T		
			1	3	Petacalapa Black	B	T		
			1	8	Salta Orange	B	T		
			2	10	Capote White	B	T		
			2	8	Bayo Brown	B	T		
			4	10	Tusta Red	B	T		
			5	30	Tusta Red	B	T	fluted	
E83/N105	1	0-20cm	1	10	Michis P/O	B	T		
			1	16	Monte R/B	R	T	punctate	
			2	12	Chilo Red	B	T		
			1	2	Chilo Red	B	T	fluted	
			2	22	Unknown Buff	B	T		
			1	6	Unknown Buff	B	T	shell-back 3	
			5	20	Unknown (eroded)	B			
E83/N105	2	20-40cm	1	12	Michis P/O washed	B	T		
			1	15	Monte R/B	B	T		
			2	28	Unknown (eroded)	B	T		
			1	4	Chilo Red	B	T		
			1	15	Chilo Red	B	D		int./ext.
			1	2	Chilo Red	B	T	grooved	
E96/N94	1	0-10cm	1	9	Chilo Red	R	T		
			1	11	Chilo Red	B	T		
			1	11	Papaya Orange	B	D		int./ext.
			3	12	Unknown (eroded)	B			
			12	79	Unknown (eroded)	B	T		
			1	3	Cotan Red	B	T		
			4	14	Colona Brown	B	D		ext.
			2	6	Michis P/O washed	B			

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			1	4	Chilo Red	R	T		
			5	28	Chilo Red	B	T		
			2	19	Chilo Red	R	D1b		int.
			1	2	Chilo Red	B	D		
			3	19	Chilo Red	B	D		int./ext.
			2	32	Chilo Red	B	D		ext.
E96/N106	1	0-10cm	4	55	Chilo Red	R	T		
			7	52	Chilo Red	B	T	grooved	
			1	18	Chilo Red	B	T	ribbed	
			21	138	Chilo Red	B	T		
			1	20	Chilo Red	R	D2f		int.
			9	230	Chilo Red	B	D		int.
			8	8	Chilo Red	B	D		int./ext.
			2	30	Michis P/O plain	B	T	shell-edge 2	
			2	8	Michis P/O plain	B	T	dentate	
			1	6	Michis P/O plain	B	T	grooved	
			4	35	Michis P/O plain	B	T		
			3	24	Michis P/O washed	B	T	grooved	
			1	18	Michis P/O washed	B	T	shell-back 3	
			37	194	Michis P/O washed	B	T		
			2	33	Colona Brown	B	T	grooved	
			4	69	Colona Brown	B	D		int./ext.
			2	10	Colona Brown	B	T		
			1	4	Tusta Red	B	T	gadrooned	
			1	6	Tusta Red	B	D		int./ext.
			1	15	Arroyo Buff	B	D		int.
			1	10	Mavi Buff	B	T		
			34	124	Unknown (eroded)	B			
E98/N106	1	0-10cm	13	28	Unknown (eroded)	B			
			1	20	Tusta Red	B	T		
			1	6	Monte R/B	B	T	fluted	
			1	5	Chilo Red R/B	B	T		
			2	13	Chilo Red	B	T	grooved	
			16	76	Chilo Red	B	T		
			1	21	Chilo Red	R	D1b		
			3	38	Chilo Red	B	D		int./ext.
			1	5	Michis P/O	B	T	grooved	
			6	48	Michis P/O washed	B	T		
			2	34	Unknown Buff	B	T		
E100/N79	1	0-20cm	1	22	Cotan Red	R	T		
			2	8	Tusta Red	R	T		
			5	45	Tusta Red	B	T	grooved	
			1	9	Tusta Red	B	T		
			1	6	Chilo Red	R	T		
			9	70	Chilo Red	B	T		
			1	2	Chilo Red	R	D		int./ext.
			7	90	Chilo Red	B	D		int.
			6	24	Chilo Red	B	D		int./ext.
			3	16	Michis P/O	B	T	gouged	
			2	7	Michis P/O washed	B	T	grooved	
			3	7	Michis P/O washed	B	T	shell-backed	
			20	140	Michis P/O washed	B	T		

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			1	22	Paso Red	R	D3b		
			1	23	Guamuchal plain	R	T		
			59	267	Unknown (eroded)				
E100/N79	2	20-40cm	1	17	Pino Black	R	D1a		
			1	10	Pino B/W	B	T		
			2	20	Bala Brown	R	D1a		
			1	108	Bala White	R	D1b		
			1	100	Mapache R/B	R	T		
			1	4	Chilo Red	R	T		
			22	136	Chilo Red	R	T		
			1	31	Chilo Red	R	D4c		int.
			1	9	Chilo Red	B	D	grooved	int.
			6	86	Chilo Red	B	D		int.
			7	68	Chilo Red	B	D		int./ext.
			1	25	Chilo Red	R	D2b		int./ext.
			1	11	Tepa R/B	B	T		
			1	7	Michis P/O	R	T		
			1	4	Michis P/O plain	B	T	fluted	
			3	20	Michis P/O plain	B	T	grooved	
			9	192	Michis P/O washed	B	T		
			5	25	Unknown Buff	B			
			1	23	Chilo R/B	R	T		
			3	11	Colona Brown	B	T		
			2	15	Paso Red	B	T	grooved	
			67	393	Unknown (eroded)	B			
E100/N79	3	40-60cm	108	543	Unknown (eroded)	B			
			3	52	Chilo R/B	R	T		
			1	8	Monte R/B	R	T		
			2	16	Tusta Red	B	T	fluted	
			2	15	Cotan Red	B	T		
			3	24	Chilo Red	R	T		
			1	2	Chilo Red	B	T	grooved	
			20	115	Chilo Red	B	T		
			1	46	Chilo Red	R	D1b		int.
			1	2	Chilo Red	R	D1a		int.
			1	22	Chilo Red	B	D	fluted	int.
			6	28	Chilo Red	B	D		int.
			2	30	Chilo Red	B	D		int./ext.
			1	10	Michis P/O	R	T		
			2	36	Michis P/O washed	B	T	grooved	
			1	6	Michis P/O washed	B	T	ribbed	
			40	236	Michis P/O washed	B	T		
			1	19	Unknown Buff	B	T		
			1	30	Paso Red	B	D		ext.
			5	73	Pino B/W	B	D		int.
			2	25	Pino B/W	R	D1a		
			1	30	Arenera Orange	R	D1a		
E100/N79	4	60-80cm	1	8	Bala Brown	B	D		int.
			1	40	Pino B/W	R	T	necked	
			2	28	Pino B/W	R	D1c		
			3	25	Pino B/W	B	D		
			1	7	Chilo Red	R	T		

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			2	14	Chilo Red	B	T	grooved	
			2	11	Chilo Red	B	T	fluted	
			23	150	Chilo Red	B	T		
			1	9	Chilo Red	R	D4l		int.
			10	137	Chilo Red	B	D		int.
			4	160	Chilo Red	B	D		int./ext.
			1	2	Chilo Red	R	B2a		int./ext.
			1	13	Chilo Red	B	D	fluted	
			1	12	Tusta Red	R	T	ribbed	
			1	7	Tusta Red	B	T	grooved	
			1	9	Monte R/B	B	T	grooved	
			1	11	Chilo R/B	R	T		
			2	36	Chilo R/B	R	D1b		
			1	51	Colona Brown	B	D	shell-back	int./ext.
			1	4	Colona Brown	B	T	gadrooned	
			2	42	Paso Red	R	T		
			1	61	Paso Red	R	T	shell-edge	ext.
			1	73	Sandoval Buff	R	D1c		
			5	102	Michis P/O washed	R	T		
			1	34	Michis P/O washed	B	T	grooved	
			36	449	Michis P/O washed	B	T		
			12	124	Unknown Buff	B			
			175	1170	Unknown (eroded)	B			
E100/N79	5	80-100cm	1	21	Chilo R/B	B	T	grooved	
			1	7	Monte R/B	B	T	cross-hatched	
			1	8	Monte R/B	B	T	grooved	
			1	14	Tusta Red	B	T	fluted	
			1	8	Chilo Red	B	T	ribbed	
			2	10	Chilo Red	B	T	grooved	
			3	25	Chilo Red	B	T		
			1	23	Chilo Red	R	D	notched	int.
			1	30	Chilo Red	B	D		int.
			1	37	Chilo Red	R	B2a		int./ext.
			1	22	Chilo Red	B	D		int./ext.
			36	315	Michis P/O washed	B	T		
			1	6	Unknown Buff	B			
E100/N79	6	100-120cm	2	6	Tusta Red	B	T		
			1	16	Michis P/O	R	T		
			1	32	Michis P/O washed	B	T		
			2	20	Chilo Red	B	T		
E100/N79	7	120-140cm	2	12	Chilo Red	B	T		
			1	11	Unknown Buff	B	T		
E100/N79	9	160-180cm	1	18	Chilo Red	B	T		
E100/N93	4	30-50cm	1	25	Papaya Orange	B	T		
E100/N93	5		1	6	Colona Brown	B	D		int./ext.
			1	26	Tusta Red	R	D1b		int./ext.
			2	5	Unknown (eroded)				
E100/N93	6		1	22	Casnel Black on Red	B	T		
E100/N93	7	90-110cm	1	3	Tusta Red	B	T		
			1	4	Monte R/B	B	T	zoned grooved	
E100/N93	9	130-150cm	1	10	Capote White	B	T	fluted	
			1	3	Tepa R/W	B	T		

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			1	15	Cotan Red	R	D1b		int.
E100/N93	10	150-170cm	2	16	Capote White	B	T		
E100/N96	1	0-10cm	5	18	Tusta Red	B	T		
			1	2	Chilo R/B	B	T		
			1	5	Colona Brown	R	D1d		
			1	6	Colona Brown	B	T	gadrooned/fluted	
			1	97	Bala Brown	R	D1b		int.
			1	5	Paso Brown	B	D		int.
			2	66	Paso Red	R	T		
			2	6	Paso Red	B	T	grooved	
			8	36	Paso Red	B	T		
			5	35	Michis P/O	R	T		
			5	38	Michis P/O	B	T	grooved	
			1	3	Michis P/O	B	T	punctate	
			9	15	Michis P/O washed	B	T		
			1	11	Chilo Red	R	D1d		int.
			2	28	Chilo Red	R	D1b		int.
			1	14	Chilo Red	R	D2		int.
			1	2	Chilo Red	R	D1c		int./ext.
			13	82	Chilo Red	B	D		int.
			9	55	Chilo Red	B	D		int./ext.
			1	3	Chilo Red	B	D		ext.
			2	7	Chilo Red	R	T		
			1	2	Chilo Red	B	T	grooved	
			25	117	Chilo Red	B	T		
			63	795	Unknown (eroded)	B			
E100/N96	4	30-40cm	2	8	Cotan Red	B	T		
			4	35	Tusta Red	R	T	grooved	
			1	4	Tusta Red	R	T	gadrooned	
			4	15	Tusta Red	B	T	gadrooned	
			2	13	Salta Orange	B	T	gadrooned	
			1	5	Salta Orange	B	T		
			2	27	Bayo Brown	B	T		
			4	47	Monte R/B	B	T		
			1	13	Capote White	R	T		
			1	8	Capote White	B	T	grooved	
			1	25	Chilo R/B	R	T		
			2	22	Capote White	B	T		
			4	18	Chilo Red	R	T		
			1	8	Chilo Red	B	T	grooved	
			20	84	Chilo Red	B	T		
			2	10	Chilo Red	B	T		int.
			3	28	Chilo Red	B	D		int.
			12	54	Chilo Red	B	D		int./ext.
			1	3	Michis P/O plain	R	T		
			2	34	Michis P/O plain	B	T	grooved	
			1	5	Michis P/O plain	B	T	shell-edge 1	
			1	10	Michis P/O plain	B	T	unidentified 1	
			1	22	Michis P/O washed	B	T	shell-back 3	
			1	4	Michis P/O washed	B	T	grooved	
			23	227	Michis P/O washed	B	T		
E100/N98	1	0-10cm	1	7	Papaya Orange	B	D		

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			126	518	Unknown (eroded)	B			
			1	4	Tusta Red	B	T	grooved	
			3	15	Tusta Red	B	T		
			3	13	Chilo Red	R	T		
			3	30	Chilo Red	B	T	grooved	
			11	57	Chilo Red	B	T		
			1	13	Chilo Red	R	D1a		int.
			1	6	Chilo Red	R	D1a		int./ext.
			1	6	Chilo Red	B	D		int.
			3	28	Chilo Red	B	D		int./ext.
			2	7	Chilo Red	B	D		ext.
			1	7	Chilo R/B	R	T		
			1	14	Colona Brown	R	D1a		int./ext.
			1	2	Colona Brown	B	T	grooved	
			2	6	Colona Brown	B	T		
			1	4	Colona Brown	B	D		
			1	33	Michis P/O	R	T		
			1	12	Paso Red	B	D		int./ext.
			4	20	Michis P/O	R	T		
			1	3	Michis P/O washed	B	T	grooved	
			1	3	Michis P/O plain	B	T		
			21	125	Michis P/O washed	B	T		
			3	75	Unknown Buff	B	T		
E100/98	2	10-20cm	88	318	Unknown (eroded)	B			
			1	9	Colona Brown	R	D5		
			2	7	Colona Brown	B	T		
			1	22	Monte R/B	R	T		
			50	80	Monte R/B	B	T	grooved	
			1	5	Bayo Brown	B	T	gouged	
			20	8	Tusta Red	B	T	fluted	
			3	75	Michis P/O	R	T		
			2	34	Michis P/O	B	T	grooved	
			26	213	Michis P/O	B	T		
			10	144	Unknown Buff	B	T		
			1	12	Paso Red	B	T		
			1	72	Michis P/O	L	T		
			1	45	Chilo Red	R	D1b		int.
			1	20	Chilo Red	R	D1a		int.
			1	24	Chilo Red	R	T		
			2	5	Chilo Red	R	T		
			6	22	Chilo Red	B	T	grooved	
			12	97	Chilo Red	B	T		int.
			8	52	Chilo Red	B	D		int./ext.
			24	124	Chilo Red	B	T		
			2	55	Bala Brown	B	D		int.
			1	3	Pino B/W	B	D		
			1	15	Michis P/O	B	T	grooved	
			1	2	Extranjero B/W	B	D		int./ext.
E100/N98	5		2	32	Monte R/B	B	T	zoned grooved	
			2	18	Tusta Red	B	T	zoned grooved	
			1	3	Tusta Red	B	T	gadrooned	
			1	5	Tusta Red	B	T	grooved	

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			3	16	Tusta Red	B	T		
			3	18	Cotan Red	B	T	grooved	
			3	16	Cotan Red	B	T		
			1	6	Papaya Orange	B	T		
			1	3	Papaya Orange	B	D		int./ext.
			1	26	Arroyo Buff	R	D2d		int./ext.
			11	82	Chilo Red	R	T		
			16	80	Chilo Red	B	T	grooved	
			5	30	Chilo Red	B	T	ribbed	
			2	16	Chilo Red	B	T	gadrooned	
			2	23	Chilo Red	B	T	zoned grooved	
			98	515	Chilo Red	B	T		
			1	30	Chilo Red	R	D1b	lip	int.
			1	23	Chilo Red	R	D1d		int./ext.
			1	3	Chilo Red	B	D		int./ext.
			1	22	Chilo Red	R	D5h		int./ext.
			3	44	Chilo Red	R	D1a		int./ext.
			2	11	Chilo Red	R	D1b		int./ext.
			1	5	Chilo Red	R	D1b		int./ext.
			1	25	Chilo Red	R	D1b		ext.
			6	85	Chilo Red	B	D		int.
			22	140	Chilo Red	B	D		int./ext.
			7	80	Michis P/O plain	R	T		
			7	45	Michis P/O plain	B	T	grooved	
			1	7	Michis P/O plain	B	T	shell-edge 2	
			57	403	Michis P/O plain	B	T		
			4	14	Michis P/O washed	B	T	grooved	
			1	2	Michis P/O washed	B	T	shell-edge 2	
			31	185	Michis P/O washed	B	T		
E100/N98	6		2	8	Cotan Red	R	T		
			1	6	Cotan Red	B	T	grooved	
			1	7	Cotan Red	B	T		
			1	6	Tusta Red	B	D		int./ext.
			1	8	Tusta Red	B	T	gadrooned	
			1	5	Tusta Red	B	T	zoned x-hatch	
			1	4	Tusta Red	B	T	grooved	
			3	17	Chilo Red	R	T		
			8	58	Chilo Red	B	T	grooved	
			4	43	Chilo Red	B	T	gadrooned	
			1	7	Chilo Red	B	T	zoned x-hatch	
			4	12	Chilo Red	B	T	fluted	
			3	18	Chilo Red	B	T	ribbed	
			35	188	Chilo Red	B	T		
			1	35	Chilo Red	R	D3		int./ext.
			1	8	Chilo Red	R	D1m		int.
			1	4	Chilo Red	R	D1c		int.
			3	17	Chilo Red	R	D1d		int.
			2	5	Chilo Red	R	D1d		ext.
			10	70	Chilo Red	B	D		int.
			15	88	Chilo Red	B	D		int./ext.
			2	12	Tusta Red	R	T		
			1	3	Tusta Red	B	T	fluted	

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			1	6	Tusta Red	B	T	grooved	
			1	3	Tusta Red	B	T		
			1	12	Salta Orange	B	T	fluted	
			1	7	Salta Orange	B	D		int./ext.
			1	4	Salta Orange	B	T		ext.
			4	15	Bayo Brown	B	D		int.
			2	6	Bayo Brown	B	T	grooved	
			1	7	Bayo Brown	B	T		
			12	52	Monte Buff	B	T	grooved	
			13	110	Unknown (eroded)	B	T		
			37	225	Michis P/O washed	B	T		
			2	14	Michis P/O washed	B	T	grooved	
			1	3	Michis P/O washed	B	T	gouged	
			3	10	Tepa R/B	B	T		
			1	6	Petacalapa Black	B	T	punctate/groove d	
			4	47	Chilo Red / Buff	R	T		
			46	188	Unknown (eroded)	B			
E100/N98	7		1	14	Cotan Red	B	T		
			1	4	Tusta Red	B	T	grooved	
			1	7	Chilo Red	R	D1a		
			11	68	Chilo Red	B	T		
			1	16	Chilo Red	B	D		int./ext.
			2	9	Salta Orange	B	T	gadrooned	
			1	2	Salta Orange	B	T		
			1	2	Bayo Brown	B	T		
			1	8	Monte Red / Buff	R	T		
			1	7	Tepa R/W	R	T		
			2	10	Tepa R/W	B	T		
			2	43	Chilo Red / Buff	R	T		
			1	10	Capote White	B	T		
			1	4	Michis Pink / Buff	R	T		
			5	32	Michis Pink / Orange	R	T	grooved	
			10	48	Michis Pink / Orange	B	T		
			1	4	Michis plain	B	T	grooved	
			3	18	Michis plain	B	T		
			1	3	Unknown (eroded)				
E100/N98	9		1	6	Papaya Orange	R	D1a	ground edge	
			1	10	Chilo Red	Lid			
			1	11	Bayo Brown	B	D		int./ext.
			1	8	Bayo Brown	B	D	base	int./ext.
			1	4	Bayo Brown	B	T		
			2	8	Capote White	B	D		int./ext.
			1	5	Chilo Red	R	D		int.
			1	3	Chilo Red	B	T	grooved	
			1	9	Chilo Red	B	T	gadrooned	
			1	2	Chilo Red	B	T		
			6	27	Unknown (eroded)				
			1	6	Monte R/B	B	T	grooved	
E101/N98	8		2	18	Chilo Red	B	T	grooved	
			2	10	Chilo Red	B	T		
			1	18	Chilo Red	B	D		int./ext.

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			3	17	Chilo Red	B	D		int.
			2	10	Tusta Red	R	T		
			1	8	Tusta Red	B	T	grooved	
			1	13	Tusta Red	B	T	fluted	
			1	4	Tusta Red	B	T	gadrooned	
			6	24	Tusta Red	B	T		
			2	25	Bayo Brown	B	D		
			4	43	Monte R/B	B	T	grooved	
			3	29	Michis P/O plain	B	T		
			10	58	Michis P/O washed	B	T		
E100/N102	1	0-10cm	78	354	Unknown (eroded)	B			
			1	120	Guamuchal	R	T		
			2	20	Paso Brown	B	T		
			1	6	Bala Brown	R	D1b		int.
			1	52	Bala Brown	B	D		int./ext.
			7	45	Paso Red	B	D		int.
			1	8	Paso Red	R	D1b		int.
			1	9	Paso Red	R	D1b		int./ext.
			1	25	Paso Red	R	D4		int./ext.
			1	2	Paso Red	R	T		
			7	53	Paso Red	B	T		
			1	14	Michis P/O washed	B	T	grooved	
			2	19	Michis P/O washed	B	T		
			4	29	Unknown Buff	B			
			1	6	Cotan Red	B	T	grooved	
			1	3	Cotan Red	B	T		
			1	2	Tusta Red	B	T	fluted	
			1	3	Tusta Red	B	T	grooved	
			1	4	Chilo Red	R	T		
			1	11	Chilo Red	B	T		
			1	11	Chilo Red	R	D1a		int.
			1	17	Chilo Red	R	D1d		int./ext.
E100/N102	2	10-20cm	1	4	Colona Brown	R	D2c		
			1	5	Colona Brown	B	T	incised/grooved	
			1	3	Colona Brown	B	T		
			1	5	Capote White	B	D		int.
			1	5	Salta Orange	R	T		
			1	3	Tusta Red	B	T		
			1	16	Michis P/O	R	T		
			12	124	Unknown Buff	B			
			5	25	Chilo Red R	B	D		int./ext.
			1	4	Chilo Red	R	B1d		int.
			2	10	Chilo Red	B	T	grooved	
			10	68	Chilo Red	B	T		
			34	171	Unknown (eroded)				
E100/N102	3	20-30cm	1	29	Arroyo Buff	R	D2b	handle	
			1	10	Arroyo Buff	R	D1		
			15	80	Chilo Red	B	T		
			2	3	Chilo Red	B	D		int./ext.
			2	24	Michis P/O	B	T		
			1	9	Michis P/O	R	D1a		int./ext.
			9	60	Michis P/O	B	D		int./ext.

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			15	81	Michis Pink / Buff	B	T		
			1	3	Tusta Red	B	T		
			2	6	Colona Brown	B	D		int.
			2	7	Colona Brown	B	D		int./ext.
E100/N102	4		1	3	Bayo Brown	B	T	gadrooned	
			1	3	Bayo Brown	B	T		
			3	17	Chilo Red	R	T		
			5	28	Chilo Red	B	T		
			1	4	Chilo Red	B	D		int.
			1	20	Michis P/O plain	B	T	grooved	
			2	8	Michis P/O washed	B	T		
			8	33	Michis P/O	B	T		
E100/N102	5		2	2	Tusta Red	R	T		
			1	1	Chilo Red	R	T		
			2	8	Chilo Red	B	T	grooved	
			8	18	Chilo Red	B	T		
			1	2	Chilo Red	B	D		int.
			3	17	Chilo Red	B	D		int./ext.
			4	9	Michis P/O	R	T		
			1	3	Michis P/O	B	T	shell-edge 2	
			1	3	Michis P/O	B	T	grooved	
			10	38	Michis P/O	B	T		
			7	17	Michis P/O plain	B	T		
			1	5	Cotan Red	B	T	fluted	
			5	7	Unknown (eroded)	B			
E100/N102	6a		6	35	Chilo Red	B	T		
			2	6	Chilo Red	B	D		int./ext.
			2	5	Tusta Red	B	T		
			1	4	Unslipped	B	T	shell-back 3	
			12	55	Unknown (eroded)	B	T		
E100/N102	6b		2	16	Tusta Red	B	T		
			2	5	Cotan Red	B	T		
			7	20	Chilo Red	B	T		
			1	3	Bayo Brown	B	T		
			7	30	Michis P/O	B	T		
			2	8	Michis P/O	B	T	grooved	
			14	37	Unknown (eroded)	B	T		
E100/N102	7	80-100cm	1	9	Chilo Red	B	T		
			1	2	Bayo Brown	B	T		
			1	3	Tusta Red	R	T		
			1	3	Tusta Red	B	D		int.
E100/N104	1		1	8	Chilo Red	R	T		
			16	105	Chilo Red	B	T		
			18	113	Chilo Red	B	D		int./ext.
			5	37	Chilo Red	B	D		int.
			3	8	Chilo Red	B	D		ext.
			3	20	Michis P/O	R	T		
			2	8	Michis P/O plain	B	T	grooved	
			1	8	Michis P/O washed	B	T	grooved	
			23	166	Michis P/O washed	B	T		
			1	11	Colona Brown	R	D5b		
			1	17	Tusta Red	B	T		

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			1	3	Xochiltepec White	B		eroded/rare	
			78	290	Unknown (eroded)	B			
E100/N106	1		43	352	Michis P/O washed	B	T		
			4	28	Michis P/O	R	T		
			2	22	Michis P/O	B	T	shell-edge 1	
			3	16	Michis P/O washed	B	T	grooved	
			2	68	Unknown Buff	B			
			1	32	Paso Red	R	D1a		int.
			2	5	Paso Red	R	D		int.
			1	6	Paso Red	R	D1a		int/ext.
			1	5	Paso Red	R	D1b		ext.
			6	42	Paso Red	B	D		int.
			210	780	Unknown (eroded)	B			int.
			1	3	Monte R/B	R	T		
			2	18	Colona Brown	B	D		int.
			1	8	Bayo Brown	B	T		
			3	20	Tusta Red	R	T		
			2	4	Tusta Red	B	T	grooved	
			2	8	Tusta Red	B	T	gadrooned	
			4	35	Tusta Red	B	T		
			2	30	Cotan Red	R	T		
			1	5	Gallo P/R	B	D		int.
			3	14	Chilo Red	R	T		
			2	12	Chilo Red	B	T	grooved	
			35	198	Chilo Red	B	T		
			1	18	Chilo Red	R	D1b		int.
			9	30	Chilo Red	B	D		int.
			1	7	Chilo Red	B	D	grooved	int./ext.
			8	55	Chilo Red	B	D		int./ext.
			12	62	Chilo Red	B	D		ext.
E100/N106	2		1	8	Colona Brown	R	D1a		
			1	8	Colona Brown	B	T	grooved	
			1	5	Chilo R/B	B	T	grooved	
			1	12	Michis P/B	B	T	grooved	
			2	10	Bayo Brown	B	T		
			1	4	Salta Orange	B	D		int.
			1	4	Tusta Red	B	T	gadrooned	
			1	10	Tusta Red	B	T	grooved	
			1	3	Tusta Red	B	T	ribbed	
			2	8	Michis P/O	R	T		
			1	2	Michis P/O	B	T	shell-edge 1	
			6	35	Michis P/O	B	T	grooved	
			3	6	Michis P/O washed	B	T		
			5	14	Unknown Buff	B	T		
			1	3	Chilo Red	R	D1c		int.
			1	6	Chilo Red	R	D1a		int.
			4	16	Chilo Red	B	D		int.
			1	8	Chilo Red	R	D1a		
			8	66	Chilo Red	B	D		int./ext.
			1	6	Chilo Red	B	T	shell-edge 2	
			15	110	Chilo Red	B	T		
			46	87	Unknown (eroded)	B			

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
E100/N116	3	40-60cm	2	30	Monte R/B	B	T	grooved	
			1	26	Tepa R/B	B	T		
			1	8	Salta Orange	B	T	gadrooned	
			1	6	Salta Orange	B	T	grooved	
			1	5	Salta Orange	B	T		
			1	5	Tepa R/W	B	T	grooved	
			1	2	Tusta Red	B	T		
			5	64	Bayo Brown	B	D		int./ext.
E100/N116	5	80-100cm	2	4	Capote White	B	T		
			1	16	Tusta Red	B	D		int./ext.
E101/N124	1	0-20cm	120	495	Unknown (eroded)	B			
			1	28	Arroyo Buff	B	T		
			1	20	Tusta Red	B	T	ribbed	
			2	5	Tusta Red	B	T	grooved	
			2	5	Tusta Red	B	T		
			1	8	Tepa R/W	B	T		
			1	5	Colona Brown	B	T	grooved	
			5	30	Colona Brown	B	T		
			2	8	Cotan Red	B	T		
			1	23	Chilo Red	R	T		
			1	3	Chilo Red	B	T	grooved	
			1	15	Chilo Red	B	T	fluted/grooved	
			1	4	Chilo Red	B	T	fluted	
			36	165	Chilo Red	B	T		
			1	7	Chilo Red	R	D1a		int.
			5	26	Chilo Red	B	D		int.
			1	6	Chilo Red	R	D1b		int./ext.
			1	4	Chilo Red	B	D		int./ext.
			3	15	Chilo Red	B	D		int./ext.
			1	7	Michis P/O	R	T		
			9	75	Michis P/O washed	B	T	grooved	
			1	2	Michis P/O washed	B	T	shell-edge	
			47	295	Michis P/O washed	B	T		
			2	40	Unknown Buff	B			
			1	8	Paso Red	R	D1a		
			1	20	Paso Red	R	D1b		
			1	5	Paso Red	R	D1d		
			2	37	Paso Red	B	T		
E101/N124	2	20-40cm	1	3	Cotan Red	R	T	grooved	
			1	4	Cotan Red	B	T	gadrooned	
			4	25	Cotan Red	B	T	gouged	
			1	5	Cotan Red	B	T	ribbed	
			1	8	Cotan Red	B	T		
			2	28	Tusta Red	R	T	grooved	
			1	8	Tusta Red	B	T	gadrooned	
			1	13	Salta Orange	B	T	gadrooned	
			2	15	Bayo Brown	B	T		
			1	6	Paso Red	B	T		
			2	48	Arroyo Buff	R	D1d		
			1	18	Arroyo Buff	R	D1b		
			3	131	Arroyo Buff	B	D		
			10	77	Chilo Red	R	T		

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			1	7	Chilo Red	B	T	grooved	
			1	2	Chilo Red	B	T	fluted	
			80	651	Chilo Red	B	T		
			4	72	Chilo Red	R	D1b		int.
			1	10	Chilo Red	R	D1b	notched	int.
			3	24	Chilo Red	R	D1d		int.
			1	10	Chilo Red	R	D1c		int.
			26	278	Chilo Red	B	D		int.
			1	4	Chilo Red	R	D1c		int./ext.
			2	19	Chilo Red	R	D1b		int./ext.
			11	102	Chilo Red	B	D		int./ext.
			4	20	Michis P/O	R	T		
			3	30	Michis P/O	B	T	grooved	
			3	83	Michis P/O	B	T	gouged	
			1	5	Michis P/O washed	B	T	grooved	
			29	458	Unknown Buff	B	T		
			39	268	Michis P/O washed	B	T		
			285	1110	Unknown (eroded)	B			
			1	17	Michis P/B	R	T		
			1	12	Guamucel plain	R	T		
			1	28	Mendez R/B	R	T		
			1	5	Colona Brown	R	T		
			4	37	Colona Brown	B	D		
			2	28	Chilo R/B	R	T		
			1	5	Chilo R/B	B	T		
E101/N124	3	40-60cm	90	357	Unknown (eroded)				
			2	5	Colona Brown	R	T		
			3	14	Colona Brown	R	D1a		int./ext.
			11	95	Colona Brown	B	T		
			1	4	Colona Brown	B	D		int.
			1	2	Capote White	B	T		
			1	8	Tepa Black on White	R	T		
			2	45	Michis P/O	R	T		
			1	5	Michis P/O washed	B	T	grooved	
			4	28	Michis P/O	B	T	grooved	
			58	395	Michis P/O washed	B	T		
			74	565	Unknown (eroded)	B			
			1	3	Colona Brown	B	D	grooved	
			1	4	Tusta Red	R	T		
			2	14	Tusta Red	B	T	fluted	
			1	15	Tusta Red	B	T	gadrooned	
			3	25	Tusta Red	B	T		
			1	34	Cotan Red	R	T		
			1	5	Cotan Red	B	T	grooved	
			2	10	Papaya Orange	B	T	grooved	
			7	52	Papaya Orange	B	T		
			1	12	Arroyo Buff	B	T		
			7	58	Chilo Red	R	T		
			2	7	Chilo Red	B	T	grooved	
			1	7	Chilo Red	B	T	ribbed	
			1	8	Chilo Red	B	T	fluted	
			1	16	Chilo Red	B	T	shell- back 3	

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			81	373	Chilo Red	B	T		
			1	18	Chilo Red	R	D1d		int.
			1	2	Chilo Red	R	D1l		int.
			6	67	Chilo Red	B	D		int.
			1	12	Chilo Red	R	D1b		int./ext.
			1	7	Chilo Red	R	B2b		int./ext.
			1		Chilo Red	B	D	fluted	int./ext.
			4	35	Chilo Red	B	D		int./ext.
			1	17	Chilo Red	R	D1a		ext.
			1	12	Chilo Red	B	D		ext.
E101/N124	4	60-80cm	2	8	Papaya Orange	R	T		
			1	5	Tusta Red	R	T		
			2	4	Tusta Red	B	T	fluted	
			1	7	Tusta Red	B	T		
			1	15	Tepa R/W	R	T		
			1	3	Tepa R/W	B	T	grooved	
			1	25	Monte R/B	R	T		
			2	43	Monte R/B	B	T	grooved	
			1	8	Colona Brown	B	T		
			1	4	Colona Brown	B	D		
			3	27	Chilo Red R/B	R	T		
			1	10	Capote White	B	T	fluted	
			1	15	Paso Red	R	D1a		
			1	13	Paso Red	R	D4h		
			1	5	Chilo Red	R	T	miniature vessle	
			43	240	Unknown (eroded)				
			3	32	Michis P/O	R	T		
			1	5	Michis P/O	B	T	grooved	
			28	320	Michis P/O washed	B	T		
			23	338	Unknown Buff	B	T		
			1	34	Chilo Red	R	D5b		int.
			2	21	Chilo Red	R	D3b		int.
			2	23	Chilo Red	R	D1c		int.
			5	85	Chilo Red	B	D		int.
			1	14	Chilo Red	R	D5a		int./ext.
			5	33	Chilo Red	B	D		int./ext.
			4	75	Chilo Red	R	T		
			2	30	Chilo Red	B	T	grooved	
			40	368	Chilo Red	B	T		
E101/N124	5	80-100cm	1	34	Arroyo Buff	B	D	base	
			1	14	Tusta Red	R	T		
			1	5	Salta Orange	R	D1d		int.
			1	6	Salta Orange	R	T		
			1	15	Monte R/B	B	T	cross-hatching	
			1	10	Colona Brown	R	D1a		int./ext.
			6	173	Chilo Red	R	T		
			4	30	Chilo Red	B	T		
			1	32	Chilo Red	R	D2b		int.
			1	17	Chilo Red	R	D5b		int.
			2	65	Chilo Red	B	T		int.
			1	11	Chilo Red	R	B2d		int./ext.
			1	7	Chilo Red	R	D5b		int./ext.

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			2	30	Chilo Red	B	D	grooved	int./ext.
			3	51	Chilo Red	B	D		int./ext.
			2	52	Chilo Red	B	D		ext.
			2	48	Michis P/O plain	R	T		
			1	28	Michis P/O plain	B	T	grooved	
			30	137	Michis P/O	L	T		
			8	123	Michis P/O washed	B	T		
			2	8	Unknown Buff	B		lids	
			6	241	Unknown Buff	B	T		
			4	61	Unknown (eroded)	B	T		
E101/N124	6	100-120cm	1	16	Arroyo Buff	R	D1b		int.
			1	9	Arroyo Buff	B	D	applique spikes	
			1	18	Arroyo Buff	R	D1c		int.
			1	2	Tusta Red	R	T		
			2	2	Tusta Red	B	T	grooved	
			1	11	Tusta Red	B	D		int.
			72	495	Unknown (eroded)	B			
			1	2	Salta Orange	R	T		
			2	8	Bayo Brown	R	T		
			1	22	Monte R/B	B	T		
			1	5	Monte R/B	B	T	shell-back	
			1	18	Tepa R/W	R	T		
			1	13	Gallo P/R	R	D5l		
			2	16	Colona Brown	R	D3f		
			1	14	Colona Brown	R	D1c		
			1	7	Colona Brown	B		lid	
			1	4	Capote White	B	T	ribbed	
			3	24	Capote White	B	T		
			6	102	Michis P/O plain	R	T		
			1	9	Michis P/O plain	B	T	grooved	
			1	7	Michis P/O plain	B	T	gouged	
			1	21	Michis P/O washed	B	T	grooved	
			4	195	Michis P/O washed	L	T	solid	
			15	306	Unknown Buff	B	T		
			56	616	Michis P/O washed	B	T		
			1	41	Paso Red	R	T		
			7	60	Chilo Red	R	T		
			55	941	Chilo Red	B	T		
			2	24	Chilo Red	R	D3f		int.
			3	81	Chilo Red	R	D4a		int.
			3	93	Chilo Red	R	D1a		int.
			1	8	Chilo Red	R	D1b		int.
			2	20	Chilo Red	R	D1a		int./ext.
			1	26	Chilo Red	R	B1a		int./ext.
			30	385	Chilo Red	B	D		
E101/N124	7	120-140cm	2	12	Papaya Orange	B	T		
			1	5	Chilo Red	R	T		
			2	12	Chilo Red	B	T	grooved	
			16	77	Chilo Red	B	T		
			3	27	Chilo Red	B	D		int.
			3	10	Chilo Red	B	D		int./ext.
			4	34	Unknwon Buff	B			

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			1	4	Colona Brown	B	T		
			1	8	Michis P/O plain	R	T		
			1	4	Michis P/O plain	B	T	grooved	
			1	3	Michis P/O plain	B	T	gouged	
			1	8	Michis P/O washed	B	T	gouged	
			1	40	Michis P/O washed	B	T	grooved	
			16	90	Unknown (eroded)	B	T		
E101/N124	8	140-160cm	1	6	Arroyo Buff	R	D1a		int.
			1	5	Arroyo Buff	R	T		
			1	44	Papaya Orange	R	D1l	grooved	
			1	5	Tusta Red	B	T	grooved	
			1	6	Tusta Red	B	T		
			1	20	Salta Orange	R	T	fluted	
			2	36	Monte R/B	B	T	grooved	
			1	8	Arroyo Buff	B		tube	
			1	3	Capote White	B	T	fluted	
			1	18	Chilo Red	R	T		
			1	59	Colona Brown	R	D5b		
			1	14	Colona Brown	R	T		
			2	7	Colona Brown	B	T	gadrooned	
			1	3	Colona Brown	B	T	fluted	
			2	18	Colona Brown	B	T		
			1	58	Chilo Red	R	T	large	
			3	20	Chilo Red	R	T		
			4	29	Chilo Red	B	T	grooved	
			1	6	Chilo Red	B	T	fluted	
			58	584	Chilo Red	B	T		
			1	36	Chilo Red	R	D5l		int.
			1	17	Chilo Red	R	D4i		int.
			12	106	Chilo Red	B	D		int.
			3	57	Chilo Red	R	D1a		int./ext
			1	12	Chilo Red	R	D1i		int./ext
			1	40	Chilo Red	R	D	grooved	
			16	240	Chilo Red	B	D		int./ext.
			6	50	Michis P/O	R	T		
			1	4	Michis P/O	B	T	shark skin	
			4	24	Michis P/O	B	T	grooved	
			1	4	Michis P/O	B	T	shell-edge 3	
			57	1121	Unknown Buff	B	T		
			23	212	Michis P/O washed	B	T		
			5	18	Unknown (eroded)				
E101/N124	9	160-180cm	15	123	Unknown (eroded)	B			
			3	43	Colona Brown	B	T	grooved	
			2	13	Colona Brown	B	T		
			1	5	Colona Brown	B	D		int./ext.
			1	7	Capote White	B	D	grooved	
			2	30	Salta Orange	R	T		
			1	5	Salta Orange	R	T	zoned x-hatch	
			1	7	Bayo Brown	R	T		
			1	102	Monte R/B	R	T	grooved	
			2	45	Michis P/O	R	T		
			2	33	Michis P/O plain	B	T	grooved	

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			2	22	Michis P/O plain	B	T		
			5	27	Michis P/O washed	B	T		
			25	273	Unknown Buff	B			
			1	4	Arroyo Buff	B	T		
			1	5	Papaya Orange	B	T	grooved	
			3	14	Papaya Orange	B	T		
			1	6	Papaya Orange	B	D		int.
			2	6	Papaya Orange	B	D		int./ext.
			1	9	Gallo P/R	B	T	grooved	
			2	14	Chilo Red	R	T		
			1	10	Chilo Red	B	T	gadrooned	
			1	2	Chilo Red	B	T	fluted	
			24	253	Chilo Red	B	T		
			1	18	Chilo Red	R	D1d		int.
			1	4	Chilo Red	R	D1d		int./ext.
			4	39	Chilo Red	B	D		int./ext.
			2	30	Chilo Red	B	D		ext.
E101/N124	10	180-200cm	1	24	Paso Red	B	T		
			1	10	Paso Red	R	D1b		int.
			3	30	Colona Brown	B	T		
			1	6	Capote White	B	T		
			1	16	Tusta Red	R	T		
			1	6	Tusta Red	B	T	grooved	
			1	45	Papaya Orange	B	D		int./ext.
			2	30	Papaya Orange	B	T		
			2	41	Chilo Red	R	D1d		int./ext.
			1	25	Chilo Red	R	D4g	fluted	
			34	388	Chilo Red	B	T		
			5	68	Chilo Red	B	D		int.
			10	155	Chilo Red	B	D		int./ext.
			4	22	Michis P/O	R	T		
			2	33	Michis P/O	B	T	grooved	
			1	12	Michis P/O	B	T		
			26	262	Michis P/O	B	T		
			2	81	Michis P/B	L	T	hollow	
			13	162	Unknown Buff	B	T		
E101/N124	11	200-220cm	1	12	Papaya Orange	R	D1m		
			1	18	Chilo Red	R	T		
			1	8	Chilo Red	B	T	grooved	
			9	117	Chilo Red	B	T		
			1	44	Chilo Red	R	D3i		int.
			1	112	Chilo Red	R	D4l		int.
			1	14	Chilo Red	R	D1a		int.
			1	68	Chilo Red	B	D	base	int.
			5	76	Chilo Red	B	D		int.
			1	6	Chilo Red	R	D1a		int./ext.
			4	41	Michis P/O plain	B	T		
			1	12	Michis P/O plain	L			
			1	6	Michis P/B	B	T	grooved	
			2	26	Colona Brown	B	D		int./ext.
			1	10	Colona Brown	B	T	gadrooned	
			4	82	Colona Brown	B	D		int.

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
			2	18	Chilo R/B	B	T		
			1	232	Chilo Red	B	T	(partial tecomate)	
E121/N99	1	0-20cm	20	43	Unknown (eroded)	B			
			1	6	Capote White	B	T	fluted	
			1	4	Salta Orange	B	T	gadrooned	
			1	3	Salta Orange	B	T	ribbed	
			1	3	Tusta Red	B	T	grooved	
			2	5	Chilo Red	B	T	gadrooned	
			1	3	Michis P/O	B	T		
			1	4	Chilo Red	R	T		
			3	8	Chilo Red	B	T		
			8	24	Chilo Red	B	D		int./ext.
			1	20	Michis P/O washed	B	T		
E121/N99	2	20-40cm	1	4	Petacalapa Black	B	T	grooved, punctate	
			2	5	Colona Brown	B	T		
			6	33	Chilo Red	B	T		
			1	3	Chilo Red	B	D	grooved	int./ext.
			1	2	Chilo Red	B	D		int./ext.
			1	14	Chilo Red	B	D	dish	int.
			1	6	Michis P/O washed	B	T		
			2	8	Michis P/O	B	T	grooved	
			4	20	Unknown (eroded)	B			
E121/N99	3	40-60cm	2	18	Plain	B	T		
			1	5	Plain	R	T		
			1	8	Bayo Brown	B	D	cross hatching	int./ext.
			1	15	Bayo Brown	B	T	grooved	
			1	7	Chilo Red	R	T		
			1	3	Chilo Red	B	T	grooved	
			2	35	Chilo Red	B	D		int./ext.
			3	8	Chilo Red	B	D		ext.
			4	17	Plain	B	T	gouged	
			1	4	Tusta Red	B	T		
			2	11	Capote White	B	T		
E121/N99	4	60-80cm	3	15	Bayo Brown	B	T		
			1	6	Bayo Brown	B	D	base	ext.
			1	5	Chilo Red	B	T	grooved	
			1	8	Chilo Red	B	T	gouged	
			3	4	Chilo Red	B	T		
			1	4	Tusta Red	R	T		
			1	7	Salta Orange	B	D	base	
			1	6	Colona Brown	B	D		ext.
			1	26	Michis P/O	R	T		
			1	4	Michis P/O	B	D		int./ext.
			3	53	Michis P/O	B	T		
			2	16	Papaya Orange	B	D		int./ext.
E121/N99	5	80-100cm	3	28	Colona Brown	B	T	Dimple Base	ext.
E121/N99	6	100-110cm	1	2	Capote White	B	D		int./ext.
			1	3	Tusta Red	B	D		
			1	3	Salta Orange	B	T		
			1	2	Cotan Red	B	T		

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
E121/N99	7	110-130cm	1	20	Monte R/B	B	T	grooved	
			1	3	Tepa R/W	B	T		
			3	11	Bayo Brown	B	T	brushed	
			2	6	Bayo Brown	B	T	grooved	
E121/N99	9	150-170cm	1	10	Capote White	B	T	fluted	
			1	16	Chilo Red	B	T	gadrooned base	
A7#2	1		1	8	Papaya Orange	B	D	grooved, small bowl	
			2	13	Tusta Red	B	T	grooved	
			2	14	Chilo Red	R	T		
			1	5	Chilo Red	B	T	gadrooned	
			2	18	Chilo Red	B	T		
			1	3	Michis P/O	B	T	shell-edge 2	
			3	14	Michis P/O	B	T		
			4	19	Unknown Buff	B	T		
			3	10	Unknown (eroded)	B			
A7#2	2	20-40cm	5	21	Unknown (eroded)	B			
			5	16	Chilo Red	B	T		
			2	11	Arroyo Buff	B	D		int./ext.
A7#2	3	40-60cm	2	20	Monte R/B	B	T	grooved	
			2	12	Tusta Red	B	T		
			2	2	Unknown	B	T		
A7#2	4	60-80cm	1	2	Tusta Red	B	T	fluted	
			1	3	Bayo Brown	B	T		
			1	2	Chilo Red	B	T	fluted	
			2	5	Chilo Red	B	D		int.
			1	8	Plain	B	T	grooved	
			4	7	Plain	B	T		
B15#1	1	0-20cm	2	28	Arroyo Buff	R	D1a		
			1	7	Tusta Red	R	D1c		int./ext.
			3	4	Tusta Red	B	D		int./ext.
			1	7	Monte R/B	B	T		
			1	6	Chilo Red	B	T	gadrooned	
			14	42	Chilo Red	B	T		
			1	10	Chilo Red	R	D3f		
			1	3	Chilo Red	B	D		int.
			5	12	Chilo Red	B	D		int./ext.
			3	11	Michis P/O	R	T		
			1	5	Michis P/O	B	T	gouged	
			1	3	Michis P/O	B	T	grooved	
			7	18	Michis P/O washed	B	T		
			4	15	Unknown Buff	B	T		
			32	83	Unknown (eroded)	B			
B15#1	2	20-40cm	1	6	Chilo R/B	R	T		
			1	3	Michis P/O	R	T		
			1	6	Chilo Red	B	D		int./ext.
			1	3	Chilo Red	B	D		int.
B15#1	3	40-60cm	2	10	Tusta Red	B	T	gadrooned	
			1	3	Colona Red	B	T		
			1	6	Chilo Red	B	T		
			1	15	Michis Plain	B	T		
B15#1	4	60-80cm	1	3	Cotan Red	B	D	base	

Unit	Level	Depth	Count	Weight	Type	R/B/L	Form	Décor	Slip
Unit 4	1	0-20cm	5	28	Unknown (eroded)	B			
Unit 4	2	20-40cm	3	20	Bayo Brown	B	T		
			1	6	Bayo Brown	B	T	grooved	
			1	8	Cotan Red	R	T		
Unit 4	3	40-60cm	1	16	Tusta Red	B	T		
			1	10	Tusta R/W	B	T		
Unit 4	4	60-80cm	1	3	Salta Orange	B	T		
			1	5	Bayo Brown	B	T	grooved	
			1	13	Bayo Brown	B	T		
			3	26	Chilo Red	B	T		
			1	4	Chilo Red	B	T	fluted	
Unit 7	1	0-20cm	12	98	Unknown (eroded)	B			
Unit 7	2	20-40cm	1	22	Michis P/O plain	R	T		
			7	70	Michis P/O plain	B	T		
			1	38	Chilo Red	R	D5a		
			2	16	Chilo Red	B	D		int./ext.
			2	18	Chilo Red	B	T		
			2	46	Chilo Red	B	D		int.
			48	358	Unknown (eroded)	B	T		
			1	5	Tusta Red	R	D1b		
			2	15	Tusta Red	B	T		
			1	5	Tusta Red	B	T	grooved	
Unit 7	3	40-60cm	1	20	Chilo Red	R	T		
			9	48	Chilo Red	B	T		
			1	12	Chilo Red	R	D1a		
			1	10	Chilo Red	B	D		int.
			3	20	Chilo Red	B	D		int./ext.
			3	24	Michis P/O plain	B	T	grooved	
			6	38	Michis P/O washed	B	T		
			1	3	Bayo Brown	B	T	grooved	
			26	160	Unknown (eroded)	B			
Unit 7	4	60-80cm	1	9	Michis P/O	B	T	grooved	
			5	35	Michis P/O	B	T		
			1	2	Chilo Red	B	D		int./ext.
			1	6	Michis Plain	B	D	grooved	
			4	21	Unknown	B	T		
Unit 7	5	80-100cm	1	19	Chilo Red	R	D1c		
			4	20	Unknown red	B	D		
			7	75	Unknown (eroded)	B			
Unit 2	1		2	12	Unknown (eroded)				
			1	1	Extranjero B/W	B	D		
			1	9	Tepa R/W	B	T		
			1	9	Chilo Red	B	T	gadrooned	
			1	2	Chilo Red	B	T		
			1	9	Chilo Red	B	D		int.
			3	17	Michis P/O	B	T		
			1	2	Unknown Buff	B	T		
Unit 2			2	6	Unknown (eroded)	B	T		
			2	5	Tusta Red	B	T		