SOCIAL COMPLEXITY IN FORMATIVE MESOAMERICA: A HOUSE-CENTERED APPROACH

By

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To my parents
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This study investigates how Middle Formative period societies in Mesoamerica became complex via multiple trajectories of social processes. It focuses on the analysis of social practices engaged by corporate agents that encouraged or discouraged the emergence and development of social hierarchy. The study of the emergence of social complexity has been dominated by the macro-scale analysis of societies concerned with similarities among them as a means towards classifying them into evolutionary stages. However, these assumptions are not supported by archaeological data from Middle Formative centers. I argue that to better understand the emergence of social complexity in the Middle Formative, analyses must encompass the archaeological evidence for variation in the manifestations of social complexity, rather than assume homogeneity or some inevitable trajectory towards centralized hierarchy.

My study focuses on investigating microscale practices to reveal how societies became complex over time through multi-linear trajectories. For that purpose, I analyze the variability of social practices and processes of social differentiation by employing practice theories and a corporate unit of agency, namely, the Lévi-Straussian maison or house. I conducted archaeological fieldwork and laboratory research at the site of Santa
Cruz Tayata in the Mixteca Alta of Mexico to gather data and analyzed them to discern how strategic actions of house-based social agents may have structured social conditions. I then compare the data on house-centric corporate practices there with those from other Middle Formative centers in the Central Highlands of Mexico and the Valley of Oaxaca to ascertain similarities and differences in processes of social differentiation.

Through this comparative analysis of house practices among major Formative societies in Mesoamerica, I conclude that centralization of power and evolutionary trajectories are not inevitable for social transformations. Rather, corporate agents among those societies strategically engaged in practices that discouraged emergent hierarchy. My study contributes to anthropological theory by presenting a case study of how societies become complex through a variety of social processes created as the result of social practices and informed actions of corporate agents.
CHAPTER 1
INTERPRETATIONS OF COMPLEX SOCIETIES IN FORMATIVE MESOAMERICA

The rise of social complexity has long been a major focus of anthropology (e.g., Childe 1951; Flannery 1972; Fried 1967; Johnson and Earle 1987; Sahlins and Service 1960; Sanders and Webster 1978; Service 1962; Steward 1955). In Mesoamerica, one of the six recognized places in the world where pristine states emerged (Harris 1977), ample archaeological evidence of long occupancy encouraged the discussion of social complexity especially at the state-level (e.g., Blanton 1978; Sanders and Nichols 1988; Sanders, Parsons, and Santley 1979; Sanders and Price 1968). The study of complex societies in Mesoamerica has been dominated by neo-evolutionary theories (e.g., Sanders and Price 1968; Spencer and Redmond 2004), and the origin and development of social inequality has been analyzed by archaeological variables associated with specific stages of an evolutionary framework. Mesoamerican societies were categorized into societal types, based on the assumption that as the maximal unit of analysis, the society as a whole evolves from simple to complex. Also, centralization of power was considered inevitable for any social transformations leading from one evolutionary stage to the next. This macro-scale analysis of societies focusing on similarities as a means towards classifying them into evolutionary stages (e.g., band, tribe, chiefdom, state) has been the basis for interpreting the level of social complexity in different periods.

The Middle Formative period (900-500 B.C.) has been the focus of research to analyze early stages of cultural evolution because archaeological data dated to this period reveal early manifestations of social differences across Mesoamerica. However, the assumptions of totalitarian regimes and a unilinear trajectory of societal transformation by neo-evolutionists have been criticized (as detailed in Chapter 2).
Furthermore, these assumptions fail to represent archaeological records from Middle Formative centers. I suggest that to better understand the emergence of social complexity in the Middle Formative period, the analysis must encompass variation in the manifestations of social complexity, rather than assume homogeneity or some inevitable trajectory towards centralized hierarchy. This requires that the unit of analysis shift from society as a whole to smaller entities that would exhibit variation both within and between sites or regions. I further suggest it is necessary to focus on historical processes rather than evolutionary stages as taxonomic categories. Finally, a focus on variability in historical processes should allow for the presence of social structures or processes that impeded, as well as facilitated, the emergence of socio-political hierarchies in Middle Formative societies.

All of these methodological shifts away from the principles of neo-evolutionism require a completely different theoretical approach. Theories of Practice (e.g., Bourdieu 1977; Giddens 1979; Ortner 1984) allow for an analytical focus on the strategic actions of knowledgeable agents and their material consequences. As Brumfiel (2000:251) argued, it forces the archaeologist to look for variation, and is anti-classificatory. It is also a means of bridging the micro-scale of practices to the macro-scale of social institutions and long-term historical structures. Since the actions and intentions of individual agents are difficult to discern in the archaeological record, “agency” in my research is modeled in terms of long-lived property-owning corporate groups, specifically “houses” as first delineated in anthropology by Claude Lévi-Strauss (1982, 1983). Unlike “households,” social houses are entities that are “in history” and they “make history” (Gillespie 2007:40). Houses as corporate agents engage in practices
whereby they create relationships among the members within a house, including across generations, and relationships with other houses. These relationships, which may both generate or impede political centralization over time, include feasting activities, exchange activities, production activities, architectural modifications, and other practices that have high archaeological visibility.

Analysis of social houses in Middle Formative regional centers may reveal the intentions and consequences of collective actions of these groups over time, some of which can be discerned as the result of competition for power and status within and between houses. The combination of practice theories and corporate agency enables me to analyze how social differentiation occurred through multiple trajectories within a community over time.

Because this study emphasizes variation, it encompasses a comparison of three Middle Formative centers in western (non-Maya) Mesoamerica: Chalcatzingo, San José Mogote, and Santa Cruz Tayata (Table 1-1). These three sites are significant in their role as prominent political centers—identified in the neo-evolutionary literature as “chiefdoms” in their different regions. They are also interesting because of the variation in social practices among houses that they reveal. Finally, they are important to my research to argue that centralization is not always inevitable for social transformations and that societies do not always follow a series of steps from one to the next in order to reach the top of the ladder, the state. This is because all three of these centers declined in size and influence at the beginning of the subsequent Late Formative period (c. 500 BC). That is, they all collapsed—they didn’t make it to the next level. For this reason, a comparative analysis of social processes among these contemporary (and historically
related) socio-political centers, focusing on similarities and differences in their mechanisms of social differentiation, will form a contribution to Mesoamerican studies and to the understanding of the emergence of complex ranked societies more generally.

In sum, in this comparative study I focus on understanding how Middle Formative societies became complex through multiple trajectories by analyzing corporate practices that encouraged or discouraged the emergence and development of social hierarchy. I argue that “social complexity” is not a category or a state of being that a society as a whole may or may not attain on an evolutionary trajectory, but a conceptual tool that may subsume a variety of social forms and processes of social change.

**Concepts of Social Complexity and Hierarchy**

The concept of “complexity” is thus a key issue of this study. The notion of human history as being a story of evolution from simple to complex is strongly embedded in Western thought as a whole, and thus we automatically assume a fundamental linkage between evolution and complexity. Complex society has long been studied in numerous disciplines as the accessible and delineated manifestation of social complexity, and archaeologists established models and theories within evolutionary trajectories to explore when and how this complexity emerged in a given society (e.g., Arnold 1996a; Earle 1991; Feinman and Marcus 1998; Johnson and Earle 2000). In most cases, the appreciation for variations among archaeological manifestations has been pushed aside in order to pursue more-narrowly defined models and universalized definitions. Accordingly, the study of social complexity tends to remain at the level of socio-political organization (as a totality) and focuses primarily on the evidence of formalized and centralized social hierarchies. Mesoamerican archaeologists often use the term “social complexity” to indicate the maturity of society which has been judged by the presence of
archaeological markers of the elites’ practices. For example, in cultural evolution, monumental architecture is taken as a clear indicator of social complexity because monumentality indicates a centralized authority that can amass and control a large labor force (Feinman and Neitzel 1984; Feldman 1987; Johnson and Earle 1987). However, monumentality is just one indicator of social condition, and there are many Formative sites which suggest a high degree of complexity but have little evidence of monumentality. I would argue that giving priority to certain variables for explaining the definition of social complexity is misleading. In this case, what needs to be focused on is why monumental architecture was built in certain societies in the course of social transformations. Classifying available factors and variables based on the concept of evolution ignores the possibility of different expressions of complexity.

Historically, the linkage between complexity and evolution can be traced back from 19th century writers Herbert Spencer and Lewis Henry Morgan to the more recent cultural evolutionism of Service (1971), Fried (1967), and Sahlins and Service (1960). Complexity as a category in an evolutionary framework was measured through technology, the economic base (Marxist approaches), and social structure (cultural evolutionism). Cultural evolutionists categorized chiefdoms and states as complex societies, as opposed to non-complex band and tribal societies, and complexity of the society came to be judged by the emergence of hereditary social positions and unequal access to primary resources of life.

Although the notion of human history from simple to complex was widely accepted, the definition of complexity was interpreted in different ways. For example, Flannery (1972) categorized complexity into two categories: segregation and centralization.
Segregation means the degree of differentiation and specialization within a system and centralization means the degree to which the internal parts of the system were linked to each other and to different levels of social control. Those definitions became influential in categorizing societies depending on the level of complexity and in explaining an absolute way of social transformations (e.g. Blanton 1978; Sanders and Nichols 1988; Spencer and Redmond 2004).

The discussion of social complexity is directly linked to issues of social organization, and concepts of hierarchy and also heterarchy (e.g. Crumley 1995, 2003) are essential to understand agents’ practices and overall social structure. According to Rautman (1998:327), the hierarchical framework “involves three assumptions regarding the organizational elements of a system: that a lineal ranking is in fact present; that this ranking is permanent (that is, the system of ranking has temporal stability); and the ranking of elements according to different criteria will result in the same overall ranking (that is, the relationships of elements is pervasive and integral to the system, and not situational).” Elites’ control of power establishes hierarchical frameworks, and the evidence of hierarchy is recoverable from burials, structures, and surviving monuments of elite compounds, palaces, ritual architecture, and ethnographic histories. However, there remains the question about whether hierarchical control of power is enough to explain the complexity of social relations in early societies of Mesoamerica. Identifying complexity at the macroscale ignores practices pertaining to non-centralizing tendencies and non-elite perspectives.

To complement hierarchical models of political and economic organization, the concept of heterarchy was developed. According to Crumley (1995:3), heterarchy is “the
relation of elements to one another when they are unranked or when they possess the potential for being ranked in a number of different ways.” Multiple hierarchies may exist in heterarchical frameworks, and the concept of heterarchy does not necessarily deny the significance of hierarchical organization (Scarborough et al. 2003). Overall, it is possible to discuss different types of heterarchies alongside hierarchies in societies, and thus social change does not always require centralization of power or a single dominant hierarchical structure (Yoffee 2005).

**Complex Societies in Mesoamerica**

Mesoamerica provides rich archaeological data on the formation of complex societies in different regions that were interconnected with one another, so Mesoamerican studies have been intensely concerned with the emergence of social hierarchy. Archaeologists have identified many practices that provide evidence of social differentiation that first take shape in the early village life of Mesoamerica. The Formative period is especially significant because specific ideas of value and legitimacy, defined through practices of establishing social order, are considered to have structured actions of agents in subsequent time periods in Mesoamerica.

The Formative period was a time of many significant changes and developments in settlement patterns, architecture, technology, socio-political systems, and interaction networks. First sedentary villages emerged after 1500 B.C. (Grove 1981), and early villagers already started to establish long-distance exchange networks while their subsistence relied primarily on corn-based agriculture in most areas. After 1200 B.C., early complex societies such as at the sites of Paso de la Amada (Chiapas), San José Mogote (Oaxaca), and San Lorenzo (Veracruz) started to show the evidence of social differentiation, and interaction with other centers on a multi-regional scale (Clark 1991;
Cyphers 1996; Marcus and Flannery 1996). Early Formative societies also exhibit evidence for the beginning of skilled craft production, including textiles, iron-ore ornaments, obsidian blades, and pottery vessels (Clark and Blake 1994; Clark and Gosser 1995; Hendon 1999).

The construction of monumental architecture in some villages created non-domestic spaces to which, archaeologists presume, only community residents had special access. Meanwhile, individual families or households had spaces that were restricted to themselves (Hendon 2003:211). The number of societies employing monumental architecture and art to inscribe social differentiation grew in the Middle Formative period (Grove 1987; Grove and Gillespie 1992a).

One of the most significant developments during the Early and Middle Formative period was the establishment of extensive long-distance interaction networks, and prominent Middle Formative sites such as Chalcatzingo are located in settings that have the potential for controlling those interaction routes (Grove 1987b; Hirth 1987). Those interregional networks spread certain pan-Mesoamerican motifs in the Early and Middle Formative in what is called the Olmec style. The Olmec culture flourished in the Gulf Coast of Mexico since the Early Formative period, and played significant roles in establishing interregional exchange networks. The similarities in artistic style became the basis for the argument of Olmec influence in Middle Formative Mesoamerica (Coe 1965; Coe and Diehl 1980). Even though this pan-Mesoamerican style was not associated entirely with any one locality and should thus not be ascribed to the Olmec culture of the Gulf Coast (Flannery and Marcus 1994; Grove 1989; Marcus 1989; Tolstoy 1989), it gained special values in interregional exchanges and thus would be of
considerable importance in the dynamics of network-based politics. Interregional exchange networks of exotic goods have been well documented (e.g., Pires-Ferreira 1976a, b), and the production and consumption of those items was associated mainly with elite households (Flannery 1968). The significance of the affiliation to symbols of exclusivity is obvious from the evidence that elite individuals buried in Los Naranjos, Honduras, Chalcatzingo, in the highlands of Mexico, and La Venta on the Gulf Coast wore the same kinds of ornaments, even though features of these sites were quite different in the Middle Formative (Joyce 1999).

After 900 B.C. (i.e., the start of the Middle Formative), ranked societies were established from the Gulf Coast to the Soconusco (Figure 1-1) in the lowlands, and from the Basin of Mexico to Oaxaca in the highlands. La Venta grew to be a prominent Olmec center on the Gulf Coast (Drucker et al. 1959), as did contemporary regional centers, such as Chalcatzingo in Morelos (Grove 1987). San José Mogote continued to be the most prominent site in the Valley of Oaxaca, although some competing polities emerged in the area (Blanton et al. 1999). In sum, the Early and Middle Formative periods indicate limited evidence of social inequality, such as elites’ preferential access to prestige items, ritual items, and storage facilities. Furthermore, by the beginning of the Late Formative period (c. 500 B.C.), many Middle Formative centers with clear evidence of social differentiation declined. Despite this demographic disruption, sites of the Late Formative period grew to greater sizes than their predecessors, and developed more definitive internal differentiation between the elite and non-elite. The recovered evidence from the Late Formative also indicates greater specialization in crafts and other social roles.
Historical Processes versus Evolutionary Stages

Even though there is no need to reject qualitative evolutionary change because, for example, societies in Late Formative Mesoamerica are clearly more stratified than those in the Middle Formative period, the model to classify ideal societal types needs to be supplemented by alternative perspectives that could analyze processes of social change. I suggest that to better understand how societies became internally differentiated—that is, to explain more specifically how we conceptualize complexity (or its absence) as an outcome of the strategic actions of agents—it is necessary to investigate through archaeological information of those processes of social differentiation among Middle Formative societies. While this may seem obvious, in fact archaeologists have tended to focus only on the material remains that are believed to manifest social differentiation, but not the social processes themselves. For example, monumental architecture, high-status burials, or the unequal distribution of exotic artifacts represent differentiation, and the processes themselves are not investigated. And when they are, I suggest, especially with an eye towards variations among social processes and their materiality, we can better understand how social differentiation emerges from and also shapes agentive actions, constraints, and outcomes.

Thus, in this study, I focus on micro-scale corporate practices such as feasting, monument and mound building, mortuary activities, crafting, and the acquisition and management of exotic materials among three major Middle Formative centers to argue that centralization is not always inevitable for social transformations. Comparison of social processes among these Middle Formative socio-political centers reveals resemblances and differences in the mechanisms of social differentiation.
I further argue that the Middle Formative period is the very time frame in which to examine a variety of strategic practices and analyze different processes of social differentiation because certain agents competed for status and power in relationships with less complex groups, but also in the absence of (or foreknowledge of) stratified societies that developed only later. That is, we cannot legitimately interpret what happened in the Middle Formative only by reference to what we know transpired in the Late Formative. Archaeological manifestations of social differentiation among major Middle Formative centers clearly indicate that these societies and their trajectories of development vary significantly.

The three Middle Formative sites that were the focus of this study—Chalcatzingo, San José Mogote, and Santa Cruz Tayata—provide ample evidence of social differentiation within the community as already noted by the archaeologists who excavated them. Within a neo-evolutionary framework, all three ranked societies would be expected to evolve holistically to the next complex stage. Significantly, all of them declined at the beginning of the Late Formative period and never became “states.” Yet in other cases, major city-states in Mesoamerica such as Monte Albán and Teotihuacan grew rapidly from small-scale societies beginning in the Late Formative, while absorbing their surrounding populations (Blanton et al. 1996). They did not seem to undergo a centuries-long process of transformation from a regional center or chiefdom to a state. Thus, the Mesoamerican data compels the need to reexamine teleological arguments regarding social transformations that are embedded in neo-evolutionary theory.

In addition, the data from these three Middle Formative centers do not indicate the presence of centralized authorities who could control all resources within the community.
and consolidate their control over the entire region. In neo-evolutionary approaches, institutionalizing hierarchy is an inevitable process of social transformations, and societies which did not evolve into more complex configurations become, by default, failed examples. However, the lack of centralization as an outcome of the processes of social differentiation among these Middle Formative centers suggests that non-centralizing mechanisms, such as the presence of multiple hierarchies and resistance to centralization, play significant roles in the emergence and development of social differentiation within the community, and that there is no inevitability for societies to move to the next stage through a single trajectory.

Archaeological evidence for variations from these Middle Formative centers suggests that they do not fit into established chiefdom categories in terms of settlement patterns, ceremonial architecture, population, economy, and politics. The presence of a variety of social forms within this time period casts doubt on the neo-evolutionary models in which the unit of analysis is always the society as a whole and each society in the same stage exhibits homogeneity regardless of regional differences. The classification of past societies either as simple or complex, egalitarian or hierarchical (Chapman 2003:71-74) obscures a variety of social forms and unique processes of social differentiation. Neo-evolutionary theory ultimately is a theory of classification of ideal societal types, and is not a theory of social change (Yoffee 2005:20).

Furthermore, neo-evolutionary societal typologies and models of complexity ignore the presence and activity of agents, and thus do not allow us to conceptualize complexity as an outcome of the strategic actions of agents as contributory to the unique processes of social differentiation and integration. In this study, I regard the
concept of complexity as an enabling rather than simply a restricting force (e.g., following Giddens 1984), so complexity is treated in terms of the emergence and marking of ranked differences created through strategic actions of agents. Complexity in this study is not attached to certain stages of cultural evolution, and there is no necessity to measure the degree of complexity on some universalizing continuum or to compare whether one society is more complex than another. There is also no need to focus on the timing of the origin or emergence of social complexity in Middle Formative societies as if it were a singular event.

As mentioned above, in order to move away from neo-evolutionary theories and models that focus only on societal types in evolutionary stages and thereby ignore the variability of historical processes, it is necessary to employ practice theories that reveal how people came to live within one of a variety of socially differentiated structures. Practice theories posit that social analysis should focus on the ways that agents work within structures to which they are habituated, and allows us to understand not only structural constraints, but also the variability of social processes that are involved in social transformations. The relationship of social structure and agency is established, reinforced, and reinterpreted through daily practices (Giddens 1984), and action is motivated largely in terms of pragmatic choice and decision-making as well as strategizing or unconscious (doxic) practice (Bourdieu 1977). Thus, exercising agency requires pragmatic choices of available options.

However, because it is unlikely that archaeologists can recover evidence for the motivations and consequences of individual actions, and because much agency is collective rather than individuated (Sewell 1992), an appropriate scale of agency needs
to be determined for analyzing processes of social differentiation at a level larger than the individual, but smaller than the society as a whole. Such agency needs to be theorized for appropriately linking it with Giddensian structures. For this study, the house society model is the most satisfactory, as is explained further in the next section.

**House Practices and Variability of Social Processes**

I take a “house-centered approach” (Gillespie 2007) to analyze processes of social differentiation, and hypothesize that house practices such as food consumption, crafting, monument and mound building, and mortuary treatment contributed to social differentiation and ultimately to transformations in social and political structures. Social differentiation in this study refers to “the process through which social groups become dissociated from one another, so that specific activities, roles, identities, and symbols become attached to them” (Yoffee 2005:32). Archaeological manifestations of social differentiation are outcomes of strategic actions of, in this case, corporate agents who competed with each other for status and power, negotiated relationships for maintaining and promoting status, and sometimes resisted emerging hierarchy. The house is obviously a significant entity in most societies, but not all societies become house societies. According to Lévi-Strauss (1982:174), the house is “a moral person holding an estate made up of material and immaterial wealth which perpetuates itself through the transmission of its name down a real or imaginary line, considered legitimate as long as this continuity can express itself in the language of kinship or affinity, and, most often, of both.”

Houses, as corporate persons following the definition, allow for analysis of strategic actions and their historical outcomes because the study of the house always deals with duration or longevity, a linking of the present with the past (Gillespie
Diachronic rather than synchronic research concerning houses is necessary to reveal long-term strategies for acquiring, maintaining, and replacing resources, and how the outcomes of strategic actions for competition may constitute hierarchy and lead to social change through time (Gillespie 2000b:11). Even though archaeologists typically cannot directly examine issues such as the role of kinship in maintaining properties, they can examine the outcomes of strategic corporate activities, especially when they occurred repeatedly in history (Gillespie 2000b:9).

Considering the fact that agents are always situated within the wider set of social relationships, the units of analysis in an archaeology of practice must be amenable to relational perspectives, while also allowing for uniqueness and flexibility (Barrett 2001). Houses as corporate agents fulfill those requirements because they become the arena for various kinds of social interaction and deal with unlimited spatial and temporal dimensions, as contrasted with, for example, households (Gillespie 2000b:9). The employment of houses as corporate agents further enables archaeologists to overcome conceptual difficulties imposed by categorical societal types, such as chiefdoms, because the dynamic nature of houses acting in space and time does not fit static taxonomic categories (Gillespie 2007). In addition, houses may interact with other houses across societal boundaries (Gillespie 2000b:6). They also obviate such taxonomic groupings as “elites” and “non-elites,” especially because there can be social differentiation within, as well as between houses (Gillespie 2000b:11).

Among the social practices that engage material remains visible to archaeologists are the activities associated with the consumption of food. Techno-functional analysis of pottery and the examination of fauna remains provide interpretable evidence of food
consumption within and between houses, on the assumption (see Hendon 2003) that the social house (the Lévi-Straussian house) is spatially coterminous with the archaeological remains of dwellings. Food is a basic element in the construction and maintenance of social relations of power and inequality, especially in the case of house-based feasting (Dietler 1996; Hendon 2003). House-based feasting would have played an important role in maintaining the social relations of house members and/or allied houses. Feasts could even provide opportunities for host houses to enhance their status, often through the display of goods including important artifacts (Wiessner 2001) and through gift-giving (Clark and Blake 1994; Dietler 1996; Perodie 2001). One important point is that by their nature, feasts typically create reciprocal obligations between host and guest through the gifting of food and drink as well as items of material import (Lau 2002).

Houses have been characterized as “corporate bodies, sometimes quite large, organized by their shared residence, subsistence, means of production, origin, ritual actions, or metaphysical essence, all of which entail a commitment to a corpus of house property, which in turn can be said to materialize the social group” (Gillespie 2000b:2). The important point is that houses claim their property, define and objectify their group identity, and compete with other houses in a larger society “of houses” for their status and power (Gillespie 2000b). The house becomes the arena for various kinds of social interaction and its members are linked within and across generations by descent, marriage, residence, adoption, and shared ritual practices (Gillespie 2000b:9). Where multiple burials are present within residential compounds, usually below the house floor, this may indicate the value of ancestral ties with present house members – a vertical
linkage (e.g., Beck 2007; Gillespie 2000b). When archaeologists adopt the house-level or scale of their unit of analysis to investigate processes of social differentiation, they can see the house as an entity in which hierarchy fundamentally exists and inequality emerges more in the process of recruiting members who have shared motivations to contribute to their own house system.

**Data and Strategies for Comparison**

My project, under the supervision of Dr. Andrew Balkansky, the director of the Santa Cruz Tayata archaeological project, focused on excavating one residential structure in the northeastern part of the Tayata site, and features and artifacts associated with the structure were recovered. Subsequent laboratory analysis focusing on recovered ceramics and shell items revealed evidence of feasting and crafting activities (Duncan et al. 2008). Even though two residential structures in the site were compared in my study in regards to the location, size, and recovered material evidence, the data for corporate practices from Santa Cruz Tayata were only partially recovered. Therefore, a comparative analysis of house practices among major Formative societies in Mesoamerica was essential for complementing my study. The comparison of practices and social processes among contemporaneous societies was essential for revealing varied mechanisms of social transformations during the Middle Formative period. My study shows that corporate agents in different societies combined strategies to discourage centralization of power while maintaining social balance within their community.

Due to the damage caused by farming and erosion, the physical condition of the residential structure remains at Santa Cruz Tayata was generally poor. Because of this condition, as well as the lack of dated carbon samples, I cannot fully analyze diachronic
aspects of house practices in Tayata. Also, it was difficult to identify household floors and complete architecture profiles. One of the residential structures in the north-western part was partially excavated, but the full extent of its profile is unknown. Moreover, most ceramics and other artifacts of this structure came from middens, so there is a lack of contextual information. In spite of some difficulties, I was able to distinguish differences and similarities of corporate practices in Santa Cruz Tayata.

Since the available data from Santa Cruz Tayata for analyzing strategic actions of houses are limited, the data need to be complemented or compared with those from other contemporary regional centers in Mesoamerica. Although it would have been ideal if the data from Santa Cruz Tayata provided all the information of house practices such as food consumption, mortuary treatment, craft making, resource acquisition, and dwelling arrangements (location, size, architecture, maintenance), only some strategic actions of houses such as food consumption, resource acquisition, and shell ornament making were recovered from excavation (Duncan et al. 2008) and subsequent laboratory analysis. On the other hand, the contemporary sites of Chalcatzingo and San José Mogote offer rich evidence of unique practices such as burial treatments and monument and mound building (Flannery 1976; Flannery and Marcus 1983, 1994; Gillespie 2009; Grove 1987; Marcus and Flannery 1996). Even though I cannot perform techno-functional analyses of pottery from these sites to recover evidence of food consumption practices, I can discern unique social processes of differentiation through the various types of strategic house practices, and these are comparable for analyzing similarities and differences. Only through comparison of social processes among
different societies is it possible to discuss why one social organization or one trajectory of change is unlike others.

**Structure of the Study**

This study is organized in eight chapters. In Chapter 1 I have introduced interpretations of complex societies within an evolutionary framework and summarized how macroscale analysis defined stages of Mesoamerican societies, arguing the necessity of applying alternative perspectives to the study of early complex societies. The research problem guiding this dissertation was introduced in the beginning of this chapter. I also discussed general interpretations of the concepts of social complexity and hierarchy, together with an introduction to complex societies in Middle Formative Mesoamerica. Then I explained why my study focused on variations and historical processes rather than similarities and evolutionary stages. Moreover, I introduced an appropriate scale and unit of analysis of agency—the house society—and practice theories to analyze processes of social differentiation. I ended the discussion by presenting the research methods employed in this study and general results from the investigation.

In Chapter 2, I further review conceptual and theoretical backgrounds for the study of social complexity in Formative Mesoamerica. I begin by focusing on the history of theorizing social complexity, while discussing limitations of neo-evolutionary theories and issues of defining complexity. Further I critique the common application of the direct historical approach in Mesoamerica that identifies general similarities between past and modern societies. Then I present alternative theories to analyze archaeological manifestations of social differentiation focusing on variability of historical processes
rather than evolutionary stages and social types. I describe how theories of practice fit to my study of analyzing historical processes of social differentiation.

In Chapter 3, I describe the house as corporate agency in detail, while discussing how and why the house becomes an appropriate scale of agency for analyzing multiple trajectories of social change. I describe the difference between the house model and household archaeology, and argue how the house model fits to studying processes of constituting social hierarchy. Moreover, I discuss both horizontal and vertical dimensions of the house while introducing specific house practices such as feasting and resource management, among others.

In Chapter 4, I present the background for the identification and analysis of complex societies in Mesoamerica, with a special focus on Middle Formative societies. I describe the significance of the Middle Formative period for analyzing various processes of social differentiation. The chapter closes with a discussion of the three Middle Formative regional centers that form the basis of this comparative study: Chalcatzingo in Morelos, San José Mogote in the Valley of Oaxaca, and Santa Cruz Tayata in the Mixteca Alta.

In Chapter 5, I describe the design and implementation of the archaeological survey and mapping at Santa Cruz Tayata, together with an explanation of field methods. The chapter also introduces strategies for conducting excavations in area A of the site and for subsequent lab analysis. In Chapter 6, I describe the result of lab analysis on evidence for house practices in Tayata. I mainly focus on feasting and crafting practices to analyze processes of social differentiation during the Middle Formative period. Feasting is further theorized, and archaeological contexts of feasting
are examined with a techno-functional analysis of the pottery corpus. In addition, the size, location, material, and presence or absence of features of two residential structures was compared to elucidate multiple house practices in terms of likely competition.

In Chapter 7, I focus on both Chalcatzingo and San José Mogote to identify the presence of different house practices focusing on crafting, monument building, burial treatments, and dwelling location and size. The chapter also describes how my analysis is distinguishable from the neo-evolutionary macroscale interpretations offered by earlier archaeological studies of these sites. Furthermore, I compare the results obtained from these two sites to discuss evidence of similar and different corporate practices and trajectories of social change.

Finally, Chapter 8 concludes with a synthesis of the results of this study, a discussion of the significance of the conclusions, and suggestions for future research. The results of this study demonstrate that major Middle Formative centers in Mesoamerica were not duplicates of each other and thus must be appreciated for their variation. Further, they did not follow a series of evolutionary “steps” from one to the next in order to reach the top of a sociopolitical “ladder” of complexity. Social differentiation often occurred in the absence of monolithic totalitarian regimes which monopolized and exercised power over their community members. Instead we see the presence of multiple hierarchies or heterarchies that could have maintained the societal equilibrium.
<table>
<thead>
<tr>
<th>Years</th>
<th>Mesoamerica</th>
<th>Chalcatzingo</th>
<th>San José Mogote</th>
<th>Santa Cruz Tayata</th>
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<td>Middle Formative</td>
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<td>Early Formative</td>
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<td>Espiridon</td>
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Figure 1-1. Map of Formative centers in Western Mesoamerica
As discussed in Chapter 1, in archaeology complex society has long been studied as a clearly delineated manifestation of social complexity. The term social complexity has generally been used for indicating the maturity of society within the evolutionary framework. Accordingly, typologies determine the degree of complexity among societies, specifically by identifying characteristics of the elite class such as the concentration of prestige items, elaborate architecture, and distinguished burial treatments. Many archaeological studies nowadays still focus on when this complexity emerged within early societies (e.g., Arnold 1996a; Earle 1991; Feinman and Marcus 1998; Johnson and Earle 2000). In neo-evolutionary models, simple societies are treated as homogeneous and less differentiated, while complex societies are considered heterogeneous and more differentiated (Earle 1991; Feinman and Marcus 1998; Fried 1967; Sahlins 1963). Societies were categorized as band, tribe, chiefdom, and state (Service 1962), or as egalitarian to stratified (Fried 1967). The fundamental notion was that human history evolved from simple to complex, and the more complex societies succeeded in the formalization of social hierarchies through centralization of power and the establishment of inequalities (McGuire and Paynter 1991; Price and Feinman 1995).

This study argues against the concept of social complexity as merely a category, and discusses that evolution and centralization of power are not always inevitable for social transformations. Unlike neo-evolutionary theories that focus on social types and ignore processes of societal developments, such as how certain agents acquired status and power, I employ practice theories to discuss how the variability of social processes contributed to the archaeological manifestations of social differentiation. Therefore, my
investigation of Middle Formative centers focused on agents’ strategic practices that encouraged or discouraged emerging hierarchy to reveal variable non-evolutionary processes of social differentiation.

This chapter introduces the conceptual and theoretical framework employed in this study and explains why theories of practice are employed for examining variable processes of social differentiation among Middle Formative centers. In the first part of this chapter, I discuss issues of existing theories of social complexity, focusing mainly on neo-evolutionary perspectives on social transformations. This study also addresses issues of applying the direct historical approaches to archaeological studies of early societies, especially ones in the Central Highlands of Mexico and the Valley of Oaxaca. Then I discuss how social complexity can be defined while not relying on evolutionary or taxonomical perspectives. After conceptualizing complexity, I present competing or complementary theories that cast doubt on a widely accepted concept of inevitable centralization and the single trajectory toward societal change, while discussing some issues of those complementary theories. Finally, I explain the advantage of employing theories of practice to analyze how social differentiation among archaeological records emerged through a variety of strategic practices. I conclude with the discussion about an appropriate scale of agency for this study.

Theories of Social Complexity

The issue of the development of social complexity has long been a major focus of archaeologists and anthropologists (e.g., Flannery 1972; Fried 1967; Johnson and Earle 1987; Sanders and Webster 1978; Service 1962). Studies of the early stages of the evolutionary model include analyses of small-scale societies (Arnold 1996a; Flanagan 1989; Upham 1990) and chiefdoms (Arnold 1996b; Carneiro 1981; Earle 1987, 1997). In
Mesoamerica, ample archaeological evidence of long occupancy especially encouraged
the discussion of social complexity at the state-level societies (e.g., Balkansky 1998;
Blanton 1978; Sanders and Nichols 1988; Sanders, Parsons, and Santley 1979;
Sanders and Price 1968). I first discuss issues among different theories of social
complexity in history to provide the foundation to compare with my theoretical approach.

The model most often employed to account for the appearance of complex society
in Mesoamerica was a culture history model in which most Mesoamerican cultures were
influenced by the precocious Olmecs of the Gulf Coast. In the case of the Mixteca Alta,
social development of Formative societies was always linked with outside influence or
with Zapotec conquest from the Valley of Oaxaca (Flannery and Marcus 1983; Spores
1984). In the culture history approach, all human behavior is patterned and the form of
the patterns is largely determined by culture as a whole. Models that rely on the
mechanisms such as colonization and migration (Bernal 1966), religion, military or
economic control (Coe 1965), or trade were used for explaining change in culture
history. The unit of analysis in this approach was the culture area, a conceptual unit
originally based on ethnographically defined cultural similarities within a geographic
area.

The application of the Direct Historical Approach (Steward 1942:337-342) has a
long history in archaeology, especially in areas where cultural continuity between past
and present is well perceived (Willey and Sabloff 1993). Once connections were
demonstrated between prehistoric cultures and modern groups, ethnographic or
historical accounts could be used to analyze archaeological evidence in order to
explained that an application of the direct historical approach has been mainly used to stress similarities between past and present rather than exploring differences between ethnographic and archaeological contexts.

The direct historical approach has been applied to many cultures in Mesoamerica, including ones in the central highlands, the Valley of Oaxaca, and the Maya area. In Mexico, the Aztecs became the source for reconstructing prehispanic Mexican history, and the names of Aztec deities spread throughout regions, regardless of differences in local religion and languages. One case study in the analogical use of Aztec art comes from Teotihuacan, which flourished during the Classic period. Séjourné (1959) used Aztec art to interpret some Teotihuacan murals by viewing Teotihuacan as the origin place of Nahuatl religion and its art as "una escritura santa." Even though Aztec and Teotihuacan societies were very heterogeneous and there is a need to focus on differences as well as similarities (Cowgill 1992:295), the direct historical approach encourages researchers to see generalities rather than specifics. In the Valley of Oaxaca, assuming great continuity from prehistoric to Spanish colonial times, Flannery and Marcus (1983) applied a direct historical approach to trace the Zapotec and Mixtec civilizations from existing ethnohistoric records. Marcus and Flannery (1994) also used the same approach to identify similarities and differences that exist between ritual manifestations in archaeological records of ritual life from Monte Albán and the Zapotec shortly after the Spanish conquest. They concluded from the location of ritual devices, the types and forms of artifacts, and the architectural characteristics of ritual structures, that Oaxaca was conservative enough to have sustained the same ritual practices for the last two millennia. In the Maya area, archaeologists frequently employ ethnographic
or ethnohistoric analogies to analyze patterns in the archaeological record. In household archaeology, a link was made between the recovered house compound and the ethnographically identifiable household to analyze a possible division of labor by sex and age (Wilk and Ashmore 1988).

Even though there is no need to deny the use of the direct historical approach for analyzing past social types, the use of ethnohistoric records needs to be carefully examined, especially when investigating societies in Formative Mesoamerica. Formative societies in Oaxaca, for example, need to be studied from recovered archaeological data rather than ethnohistoric analogies with current Zapotec and Mixtec societies.

Another model, by Wittfogel (1957) and Butzer (1976), focuses on control over hydraulic systems in desert areas, and explains that it was the way of achieving status and power. Environmental determinism gives the natural environment a privileged role in determining changes in human behavior, but it does not sufficiently consider human impacts on the environment. The implication of the model is that the emergence and development of social complexity totally depend on environmental conditions. A weakness of environmental determinism is that it is easy to find very different cultures in regions with very similar natural environments, and similar cultural institutions where environment varied considerably.

Archaeologists have also focused on the interaction between population pressure and agricultural systems to explain the emergence and development of sociopolitical complexity (Boserup 1965; Carneiro 1970). The environment and population are best modeled as interactive variables, but are not themselves causal and are insufficient to
explain chiefdom-level complexity in the archaeological record (Netting 1990). In Central Mexico, Sanders and Price (1968) and Sanders, Parsons, and Santley (1979) took an ecologically oriented cultural materialist approach, and focused on ecological and environmental variables to explain the emergence and development of socio-cultural complexity. Sanders and Price (1968) took a “social Darwinism” view and argued that civilization is an inevitable result of natural selection acting on social groups. Price (1973) also argued that the construction and maintenance of irrigation systems was responsible for the centralization of power. In this theory, ideas, values, and religious beliefs are the means or products of adaptation to environmental conditions. However, the study of demographic change, economic intensification, environmental relationships, and material culture change does not reveal any processes of how social structures were created and reproduced among societies.

In the study of the Monte Albán state in the Valley of Oaxaca, Blanton et al. (1981) concluded that population pressure was not a single significant cause of the rise of the Monte Albán. However, Sanders and Nichols (1988) claimed that analytical primacy should be given to demographic factors because they can be easily measured archaeologically. The problem here is that although demography can have explanatory power, it does not mean that it, in fact, plays the determinative role in the development of social complexity. Cultural materialism considers infrastructure (technoeconomy) as determinant and everything else is epiphenomenal, and defines Darwinian natural selection, rather than a Hegelian dialectic, as the mechanism for change (Price 1982). Moreover, Flannery (1968) argued that political and ideological systems are included along with basic economic or technological aspects of environmental exploitation. In his
systems theory, he took a functional-systemic view of culture and defined culture as a set of interconnected components that change as a result of the relationship between their parts.

Except for the culture history model, the introduced models take evolutionary perspectives, and thus general stages of development are important for their interpretations. Also, they take a holistic view of culture, one in which the parts are well-integrated into the whole, and culture change in those models is simply an adaptation to environment. Because they seek regularities among cultures, they do not focus on broader scales to look for uniqueness in each society.

Brumfiel (1983) has criticized ecologically oriented models because they treat societies as self-contained entities. A fundamental problem is the conceptualization of systems as inherently homeostatic, relying on external factors to explain change. Brumfiel (1983) employed Marxist ideas to consider the degree of social complexity, and argued that culture change can be explained as the result of conflicts or contradiction inherent in different social formations. In her model, society as a whole is not envisioned as a social totality which adapts to the external environment, and explanation for change is possible only when internal differentiation becomes the unit of analysis.

Although the Marxist approach, in which intra-societal conflict becomes the ground of struggles which result in the institutionalization of power, is different from the processual approach in which adaptation to the external environment is a key concept, both models posit that change can be analyzed on a local society or regional scale.
The impact of macroregional interaction such as exchange, alliance, migration, and warfare on the development of social complexity has also been a focus of discussion among Mesoamerican archaeologists (Blanton and Feinman 1984; Flannery 1968, 1972; Freidel 1979, 1986; Hirth 1984). The role of interregional exchange networks was argued either as a stimulus for the origin of complex societies (Coe 1965; Coe and Diehl 1980), as a way for procuring prestige goods to reinforce social position (Flannery 1968), or as a regulatory mechanism to help provision subsistence economies (Pires-Ferreira and Flannery 1976). Flannery (1972) emphasized the significance of information exchange in his systems theory, and argued that trade is a subsystem linked with others within a society composed as a functionally interrelated whole. The relation between prestige and other goods in society is very complex. Helms (1979) argued that exchanged exotic goods could symbolize sacredness and power due to the relative scarcity of the material. In addition to exotic raw materials, technological innovations may also serve as prestige items. Clark and Blake (1994) discussed how the pottery in the Soconusco region of Mesoamerica functioned for serving purposes rather than cooking, and these elaborately crafted ceramics were prestige items. Exclusive access to exotic goods allows certain people to compete more effectively for prestige within the community, and prestige items can be used for social reproduction, or display and legitimization (Clark and Blake 1994). Finally, Wallerstein (1974) developed the world systems theory model and Blanton and Feinman (1984) introduced it to Mesoamerica. They mainly argued that inter-societal contacts, especially the flow of goods among cores and peripheries, became crucial factors for the development of social complexity. In interaction theories, the unit of analysis is whole cultures that are
not viable but depend on inputs from other cultures for survival and reproduction from generation to generation (Kohl 1989).

Overall, ecological, functional, and adaptationist approaches overemphasize the capture of energy from the natural environment and underestimate the significance of the social environment and the interaction with other groups. Unlike systems theory, the Marxist approach focuses on the dynamics of change through internal negotiations (Brumfiel 1992), but the scale of analysis is a local society or a micro-region. Interaction theories do not take the view that the explanation of the development of social complexity must be rendered in terms of individual agents and their actions. Even though pan-Mesoamerican motifs and exotic materials diffused through exchange networks played significant roles in constituting social hierarchy (Joyce and Grove 1999), cores and peripheries in world systems theory are difficult to define and their relationships were always too dynamic to categorize. The shared characteristic of all the paradigms mentioned above was their propensity to ignore the meaningful actions of the inhabitants within societies. Also, those theories employed either external or internal variables to explain social change or the degree of social complexity.

**Conceptualizing Social Complexity**

Although archaeologists employ different definitions for the term “social complexity,” this concept has been primarily used for judging whether certain societies are complex or not according to social, political, and economic variables among archaeological records. Similarly, complex societies in the neo-evolutionary framework mean certain progressive stages with clear evidence of centralization. However, as I discussed in the introduction to this chapter, this study intends to move away from the concept of social complexity as a prescriptive classification. My discussion is built upon
how social complexity can be conceptualized within a non-evolutionary framework, with a perspective that the complexity concept needs to be enabling rather than constraining. My investigation does not focus on discussing which variables most represent the degree of social complexity or the maturity of society. Instead, I argue that social complexity or complex society means a conceptual entity that subsumes a variability of social processes that created archaeological manifestations of differentiation. Different processes of organizational change as outcomes of strategic actions by agents contributed to the emergence and development of complex societies in a variety of forms.

In cultural evolution, monumental architecture associated with elite compounds is a clear indicator of social complexity because monumentality indicates a centralized authority that can amass and control a large labor force (Feinman and Neitzel 1984; Feldman 1987; Johnson and Earle 1987). However, monumentality is just one indicator of a social condition, and there are many Formative sites which suggest a high degree of complexity, but have little monumentality (e.g., Joyce and Grove 1999). I would argue that giving priority to certain variables for explaining the definition of social complexity is misleading. In this case, what needs to be addressed is why monumental architecture was built in certain societies in the course of social transformations. Classifying available variables based on the concept of evolution ignores the possibility of different expressions of “complexity.”

Social inequality always exists because various actors play different social roles depending on age, gender, and physical endowments (McGuire 1983). Even if egalitarian societies exist under certain conditions, all people cannot be equal in every
role because humans tend to seek the opportunity to deal for personal advantage. In ranked societies, qualified individuals outnumber positions because status positions are limited (Fried 1967). McGuire (1983) argued that the definitions of complexity can be divided into two dimensions, heterogeneity and inequality, and that the two often vary independently. Heterogeneity is a measure of the relative frequencies of distinct social identities in a society. Heterogeneity generally increases with the number and degree of interdependence of social roles and statuses. For example, the development of socio-economic specializations and the occupancy of different administrative roles among elites increase the degree of heterogeneity (Blau 1977; McGuire 1983). Inequality is a measure of status differentiation within society, and measures how much difference there is between comparable levels of access to resources by individuals (Blau 1977). Complexity here is just a degree of heterogeneity and inequality, and those two dimensions are the product of classified variables. The primary focus for judging the degree of social complexity is on the roles of elites who emerge in the process of cultural evolution.

Price (1995) argued that there are both vertical and horizontal differentiations that indicate social complexity. The horizontal dimension can be tracked with reference to patterned variation in tool assemblage, features, activity areas, and evidence of craft specialization, and the vertical dimension can be measured through the patterned variation in quantity and quality of materials across populations (Price 1995). In response to Price’s ideas of complexity, we cannot always identify patterned variation that suggests institutionalized inequality in Formative societies. Lesure and Blake (2002) faced a significant challenge toward the interpretation of social complexity. The
data on architecture and artifact distribution at Paso de la Amada, on the Chiapas coast, suggested that social differentiation identified through different architecture styles had nothing to do with economic inequality that was supposed to be obvious among high-status houses and low-status ones. This indicates a difficulty in exploring the structural associations of social, economic, or political variables in archaeological records (Lesure and Blake 2002). The notion that institutionalized inequality should be a definitive attribute of complex societies (Price 1995; Price and Feinman 1995) should not be accepted because patterned variation within the evolutionary classification framework does not always exist in archaeological records. The idea that the patterned variation indicating institutionalized inequality emerges in the course of cultural evolution completely ignores the variability of social processes toward social changes and developments. If typological entities in the evolutionary framework are associated with the concept of social complexity, there is no complexity in many Formative societies.

McGuire (1983:102) also argued that the degree of social complexity can be easily analyzed by focusing on relative inequality, in which the hierarchical position of each person/group within a society can be defined along a dimension relative to all other individuals/groups in society. In Formative societies, we cannot expect significant differences in status and social roles and thus only a relative measure of economic differences can be detected in archaeological records. However, relative difference in economy does not always indicate inequality because an economic variable is just one of the variables in societies and is not always associated with status and power. The idea that relative inequality within social structures indicates the degree of social complexity (McGuire 1983) falls within the classification of variables suggesting some
sort of difference. If we judge relative inequality within the evolutionary framework of classification, the concept of social complexity just becomes the indicator of superiority/inferiority and rich/poor. Archaeological evidence of relative inequality indicates the presence of some successful and unsuccessful agents, but this does not mean that successful agents have more complex qualities than unsuccessful ones. Strategic actions of successful agents do not solely contribute to the process of social transformations, and society is maintained and constantly reproduced by actions of all agents within society (Ortner 1984).

There are other arguments on social complexity. Hayden (1995) proposed that permanent social inequality will inevitably arise in any society where humans have the opportunity to deal for personal advantage. In his view, this would happen where resources are abundant. If Hayden’s theory is correct, social complexity never occurred when resource richness was occasionally diminished by climatic events or cultural practices. Also, Maschner (1991) discussed how warfare and other forms of direct competition would lead to complexity because warfare and other forms of competition need a high degree of organization. In addition, Arnold (1996a) indicated that social complexity means institutionalized control by certain individuals over non-kin labor, and this would occur under social or environmental stress. She explained that archaeologically visible changes in labor organization indicating elite control over the broader labor pool signify the large-scale involvement of labor in architecture construction, harvests, and ritual practices.

Overall, the “degree” of social complexity essentially means the classification of certain variables of the archaeological records to determine if a given society is simple
or more complex, and introduced concepts of social complexity are all restricting forces. The evidence that highly-differentiated societies in Mesoamerica often devolved at the beginning of the Late Formative period casts doubt on the perspective that the degree of complexity increases as the society becomes less equalized. Because trajectories toward social transformations are multilineal and unique in each society, the “degree” in the concept of social complexity makes no sense. In the Middle Formative societies where we do not see significant differences in social roles, status, and power, people nevertheless established interregional interaction networks to acquire new items and information and developed subsistence technologies to improve living conditions. I argue that agents in Middle Formative societies employed strategic measures to encourage or discourage the emergence and development of hierarchical structure within the society, and the variety of negotiation processes of social differentiation through interaction among different social entities are what I investigate for understanding social complexity.

**Alternative Theoretical Considerations on Complex Societies**

The limitations of the evolutionary framework of complex societies have been widely debated (e.g., Yoffee 2005). The use of the ethnographic record to classify societies into evolutionary types does not suit the varied archaeological evidence from early societies such as Chalcatzingo, San José Mogote, and Santa Cruz Tayata. Data from different parts of the world also contradict the primary concepts of the neo-evolutionary theories, and require attention to variations among archaeological records (Chapman 2003:41-45). As discussed, it is generally assumed that exclusionary power predominates in small-scale, less-differentiated societies that evolve to more complex and stratified ones through institutionalizing hierarchy. However, archaeological
evidence of multiple hierarchies and resistance to emerging inequality does not support premises of social evolution. In addition to Mesoamerican examples, Yoffee (2005) argued that societies such as Chaco in New Mexico and Cahokia in Illinois do not belong to the taxonomic category of chiefdoms and never became intermediate stages which evolved into states.

At first, various domains of power among early societies have been analyzed in the dual-processual model (Blanton et al. 1996). This model investigates the variety of strategies used by political actors in the development of larger, more complex polities and the corresponding new institutions within those polities. Within this model, political actors draw from various sources of power, either objective sources such as wealth and factors of production, or symbolic sources such as religion and ritual (Blanton et al. 1996:3). The two major strategies developed in this model are the exclusionary network strategy and the group-oriented corporate strategy. Unlike traditional neo-evolutionary theory (e.g., Service 1971), dual-processual approaches do not assume a progression of social and political development. Nor is the character and development of social formations presumed to be governed by deterministic trajectories or universal principles, and dimensions of history and agency can easily be considered by this approach (cf. Pauketat 2001:84).

In a dual-processual model, strategies of political power in ancient societies may be characterized as falling between systems based on individualized “networks” and systems based on “corporate” groups. In the network strategy, individual agents acquire power by using prestige goods to build alliances. Once power is established it may be legitimized through ancestor worship within an exclusionary descent group. Corporate
strategies focus on the accumulation of group power that is shared by many individuals. Corporate power is commonly materialized in communal architecture, rather than individual prestige (Blanton et al. 1996). However, corporate organization is not necessarily synonymous with egalitarian organization (Feinman 2000:215). The examination of corporate entities by archaeologists does not diminish individual agency. Even though this model provided the perspective that centralization is not always inevitable for social transformations, it could not move away from typologies and failed to explain how and why one strategy became dominant and what kind of mechanisms contributed to the choice of one strategy over the other.

**Decentralization Perspectives**

Diversity in archaeological records encouraged the emergence of other competing or complementing theories and models that recognize the fact that the variability of social processes toward change needs to be analyzed for understanding how individual societies became complex. Crumley (1995, 2003) described societies with multiple power sources such as socio-political, economic, and religious ones, and argued that social transformations can be made through inputs from non-hierarchical sources. In other words, there may be multiple hierarchies such as economic and political hierarchies (Small 1995), secular and religious hierarchies (Wailes 1995), or no hierarchical organization (Ehrenreich 1995). As evidenced by the study of hierarchies among nobles and church officials (Wailes 1995), any society may be seen as heterarchical. The study by Potter and King (1995) in the lowland Maya area revealed that trade of utilitarian items was heterarchically organized and luxury item trade was more hierarchically organized. Heterarchy subsumes hierarchical structures, and thus hierarchy and heterarchy do not need to be dichotomized (Crumley 1995, 2003). Rather,
the proposed dichotomy in this concept is between vertical and horizontal differentiation in political decision strategies. Even though heterarchical perspectives, assuming multiple sources of power, become a useful concept to assume non-evolutionary change of societies, the concept alone does not provide solutions to analyze how those complex societies were organized.

The resistance to the emergence and development of hierarchical structures within societies is another archaeological recoverable practice. Among mechanisms that prevent exclusive power are separations of power into different individuals or groups, such as, for example, excluding figures who abuse their status and power or dividing secular from religious power. Clastres (1987) noted that the Tupi-Guarani tribes left their villages to resist political hierarchy and deprive the power of emergent chiefs. Trigger (1990) also observed that the Iroquoians developed a system of dividing sources of power and means to exclude figures who did not follow the ideals of equality. McGuire and Saitta (1996) introduced a communal organization of Prehispanic western pueblos, arguing that the community controlled elites were allowed to have higher economic and ceremonial power only during times of scarcity. This resulted in an expulsion of less powerful clans and individuals from the pueblos when they could not support the entire population and a cooperation and egalitarian ideology during good times. Even though this type of organization can be labeled as heterarchical, Saitta and McGuire (1998) utilized the concept of communal, because the heterarchy concept does not have the explanatory power to reveal the dynamic relations of these societies. Cycling between hierarchical and egalitarian societies, such as between gumsa and gumlao forms among the Kachin of upper Burma (Friedman 1984; Leach 1965), may be a way to
resist hierarchy. Another example of cycling is the Greek city state of Athens, which strategically changed between elite-centered stratified and democratic structures (Morris 1997). Permanent hierarchies can develop only after mechanisms for maintaining equality are removed in these cases.

Yoffee (2005) contested the idea that less complex societies become states through a series of programmatic stages, and argued that lived experience is varied from place to place, and each society is unique and dynamic. In his model, we see complex and unique processes of differentiation, different types of heterarchies alongside hierarchies, and the limits of absolute power in city-state societies. Centralization is not always a key for social transformations, and some societies become differentiated without being centralized. Intensive studies of ethnographic chiefdoms by Feinman and Neitzel (1984) revealed that there are no discrete social stages and that social transformation is likely to be continuous. An increasing number of archaeologists currently focus on the dynamic nature of decentralized (or anti-centralized) societies in which multiple hierarchies and heterarchy exist (e.g., Joyce and Hendon 2000; Lesure and Blake 2002; Lopiparo 2007; Mehrer 2000).

**Theories of Practice: Focus on Social Processes**

In order to analyze how societies changed or differentiated, there is a need for a theory and model that allows a focus on a variety of activities that created archaeological manifestations of social differentiation. What was missing among neo-evolutionary theories is the premise that no structures exist outside the way in which they are practiced by individual actors on a daily basis. Social actors have self-interested goals and strategies and make decisions in relation to multiple factors and other agents (Giddens 1984), and those actions occur within a structural context,
constrained by both the biophysical and sociocultural environment (Giddens 1984; Ortner 1984). According to Giddens (1984:25) in regards to the interpretation of the recursive relationship between structure and agency,

the constitution of agents and structures are not two independently given sets of phenomena, a dualism, but represent a duality. According to the notion of the duality of structure, the structural properties of social systems are both medium and outcome of the practices they recursively organize. Structure is not ‘external’ to individuals: as memory traces, and as instantiated in social practice, it is in a certain sense more ‘internal’ than exterior to their activities in a Durkheimian sense. Structure is not to be equated with constraint but is always both constraining and enabling.

Thus, in the process of social transformations, structures provide certain constraints to agents, but all forms of social practice recursively act back on social framework and ideology (Giddens 1984). Giddens (1984:2) argues that a primary focus of analysis needs to be put on social practices ordered across time and space rather than the social totality or the experience of the individual agent.

Practice theory is based in the work of Marx (1963), Bourdieu (1977), and Giddens (1979, 1984), among many others (e.g., Ortner 1984). Marx’s idea that history both shapes and is shaped by cultural activity became the foundation of practice approaches (Dobres and Robb 2000:4-5). Basically, practice is anything people do (Ortner 1994:393), but most relevant forms associated with questions of social change are the ones with either intentional or unintentional sociopolitical implications (Ortner 1994:393). Practice-based approaches allow us to recover meanings in repeated activities of everyday life, and help to illuminate both the conscious and unconscious expressions of agents who gain knowledge and social skills through experiences and observation in their daily lives (Bourdieu 1977; Giddens 1979).
Practice theory is useful in studies of agency because it permits a consideration of social actors as forces that both intentionally and unconsciously create, shape, and reproduce an organizing framework of the society. Bourdieu’s (1977) concept of *habitus* is essential to analyze how agents create and maintain an organizing principle, and at the same time, are constrained by it. In his definition, the *habitus* is:

Systems of durable, transposable dispositions, structured structures predisposed to function as structuring structures, that is, as principles of the generation and structuring of practices and representations which can be objectively ‘regulated’ and ‘regular’ without in any way being the product of obedience to rules, objectively adapted to their goals without presupposing a conscious aiming at ends, or an express mastery of the operations necessary to attain them, and being all this, collectively orchestrated without being the product of the orchestrating action of a conductor (Bourdieu 1977:72).

*Habitus* is a concept associated with people’s everyday life, and informs agents what is conventional, acceptable, and proper (Barrett 2001:153). The *habitus* is learned through daily experiences and observations, and creates and sustains an organizing principle of the society which also affects the *habitus* (Gosden 1999:125). However, the *habitus* is not a set of rules but is made as we act, as indicated by Bourdieu (1977:78). The *habitus* is “the universalising mediation that causes an individual agent’s practices, without either explicit reason or signifying intent, to be none the less ‘sensible’ and ‘reasonable’” (Bourdieu 1977:79).

Because repeated activities people engage in on a daily basis produce patterned evidence of material culture that are likely to be recovered in the archaeological record, in conducting archaeological research it makes sense to investigate those activities (Lightfoot et al. 1998:201). Such patterning reflects *habitus* and is important in interpretations of social change. However, while *habitus* is historically constituted and people are often unconsciously subject to an organizing principle of the society, agents
employ all strategic options to compete for status and power (Ortner 1984). The significant point is that actors can exercise agency only when they choose their actions from available options, even though intended actions may produce unintended consequences (Joyce 2004:38).

Many archaeological studies employed the concept of agency and focused on certain elites, defined by typologies because their institutionalized control was considered the prime mover of social transformations (e.g., Clark and Blake 1994; Dobres and Hoffman 1994). The concept that agents are dominant individuals who act in their own interests and solely contribute to social developments falls into the paradigm of methodological individualism (Dobres and Robb 2000:9), and ignores strategic practices of competing agents in the society. As Barrett (2001) argued, agency must include collective actions extending beyond the individual’s body and their own lifespan to prevent it from returning to methodological individualism.

Practice theory allows us to understand not only structural constraints but also the variability of social processes that are involved in social transformations (Ortner 1984, 2001). The relationship of social structure and agents has been established, reinforced, and reinterpreted through daily practices (Giddens 1984), and action is largely in terms of pragmatic choice and decision-making as well as active strategizing or practice (Bourdieu 1977). However, since no effective methodology for recovering actions of individual agents has been established, an appropriate scale of agency needs to be determined for analyzing social processes of differentiation. Agency needs to be theorized for appropriately linking it with an organizing principle, and the debate still exists over whether agency is a property of an individual, or can be exercised by a
The combination of practice theory and corporate agency which I discuss in detail in the next chapter allows us to understand how individual societies develop through strategic actions of agents over space and time.

Summary

I began this chapter presenting major neo-evolutionary arguments on the issue of social complexity, while discussing the known disadvantages of those theories. I also focused on the direct historical approach to explain the problem of applying ethnohistoric analogies to archaeological records from highland Mexico and Oaxaca. Then I explained the limitations of utilizing the taxonomic stages in neo-evolutionary models, while focusing on the deficiencies of defining chiefdoms. I also described my perspectives on the concept of social complexity by arguing against restraining and classificatory concepts within an evolutionary framework. Finally, I presented alternative theoretical considerations to teleological arguments and the premise of centralization in social transformations, and justified the reason for employing practice theories to my investigation of comparing social processes of change. The next chapter presents the house society model and discusses how and why the house as corporate agency becomes advantageous for the study of archaeological manifestations of social differentiation among Middle Formative societies.
CHAPTER 3
THE HOUSE AS CORPORATE AGENCY

As I discussed in Chapter 1, I take a house-centered approach (Gillespie 2007) to analyze strategic actions and their historical outcomes, and hypothesize that house practices such as food consumption, craft-making, monument and mound building, and mortuary treatment contributed to transformations in social structure. Archaeological manifestations of social differentiation are considered to be outcomes of strategic actions of corporate agents who competed with each other for status and power, negotiated relationships for maintaining and promoting status, and sometimes resisted emerging hierarchy.

In the preceding chapter, I introduced neo-evolutionary perspectives which assumed that the centralization of power is an inevitable process in the transformation from chiefdoms to states, and that societies that did not evolve to the more complex ones represent failed examples. The unit of analysis in these approaches is always the society as a whole, and each society in the same stage of evolutionary development is considered analytically identical regardless of their geographical and historical contexts. Finally, those seemingly identical societies in the same taxonomic stage are assumed to evolve into a more complex and heterogeneous stage—the state—through a single trajectory.

In order to supplement neo-evolutionary theories that focus only on societal types in evolutionary stages and ignore the variability of historical processes, a theory of practice can reveal how people came to live within a variety of socially differentiated structures. The units of analysis for analyzing the mechanisms of social differentiations needs to be differentiated social groups rather than the society or the region as a whole.
In this regard, I discuss the concept of the house society and describe how employing the house as corporate agency is advantageous and appropriate for analyzing strategic practices and unique processes of social differentiation.

In the first part of this chapter, I describe the house society model introduced by Claude Lévi-Strauss to explain how and why houses become suitable agents for this study. Also, this chapter addresses conceptual differences between the household and the house, while discussing characteristics of household archaeology. Then I present a house-centered approach, to discuss methodological advantages of the house society model in archaeological analysis. After conceptualizing the house and explaining a house-centered approach, I present archaeological evidence of corporate practices to discuss how they indicate unique processes of social differentiation. Finally, I conclude with a discussion about the significance of a house-centered approach to analyze evidence from Middle Formative societies in Mesoamerica.

What Is a House Society?

Since this study focuses on how the house as corporate agency helps to explain processes of social differentiation, concepts of the house need to be defined and justified for this purpose. Claude Lévi-Strauss (1982, 1983, 1987) developed the concept of société à maisons to deal with anomalous cases of kinship practices in ranked societies. He ended up employing the emic term for corporate social groups in these societies—the word for the dwelling itself—for an otherwise etic concept. That is, people in such societies often used the same word for dwelling and for their significant social groupings (Lévi-Strauss 1982). Although at first used primarily by ethnographers, the house society model has been recently profitably employed in more analytical by anthropologists and archaeologists (Beck 2007; Carsten and Hugh-Jones 1995; Joyce
and Gillespie 2000). An increasing number of studies centered around houses demonstrate how they played significant roles in structuring social organization in ancient societies (Gillespie 2000b:15).

It is important to differentiate the house from similar terms such as household and dwelling. Although most societies have houses as residences, not all societies become house societies. According to Lévi-Strauss (1982:174), a house is “a moral person holding an estate made up of material and immaterial wealth which perpetuates itself through the transmission of its name down a real or imaginary line, considered legitimate as long as this continuity can express itself in the language of kinship or affinity, and, most often, of both.” Lévi-Strauss (1987) argued that certain societies whose kinship system is characterized as neither patrilineages nor matrilineages, such as occur in Polynesia, Indonesia, Melanesia, and sub-Sahara Africa, fit the concept of société à maisons. Even though historical examples such as feudal European families were also used for characterizing a house society, house-centered practices of acquiring and maintaining names and titles and using different kinship strategies to enlarge (or shrink) house membership and earn hereditary privileges, are found among other societies, such as the houses of feudal Japan (Lévi-Strauss 1983).

Kinship is often actively negotiated in order to obtain more economic control or political power (Bourdieu 1977; Lévi-Strauss 1982, 1983). Because any kinship group will include members related by matrilineal and patrilineal descent, the organization of identities, property and privileges by kinship principles can lead to tensions (Lévi-Strauss 1982:186), and that may result in splits (Gillespie 2000c:33). Lévi-Strauss (1987:152) argued, in contradistinction to kinship-based groups, that the house became
a social mechanism to subvert kinship, ignoring or getting around kinship rules. This is especially so among societies where centralized governmental structures are absent—people still relate to one another using kin-like ties--, but strong inequalities or rankings are present. Thus, fictitious kinship such as arranged marriages and adoptions often are found in house societies because they are strategies for gaining property rights and inheriting immaterial and material wealth such as names and titles, using the language of descent (Gillespie 2000b:9-10). The primary purpose of the house is to maintain tangible and intangible properties over generations (Lévi-Strauss 1982), and thus in a house society, actions regarding property rights shape human relations rather than relations of property based solely on kinship bonds (Gillespie 2000b:8).

As noted above, social hierarchy often plays a significant role in house societies. Complex strategies of houses to acquire wealth, status, power or property are more like in a hierarchical order or disappearing egalitarian system (Gillespie 2000b:9). Waterson (1995) argued that houses are prominent institutions in societies undergoing social change toward more hierarchical conditions. Others also observed the role of houses as a vehicle for naturalizing rank differentiation (Hugh-Jones 1995; McKinnon 1995).

Houses often contain close and distant relatives and non-kin members, and relational differences define the status of those members (Lévi-Strauss 1987). Also, houses can incorporate other houses as a part of their estate, and vertical orders are assigned in their relationships (Forth 1991:63; Gillespie 2000c:49; McKinnon 1991:98). Thus, inequality plays important roles within house organization, and social hierarchy can be expressed as differences in political, economic, social, and religious power within and between houses.
The concept of *personne morale* by Lévi-Strauss (1979, 1982) is significant, especially because this study treats the house as a corporate agent. Lévi-Strauss (1987) considered that the concept of corporate group as a classificatory entity does not fully represent what the house is, and defined the house as “a moral person.” With a moral personality, houses as corporate agents possess rights and follow obligations, and their roles and relations to other houses in the larger society define them (Lévi-Strauss 1987:153). Functioning as corporate agents, members of the house are motivated to take actions for the interests of the houses they belong to, and consider strategies for protecting and enlarging their property (Gillespie 2007:13). Houses acquire and exchange their property through marriage, adoptions, warfare, and other ways, and compete with one another for property as well as political and economic status (Gillespie 2000c:24-25). Moreover, the house is not a unified personhood, and members of the house have their own internal statuses. Thus, attention should be paid to intrahouse competition and cooperation, as well as interhouse relations, in which houses as moral persons negotiate with each other in the larger society (Gillespie 2007:34).

**Why Use the House?**

Considering the fact that agents are always situated within the wider set of social relationships, the units of analysis in an archaeology of practice must be amenable to relational perspectives, while also allowing for uniqueness and flexibility (Barrett 2001). Also, this study argues against neo-evolutionary perspectives on classification, such as social types and clear distinctions between the elite and non-elite, and thus the concept of the house as corporate agency should enable archaeologists to move beyond such categorization. Here, I discuss reasons for employing a house-centered approach in this
study, while illustrating advantages of the application of the house society model in archaeological studies. I first clarify the difference between the household and the house because the household, as utilized in household archaeology, is distinct from the house in the house society model.

**Conceptual Differences between Households and Houses**

The household is a social and economic unit in which co-residents prepare and consume food and other necessities in common, share a common domestic budget, and store items/foods in a common facility (Wilk and Netting 1984). Also, the household as an economic unit is typically confined to a physical building/structure, and as a social unit is limited to the life span of a founding couple, although multiple sequential households of descendants may occupy the same dwelling (Smith 1987). A household is therefore a temporally and spatially discrete unit. Moreover, the household as an adaptive mechanism is an irreducible entity whose activities and structure are the result of external environmental and social conditions (Hirth 1993; Sheets 1992). On the other hand, the house of the société à maisons is a social “property-owning” group (Gillespie 2009:7). House societies have been characterized as “corporate bodies, sometimes quite large, organized by their shared residence, subsistence, means of production, origin, ritual actions, or metaphysical essence, all of which entail a commitment to a corpus of house property, which in turn can be said to materialize the social group” (Gillespie 2000b:2). The important point is that the house is “a corporate group maintaining an estate perpetuated by the recruitment of members whose relationships are expressed in the language of kinship and affinity and affirmed by purposeful actions” (Gillespie 2000a:467). Houses include individuals and families of different status who help support house activities and agendas (Gillespie 2000b, 2009; Gillespie and Joyce
1997; Hendon 2001; Joyce 2000a). Also, the house becomes the arena for various kinds of social interaction, and its members are linked within and across generations by descent, marriage, residence, adoption, and shared ritual practices (Gillespie 2000c, 2009). Moreover, where multiple burials are present within residential compounds, usually below the house floor, this may indicate the value of ancestral ties with present house members—a vertical linkage (Chesson 2007; Düring 2007; Gillespie 2000c, 2011). Thus, the house never becomes spatially and temporally discrete.

Household archaeology grew out of settlement pattern studies (Flannery 1967), and Wilk and Rathje (1984) first introduced the term. Household archaeology focuses on identifying productive activity areas and links different social units in scalar fashion to a nested hierarchy of spatial units (from house structures, neighborhoods, settlements, to regions). The household has been called the “level at which social groups articulate directly with economic and ecological processes” (Wilk and Netting 1984:618) and the “fundamental unit of organization” (Hirth 1993:21). Household archaeology may reveal external and internal economic and socio-political relations. In Mesoamerica, for example, the presence of pan-Mesoamerican objects in a household indicates that household’s participation in interregional exchange networks. In the Valley of Oaxaca, the production of exportable iron-ore mirrors at workshops in San José Mogote could indicate a higher socio-economic status of the households to which those workshops were attached (Flannery 1976; Flannery and Marcus 1983).

The issue is that households as units of production and consumption are typically treated as homogenous within a society, lacking variability in space or over time (Gillespie 2007:34). In terms of variation, household archaeology has typically been
limited to distinguishing “elite” residences from “non-elite” ones on the basis of markers such as size, presence of exotic artifacts, treatment of subfloor dead, etc., within a neo-evolutionary framework. Household archaeology lacks models of social process that might reveal how certain social groups became elites while employing successful strategies for being differentiated from others. In contrast, a house-centered approach, treating houses in a house society, can overcome some of these limitations of household archaeology, even as it utilizes the data and assumptions derived from the study of households, and better suits the investigation of social complexity in Formative societies.

A House-Centered Approach

As I briefly discussed in Chapter 1, a “house-centered approach” drawn from the Lévi-Strauss’sian house society model (Gillespie 2007) is different from other studies focusing on physical households represented by household archaeology. Even though Lévi-Strauss did not pay much attention to the physical characteristics of residences or the aspects of daily life within them (Carsten and Hugh-Jones 1995:12), later studies recognize the significance of architecture as a cultural symbol in house societies (Gillespie 2000b; Scarduelli 1991; Waterson 1995). One of the most significant aspects of the house-centered approach is its focus on social groups and their materiality, including domestic architectural remains. Even though the residential structure can be considered the materialization of the basic kinship unit (e.g., Helms 1998)—that is, reading kinship from houses-- replacing an emphasis on kinship by the larger construct of the social house can overcome the limitations of modeling social groups primarily in terms of kinship. The point is that architecture and the social group are mutually implicating, and thus a house-centered approach generally requires archaeologists to
focus on relations between them (Gillespie 2007:29). The prominent advantage of this approach in archaeological studies is the presence of houses in every society of the world, and thus archaeologists in different regions can investigate major roles of social houses in societal transformations.

A house-centered approach is suitable for analyzing variability in social practices and processes, rather than categorizing features and attributes in fixed typologies, because the social house as agent is flexible, variable, and essentially functions diachronically. Gillespie (2000c:43) discusses the dynamic role of the house as a “central and fundamental organizing principle” in a variety of social forms. There are several advantages of employing a house-centered approach in the investigation of corporate practices and processes of social differentiation in Formative societies, which I enumerate here.

First, the house society model has advantages for the diachronic nature of archaeological studies. House members compete for wealth and power within and between houses, and thus house status changes when new sources of wealth become available or interactions with other societies change the local dynamics (Gillespie 2000b:10). Houses include individuals and families of different status who help support house activities and agendas (Gillespie and Joyce 1997), and social hierarchy can be expressed as differences in prestige, wealth, and ritual and political power within and between houses (Gillespie 2000b:8). Thus, when archaeologists focus on the house-level to analyze the process of emerging social differentiation, they can consider the house as an agent in a social configuration in which hierarchy fundamentally exists and inequality emerges out of the processes of interacting with other houses by arranging
marriages, exchanging items, and recruiting members who have shared motivations to contribute to their own house system (Gillespie 2000b, 2009). All these processes and practices are easier to identify with diachronic perspectives. Lévi-Strauss (1983, 1987) suggested that the long view of history is significant for understanding the mechanisms of transformation, consolidation, and eventual dissolution of houses, which are perpetual entities that outlive individual house members.

Diachronic investigations of houses reveal long-term strategies for acquiring, keeping, or replacing resources that are the basis for status and power, and outcomes of these strategies can constitute hierarchy and result in social change through history (Gillespie 2000b:15). Although archaeologists cannot always examine issues such as how kinship relations played roles in maintaining the integrity of an estate, they can investigate “the outcomes of group activities that have enduring material components, especially those that occurred repeatedly within long time frames” (Gillespie 2000b:15). Temporary differentiation in social roles and activities becomes naturalized and more permanent through daily practice, and this process can be identified in the material relationship within and between houses. Thus, the long-term perspective of archaeology is not just advantageous but essential for analyzing historical process of elaboration and the rise and decline of houses, and for considering which ways of living were possible within given material conditions.

On the other hand, a synchronic perspective is also important because ethnographic information provides comparable data for archaeological interpretations of houses. Even though ethnography has temporal limitations and rarely reveals the history of dynamic processes in which houses flourish and decline, it provides both rich
contextual details of the immaterial aspects of life and examples of the diversity of cultural forms (Gillespie 2000b:18-19). Since the concept of the house does not have temporal and spatial limitations (Lévi-Strauss 1982, 1983, 1987), diachronic perspectives need to be well-integrated into synchronic perspectives to analyze corporate practices and variable processes of change.

The durability of the house (e.g., Beck 2007) is a significant property, and this is another advantage for archaeologists. Residential architecture periodically needs renovation and rebuilding or enlarging. Material culture inside residential structures needs replacement and maintenance, and house members themselves (as house property) experience cycles of life--birth, marriage, and death. In this situation, how can houses maintain their permanency as corporate entities? Carsten and Hugh-Jones (1995:36-40) have advocated the processual nature of houses by indicating the dynamic relations among people, architecture, house location, and social identities embedded within dwellings. Thus, the house experiences cycles of life and death as well as renewal of generations. Some archaeologists have demonstrated strong connections between living members of houses and their ancestors by focusing on the evidence of burial treatments (Beck 2007; Gillespie 2011; Kirch 2000). Others have suggested symbolic meanings of residential space and the specific materials associated with components of residential architecture (Gillespie 2009; Joyce 2000b; Marshall 2000). Archaeologists can also demonstrate the perpetuation of the house by investigating how burials or human remains were deposited inside house property with or without elaborated tombs, and how signs of ancestral figures such as heirloomed costumes and valuable items were used to indicate close bonds with the living house
members (Gillespie 2007:35). Residential architecture creates space for actors in the present, while referencing the material remains of past structures and past house members. This means that house becomes the arena for the gathering of living house members and for the memory of past generations.

The variability of houses also has benefits for archaeological studies, especially when archaeologists focus on variations in strategic practices to analyze historical processes of change. This is because the house society model essentially requires great attention to inter-house and intra-house variations in multiple domains of the archaeological evidence to deal with such variation (e.g., Gillespie 2011). The statuses of houses can be different within the same society, and each house may employ different strategies for survival. Also, houses become the arena for various kinds of social interaction with unlimited spatial and temporal dimensions (Gillespie 2000b:3). By analyzing the size and internal structures of residences, archaeologists can investigate how house members were attached or detached from houses and house relationships, and what this situation implied for the larger community over time. Hendon (2007), for example, focused on variability in strategic actions and demonstrated that elite houses of the Classic Period Maya city of Copan created alliance affiliations with allied or subsidiary houses to maintain or gain status and power. Kahn (2007) focused on Austronesian house societies and revealed that higher-ranked houses may have had their own part-time craft workers, who used specific spaces within dwellings while maintaining separate identities.

Houses are most visible in their interactions with other houses. Lévi-Strauss (1987:178) stated that the house is “a dynamic formation that cannot be defined in itself,
but only in relation to others of the same kind, situated in their historical context.” One such relationship for obtaining or increasing property is by marriage or other ways of alliance to establish inter-house relationships. Even though such specific practices for arranging alliances are seldom recoverable from archaeological evidence alone, building inter-house relationships was obviously significant for individual houses to promote their socio-political and economic status. Hendon (2007) demonstrated that early houses in Yoro in the Cuyumapa Valley of Honduras created connections to powerful foreign houses in the form of alliances. In addition, Brown (2007) has discussed how marriage exchange likely played a significant role in maintaining a heterarchical condition among high-ranked houses in the precontact Southeastern United States.

Houses also create inter-house relations for maintaining relative equivalencies among them in the absence of centralizing authority. Lopiparo (2007) has demonstrated that houses in Terminal Classic Honduras used a diversity of ritual practices and created multiple heterarchical networks to integrate society in the absence of hierarchical structure. Adams (2007) found that houses in Kodi society in Indonesia utilized feasting to establish integrative sociopolitical and economic relationships. Food is a basic element in the construction and maintenance of social relations of power and inequality (Hendon 2003:205), so feasting could take place within the households to maintain the social relations of house members as well as neighboring or allied houses (e.g., Dietler 1996).

Moreover, the concept of the social house lacks any reference to size or the scale of complexity, and has no indication of fixed marital or institutional rules, no restrictions
of specific kin ties, and no restrictions in the dimensions of time and space (Gillespie 2007:38). Lévi-Strauss (1982:84) argued that the house is an institution that exists “on all levels of social life, from the family to the state.” Even though this conceptual flexibility has been considered a weakness, especially by scholars focusing on universal similarities and ignoring variations, it becomes an advantage for archaeologists who investigate diachronic and multiscalar problems. The concept of houses as corporate agents further enables archaeologists to overcome conceptual difficulties imposed by categorical societal types, such as chiefdoms, because the dynamic nature of houses acting in space and time does not fit into any static taxonomic categories (Gillespie 2007). The use of the house society model also obviates such taxonomic groupings as “elites” and “non-elites,” especially because there can be social differentiation within as well as between houses (Gillespie 2000b).

Investigation of Houses in Formative Mesoamerica

Utilizing the house society model archaeologists can better analyze a variety of material evidence over time to reveal the different strategies of individual houses, which competed with one another for status and power. Certain objects may indicate not only economic status, but also the value of ancestral ties. Objects recovered from burials under the house floor or around the house suggest the connection between the dead and the residence itself, and thus the living house members (Gillespie 2000b, 2007). Also, artifacts recovered from trash or storage pits provide information on the daily practices of house members. The number, style, and quality of ceramics, crafts, architecture, and “exotic” artifacts among houses provide information on possibly uniquely developed house strategies for acquiring, using, maintaining, producing, and circulating resources. It’s important to note in this regard that the material evidence
associated with a domestic structure does not simply represent the property of the immediate household members. Some of these objects, such as pottery and food remains, might be used for house-based or community-based feasting in which members of other houses participated. Also, recovered figurines and some prestige items might have played a role in house-based rituals, in which house members (not only immediate household members) participated. In this way, archaeologists can investigate the processes of social differentiation within and between houses from material evidence.

Architecture style and size are also significant to determine the relative degree of inequality in a society. Although archaeologists tend to consider that elaborate style and large size suggest high-status houses or households, size does not always represent social status because it could simply indicate the length of house duration (Gillespie 2007). Moreover, the elaboration of houses does not always indicate social status and economic power because the structural associations of social, economic, or political variables may not be identified through archaeological records (Lesure and Blake 2002). The location of houses within a community is also significant, because some are associated with public spaces, architecture, mounds, or other distinctive features. Moreover, houses may have been rebuilt in the same place for a long time, sometimes with the remains of the old houses incorporated into new ones, which suggests that the continuity of house location is socially meaningful (Gillespie 2000b, 2011).

In terms of the social boundary of the houses, the spatial dimension of the physical house includes the arrangement of individual features and people within it, the disposition of structures and their properties within a community where the identity of a
house is constituted along with other features in landscape, and the sociopolitical and economic relationship among houses at the micro/macro regional scale (Gillespie 2000b). At a regional scale, we can expect a certain degree of variation in societies, ranging from highly stratified to less differentiated ones, where the house systems are also very diverse. Some communities have only one or few high-status house groups, and others have ones with no distinctive status differences. Therefore, a simple comparison of house societies at the regional scale does not provide us information on how social hierarchy was locally maintained and negotiated within and between houses. However, by focusing on houses within each society, we can better understand how social differentiation emerged or was prevented through uniquely developed corporate practices of houses.

As discussed in Chapter 1, the Middle Formative in Mesoamerica is the period of transformation from non-ranked societies to hierarchical ones, and variations in archaeological data across this region show various processes of social differentiation. Since the house has a processual nature (Carsten and Hugh-Jones 1995:36-40) and can be a useful analytical construct to bridge the evolutionary divide between simple and complex societies (Lévi-Strauss 1983), my investigation, focusing on house practices in three Middle Formative societies in western Mesoamerica, may serve as a useful case study to analyze how strategic choices and actions of houses have consequential effects. The comparison of social processes within three communities challenges the assumptions of evolutionary stages and the inevitable centralization of social transformations typical of neo-evolutionary theory.
Summary

I began this chapter presenting the house society model of Claude Lévi-Strauss to define the house society and characterize the social house. I then clarified conceptual and terminological differences between the household, the more familiar unit of analysis in archaeology, and the social house to make a clear distinction between them. In the comparison of households and houses, I illustrated the advantages of employing the house as an analytical unit of corporate agency to the diachronic nature of archaeological studies. Moreover, I suggested possible archaeological evidence of corporate practices to discuss how the material evidence recovered by archaeologists may indicate the strategic actions of houses in the past. Finally, I discussed why the Middle Formative period is usefully investigated using a house-centered approach.

Houses were defined by Lévi-Strauss as “moral persons” whose component members are motivated to take actions for the interests of the house. The house society model focuses on strategic actions of houses to maintain and enlarge property and acquire status and power through competition among houses. The strategic practices of houses may “forge integrative or conflictive economic and socio-political relationships in the absence of centralized authority” (Gillespie 2009:9). Furthermore, these strategic actions may leave a significant number and amount of archaeological evidence of the processes of social transformations. Those historical processes can be analyzed only through diachronic perspectives, and indeed, houses cannot be well understood outside of their historical contexts (Gillespie 2000b, 2007; Joyce 2000a, 2007).

Although there are increasing archaeological studies employing a house-centered approach, some of them cited in this chapter, still more archaeological investigations are needed, and their utility can be further broadened to different types of problems.
The next chapter presents background information on Mesoamerica and the Middle Formative period to provide the contexts for the social conditions of three regional centers: Chalcatzingo, San José Mogote, and Santa Cruz Tayata. That chapter also provides the justification for my comparative analysis of house-centered corporate practices and social processes among those three sites.
As discussed in Chapter 1, the Early and Middle Formative periods in Mesoamerica (1500-500 B.C.), characterized by interregional interaction networks for exchanging exotic goods as well as ideas and information (Demarest 1989; Flannery 1968; Grove 1984), were the periods of the emergence and development of complex societies. Beginning in the 1960s Mesoamerican archaeologists focused intensively on these periods to identify the timing of emergent hierarchy (Clark 1991; Clark and Blake 1994), and argued which societies fit which stages of cultural evolution (Blanton 1978; Sanders and Nichols 1988; Sanders, Parsons, and Santley 1979; Sanders and Price 1968). According to neo-evolutionary theories, major centers in Mesoamerica would have evolved into chiefdoms in the Middle Formative period through centralization, and elites’ control of resources through interregional networks would have played a primary role in the emergence of social differentiation (e.g., Diehl 2000; McGuire and Paynter 1991; Price and Feinman 1995). Those chiefdoms belonged to an intermediate stage of social evolution and became more complex societies called states by the Late Formative period (e.g., Feinman and Neitzel 1984).

However, the typical neo-evolutionary model of complex societies does not fit the archaeological data from all major Middle Formative centers. The data indicate that Middle Formative centers were varied and cannot be simply categorized as chiefdoms. Also, centralization was not always inevitable for social transformations in Formative period Mesoamerica. This chapter presents the background for the identification and analysis of complex societies in non-Maya Mesoamerica with a special focus on Middle Formative centers on the Gulf Coast of Mexico and in the Central Highlands of Mexico,
the Valley of Oaxaca, and the Mixteca Alta. In the first part of this chapter, I present Mesoamerica as a culture area. Then, in order to introduce a variety of social forms, I discuss several major regions where primary Formative centers such as Chalcatzingo and San José Mogote flourished. This study also addresses Olmec issue which has long been argued among Mesoamerican archaeologists. The Olmecs in the Gulf Coast of Mexico played significant roles in establishing interregional exchange networks and spreading or acquiring pan-Mesoamerican motifs and ideas (e.g., Sharer and Grove 1989). Thus some scholars treat the Olmec as the “mother culture” of Mesoamerican civilization (e.g., Coe 1965; Coe and Diehl 1980). Finally, I conclude with a more detailed discussion of the Mixteca Alta and the site of Santa Cruz Tayata, where I conducted archaeological fieldwork.

**Mesoamerica**

Even though the geographical boundaries of Mesoamerica are difficult to define, Mesoamerica generally encompasses a geographic area that includes central and southern Mexico, Guatemala, Belize, and the western portion of Honduras in Central America. The point is that Mesoamerica is not simply a geographic region but a cultural concept referring to groups of people who shared cultural, religious, and linguistic features over a long period of time (Clark and Pye 2000; Joyce 2000c). Interestingly, those shared features extended to groups in different socio-political formations and ecological regions through interregional networks.

Among the shared practices within Mesoamerica, subsistence activities became a key feature. Socially different groups in a variety of bioregions produced corn, beans, and squash by using appropriate strategies such as improving irrigation systems, constructing terraces on slopes, and building raised fields in swampy areas (Willey
Even though the same kind of agricultural production systems and food consumption practices existed outside Mesoamerica, specific techniques of food processing and preparation as well as the mythological significance of maize characterized communities in Mesoamerica (e.g., Coe 1994; Monaghan 1990). Another shared feature in Mesoamerica was the use of particular items that indicate socio-political and economic practices. Groups of people who claimed legitimacy in exercising power of socio-political or religious governance controlled exchange networks of non-utilitarian items such as jade and other green stone, obsidian, iron-ore mirrors, shell, mica, fancy pottery, turquoise, shark’s teeth, stingray spines, and cacao (Grove and Gillespie 1992a; Joyce 2000c). New ideas and information also spread through interregional networks and created new values and lifestyles among local communities of Mesoamerica (Demarest 1989; Flannery 1968; Grove 1984; Willey 1966).

Moreover, shared characteristics in belief systems distinguished Mesoamerican cultures from others. Access to the supernatural world required rituals using specific pathways, particularly caves and other portals into the underworld, and trees and mountains which rose up into the upper world (Gillespie 1999). Mesoamerican rituals were primarily conducted in specially created spaces such as ball courts, public architecture, and temples, and the timing of the rituals was calculated from calendrical and astronomical record-keeping (e.g., Clark 1991; Clark and Pye 2000). Ritual practices such as ballgames, burning incense, dances, and sacrifices are recoverable from drawn images, records in texts, and archaeological remains.

Within Mesoamerica a broad temporal division within five major periods is generally recognized: Paleo-Indian, Archaic, Formative (or Preclassic), Classic, and
Postclassic (Willey and Phillips 1958). Although not originally intended for that purpose, these stages are associated with a general trend in cultural evolution (Flannery 1972; Sanders and Price 1968). Mesoamerican archaeology in the twenty-first century still focuses on these cultural stages, each stage identified by certain criteria marking its progression from simple to complex societies.

In the next section I describe certain regions where major societies developed in the Formative period (not including the Maya area). I introduce the Olmec of Mexico’s Gulf Coast, the Valley of Oaxaca, and Chalcatzingo in the Central Highlands of Mexico to show a variety of socio-cultural forms. I also briefly discuss the issue of the Olmec as a “mother culture” in particular relation to developments in the Mixteca Alta and the Valley of Oaxaca.

The Gulf Coast Olmec

My research focuses on three Middle Formative centers in the Central Highlands of Mexico, the Valley of Oaxaca, and the Mixteca Alta. However, the larger context of the Early to Middle Formative period needs to be understood in order to analyze how individual societies developed within Mesoamerica. Because the Olmec of the Gulf Coast of Mexico are one of the most significant and famous cultures in this period, I begin with them. The Olmec had an agriculture-based subsistence system, intrasocietal differentiation, a complex religion, and a distinctive art style. They created monumental stone sculptures and established and participated in interregional exchange networks (Diehl 1981). The archaeological evidence of the Olmec connection with Chalcatzingo (Grove 1984, 1987) and San José Mogote (Flannery 1968, 1976) has been well-documented, and the interconnected nature of Middle Formative centers enabled the spread of pan-Mesoamerican designs and ideas. Considering the significance of Olmec
culture, I explore some significant characteristics of the Olmecs, especially their role in interregional interaction and influence in regional politics as these may (or may not) have contributed to the emergence of social complexity elsewhere in Mesoamerica.

The Early Formative Olmec center of San Lorenzo is situated on a low plateau overlooking the Río Chiquito and the large Coatzocoalcos Basin in southern Veracruz (Figure 1-1). San Lorenzo flourished from around 1200 B.C. to 900 B.C. Although it has been estimated that the population of San Lorenzo was around one thousand based on the number and presumed capacity of the house mounds (Coe 1968:57), recent research has revealed that the population was much higher and that occupation covered the plateau, elevated ridges to the south and north, as well as some areas of the floodplains below the plateau (Cyphers 1996:67). Moreover, although there was no distinct difference in social rank among most of the site's inhabitants, there was a small population of an elite class, and they apparently played a crucial role in managing resources and possibly their distribution (Coe 1968:59). The site contains over one hundred carved stone monuments. Although evidence for the use of jade and greenstone is scarce, recovered obsidian and iron-ore provide useful data for analyzing exchange networks and their mechanisms in Early Formative Mesoamerica.

Coe and Diehl (1980:147-152) argued that the people who had occupied the most productive river levee land became the elite strata of San Lorenzo, and developed and maintained access to key resources by establishing wide social networks with outlying groups. Archaeological evidence indicative of social differentiation at San Lorenzo includes the so-called Red Palace (Cyphers 1996), a large structure with plastered and painted walls, large basalt columns to support the roof, and a sub-floor stone aqueduct.
Moreover, Olmec elites apparently controlled craft workshops, including a monument recarving workshop within the Red Palace (Cyphers 1996). No contemporaneous structures comparable in size and form to the Red House have been documented elsewhere in Mesoamerica (Cyphers 1999).

La Venta is a Middle Formative Olmec center, taking the status formerly occupied by San Lorenzo. It is located on an island in a swamp adjacent to the Tonala river in the state of Tabasco (Figure 1-1). Only one small area of the site, Complex A, has been extensively excavated. There archaeologists recovered abundant artifacts, precious objects, and fine stone sculptures (Drucker et al. 1959). It has been argued, based on archaeological evidence, that Complex A was a restricted area only for the center’s elite. Recent mapping research at La Venta has revealed a high degree of architectural organization and planning. According to González Lauck (1996:75), the site’s architecture includes civic-ceremonial structures (Complex C, a pyramid), civic-administrative structures (Complexes B, D, G, H, and the Stirling “Acropolis”), the small ceremonial precinct of Complex A, and evidence for residential areas within and outside of the city limits (Complexes E, I), and in the surrounding “sustaining area.” The elaborate constructions and burials of Complex A indicate that elites controlled great expenditures of human labor and marked their social ranks with iron-ore mirrors, jade artifacts, and embellished graves (Grove and Gillespie 1992a:204).

In terms of exchange networks, non-local resources such as obsidian, iron-ore, and jade have been found at La Venta, all of them imported from other regions of Mesoamerica through multiple networks during the Middle Formative period (Drucker 1981:35). Among recovered items, there is a significant difference in the quantity of jade
between the sites San Lorenzo and La Venta. Jade and other green stone was scarce at San Lorenzo, but frequent and abundant at La Venta (Garber et al. 1993:211). This suggests that exchange networks for jade and greenstone were not well established during the Early Formative in Mesoamerica and that the elite class at San Lorenzo might have had less interest in jade and greenstone for ornamentation and ritual use.

Although some scholars believe that jade use is an “Olmec trait”, that is probably not true. For example, the earliest archaeologically documented use of greenstone and jadeite may be at Copan in Honduras (Fash 1982) and the early use of greenstone has also been identified at coastal Chiapas sites (Clark et al. 1987). Thus, the use of jadeite and greenstone during the Early Formative period is not a unique trait of the Olmec. In addition, greenstone was the Middle Formative period’s non-perishable exotic of choice, both on the Gulf Coast and elsewhere (Grove 1993:97). With the Middle Formative period there is clear evidence of rapidly emerging elites within Mesoamerican societies, and the elite in this period needed to distinguish themselves and their social rank by acquiring and displaying exotic resources such as jadeite and greenstone (Grove 1993:97). Therefore, “the greatly increased popularity of greenstone in the Middle Formative may have been due to the desire by nascent chiefs for new symbols to consolidate their positions further” (Grove and Gillespie 1992b:30).

The Olmec as “mother culture” problem

Until the recent discovery of the chiefdoms on the Pacific coast of Chiapas and Guatemala, archaeologists considered the Olmec of the Gulf Coast area to be the earliest complex society in Mesoamerica (e.g., Coe 1965; Coe and Diehl 1980). Stylistically similar artifacts recovered from Formative sites all over Mesoamerica encouraged scholars to argue that the Olmec were a “mother culture,” even with no
archaeological evidence that clearly indicates major Olmec influence on the
development of contemporary and later cultures (e.g., Coe 1965, 1968b). The high
agricultural productivity of the lands near San Lorenzo served as the basis for several
theories about the early rise of the civilization (Coe and Diehl 1980; Stark 2000).
However, the region is poor in mineral resources, and, in fact, sources of obsidian, iron-
ore, serpentine, and jade are not located near Olmec centers. Thus, the Olmec had to
acquire all these resources through interregional networks. Scholars of the “mother
culture” school argued that the Olmec conquered and/or occupied local centers in other
regions of Mesoamerica and influenced those other societies in acquiring desired
resources from them (e.g., Coe 1965; Coe and Diehl 1980).

On the other hand, other archaeologists view the Gulf Coast Olmec as just one of
many Formative cultures utilizing a shared pan-Mesoamerican symbol set with other
regions of Mesoamerica, without any priority in developing these symbols or attainment
of a greater level of social complexity (e.g., Flannery and Marcus 1994; Grove 1997).
Long before Matthew Stirling’s 1942 excavation at La Venta, museum curators and
others had recognized objects in the Olmec style from sites throughout Mesoamerica.
Objects without context that resembled those recovered from the La Venta excavations,
and later from San Lorenzo, were lumped together as Olmec (Grove 1997).

Scholars who do not favor the “mother culture” hypothesis consider that the
similarities in art and artifacts are not due to Olmec influences, and the archaeological
evidence indicates that Formative sites in other regions developed locally without any
significant influence from the Olmec (Flannery 2000; Flannery and Marcus 1994; Grove
1987a, 1997). Also, all the stylistic similarities on which the “mother culture” hypothesis
relies, depend primarily upon iconographic motifs decorating portable objects. People transport items as well as ideas and information through interregional networks, and thus stylistic similarities in designs and forms suggest merely mutual contact through interaction networks. In fact, monumental art executed to Olmec stylistic canons appears at only a limited number of sites, such as Chalcatzingo in Morelos and some Pacific Coast sites, such as Pijijiapan and Takalik Abaj (Grove 1997). For all the above reasons, it is appropriate to suggest that the Olmec played an important role in spreading pan-Mesoamerican symbols and ideas as well as different types of commodities through interregional networks as one of the earliest influential cultures in Mesoamerica. Nonetheless, the available evidence does not indicate any significant Olmec influences on the emergence and development of their contemporaries, especially in terms of cultural evolutionary progression.

**Formative Period Oaxaca**

The Mixteca Alta region of Mesoamerica has been studied primarily for its Postclassic and Colonial period occupations (Byland and Pohl 1994; Spores 1967, 1984), and the Formative and Classic periods have received much less attention. Thus, one question addressed in my study is to what degree did Formative period societies in the Mixteca Alta interact with centers in the nearby Valley of Oaxaca, or even with the more distant Olmec centers? The 2004-2005 excavations at the Mixteca Alta site of Santa Cruz Tayata recovered pottery and figurines similar to the pan-Mesoamerican style, and this fact merely suggests a general Mixteca Alta linkage with “Formative stage manifestations distributed widely over central Mesoamerica” (Spores 1983:74). There is no clear archaeological evidence to determine exactly when the Mixteca Alta
had economic and/or socio-political interactions with the Olmec and other with other areas of Mesoamerica.

In the case of the Valley of Oaxaca to the south of the Mixteca Alta, there is evidence that that area exploited iron ore sources and produced different types of iron-ore artifacts, and that the Olmec acquired iron-ore objects from Oaxaca through exchange networks during the Formative period (Pires-Ferreira 1975). Flannery (1968:105) argued that “a special relationship exists between consumers of exotic raw materials and their suppliers, especially when the suppliers belong to a society which is only slightly less stratified than that of the consumers.” In his argument, society in the Valley of Oaxaca was stratified and had systems of status during the Early Formative period. Thus, these peoples were fascinated by the Olmec culture and predisposed to adopt their cultural practices to enhance their own status (Flannery 1968:106). Flannery argues that the flow of iron-ore had begun on a small scale because it was not a priority in their relationship at first (Flannery 1968:106). People in Oaxaca and the Gulf Coast might have developed close interaction relationships, but there is no archaeological evidence to suggest significant Olmec influences on processes of socio-cultural developments there during the Early and Middle Formative period (Flannery 2000; Marcus and Flannery 1996).

San José Mogote and the Valley of Oaxaca

Major Formative period societies in the Valley of Oaxaca actively participated in interregional networks to interact with the Olmec, the Mixteca Alta, and surrounding smaller societies (Marcus and Flannery 1996; Winter 1972). The Valley of Oaxaca is located to the south of the Mixteca Alta, and the archaeological evidence indicates significant degrees of interaction between these regions beginning in the Formative
period (Balkansky 1998; Blomster 2004; Flannery and Marcus 1994; Marcus and Flannery 1996; Spores 1984). Because the patterns of development between these two regions are similar, including parallel stylistic sequences of pottery (e.g., Flannery and Marcus 1983, 1994), well-documented archaeological data from major Formative period centers of the Valley of Oaxaca have become basic reference materials for the study of the Formative period societies in the Mixteca Alta (e.g., Balkansky 1998; Blomster 2004; Duncan et al. 2008; Spores 1984). In particular, the archaeological evidence from the regional center of San José Mogote provides a variety of significant comparable data for such research San José Mogote was the largest and most powerful center in the Valley of Oaxaca during both the Early and Middle Formative periods (Marcus and Flannery 1996; Winter 1984). A large amount of jade and greenstone, obsidian, and iron-ore from different sources has been recovered at San José Mogote. This evidence indicates that San José Mogote played a major role in the establishment and management of Formative exchange networks of various resources (Flannery 1976; Marcus and Flannery 1996). In the Valley of Oaxaca there were major sources of iron-ore, one of the most valuable exchangeable resources in Formative Mesoamerica (Flannery 1976; Pires-Ferreira 1975). Also, not only was San José Mogote twice the size of any contemporary settlement in the Valley, but it was also one of the few settlements of this period in all of Mesoamerica where non-residential, public constructions have been found (Blanton et al. 1993:56).

There are two major phases that correspond to the Early Formative period in the Valley of Oaxaca. The first is the Tierras Largas Phase, dated from 1400 to 1150 B.C., and the following is the San José Phase, dated from 1150 to 850 B.C. (Flannery and
By 1400 B.C., the beginning of the Tierras Largas phase, sedentary farming villages were located throughout the Valley of Oaxaca. Except for San José Mogote, they were small communities, containing ten or fewer cane-and mud houses, each of which was associated with outdoor cooking and storage facilities. San José Mogote was much larger, and contained non-residential architecture and an enclosed plaza area (Flannery 1976). It has been argued that the changes in the nature of non-residential architecture at San José Mogote indicate that the organization of public or ritual activities emerged during the Tierras Largas phase, and that a centering of ritual activities at the site is associated with the demographic growth in this area (Blanton et al. 1993:58). During the San José phase, demographic growth in the valley was not uniform, nor was there a gradual occupation of uninhabited areas. Rather, the most rapid growth occurred only at San José Mogote, which expanded to ten times its Tierras Largas phase size (Blanton et al. 1993; Flannery 1976, 1986).

Several factors suggest that San José Mogote was economically prominent during the San José phase. The small, polished iron-ore mirrors found in the valley and as far away as the Gulf Coast and Central Highlands of Mexico were made within only a small cluster of houses at San José Mogote (Flannery 1976). Although examples of finished mirrors have been identified at four other valley settlements, no evidence of mirror production has been located at any of these other sites (Blanton et al. 1993; Flannery 1976; Pires-Ferreira 1975). House floors at San José Mogote contained evidence of mirror polishing and manufacturing, suggesting that this economic specialization had a long history. Moreover, non-local goods such as Gulf Coast ceramics, stingray spines,
shells, and jade are found more frequently at San José Mogote than at other sites in the region (Marcus and Flannery 1996). Thus, these differences in size, public construction, and economic importance suggest that San José Mogote was a center in the settlement system in the Valley of Oaxaca (Flannery 1976; Marcus and Flannery 1996).

In addition, the residential structures and burial data clearly indicate that there was a social differentiation at San José Mogote (Blanton et al. 1993; Flannery 1976, 1986). Although most of the individuals were buried without any non-perishable grave goods, certain individuals were buried with jade labrets and earspools, well-made ceramic vessels, and magnetite and shell ornaments (Blanton et al. 1993:60). These burial data clearly mark social differentiation and indicate that high status people could access exotic non-local resources through extensive exchange networks during the San José phase.

**Chalcatzingo in the Central Highlands of Mexico**

Chalcatzingo is significant for this comparative study not only because residents of the site actively used interregional interaction networks to acquire prestige items and pan-Mesoamerican symbolism and ideas (Grove 1987a) but also because the site shows intrasocietal differentiation with the presence of multiple hierarchies (Gillespie 2009, 2011). The site is located in the center of the valley of the Río Amatzinac in the state of Morelos (Figure 1-1). The site was first occupied in the Early Formative period, about 1400 B.C., and came to its peak during the Middle Formative period (Grove 1984). Based on excavation data, it is evident that Chalcatzingo became a major regional center in the Central Highlands of Mexico and that it had established links with the Olmec center of LaVenta during the Middle Formative period (Grove 1984:163-164).
Chalcatzingo was extensively excavated in 1972-1974 and 1976 under the direction of David C. Grove (1984, 1987). The project uncovered several examples of monumental architecture and numerous residential structures (Prindiville and Grove 1987), as well as many Olmec-like carved stone monuments (Grove and Angulo 1987). The research also focused on understanding the role of Chalcatzingo within the Amatzinac Valley (Hirth 1987). A surface survey revealed a regional site hierarchy in the valley during the Middle Formative, and mound architecture was observed at five sites (Hirth 1987). That intensive research revealed that Chalcatzingo was the largest site in the valley and the only one to contain both platform mounds and monuments (Grove 1984:47; Hirth 1987:355).

The burial data from the site indicate the presence of a ranked social system composed of at least three hierarchically different groups (Merry de Morales 1987a). The most elaborate burials contained exotic items such as jade jewelry, turquoise, an iron-ore mirror fragment, a jade bloodletter, a were-jaguar figurine, and a monument head (Grove and Gillespie 1992a; Merry de Morales 1987a). The second class of burials still belonged to the high-class category, though their grave preparation and offerings indicate lesser statuses. Elite burials in Chalcatzingo were often marked by the presence of hematite staining on the body and artifacts and by special ceramics such as miniature bottles placed in bowls, spouted trays, and double-loop handled censers (Grove and Gillespie 1992a:196; Merry de Morales 1987a). Due to the poor condition of skeletal material, no status differences according to sex or age could be determined. However, bone chemistry analysis indicated that certain individuals who were buried
with exotic grave goods consumed more meat than other village residents (Schoeninger 1979a, 1979b).

Chalcatzingo also provides information on residential architecture and associated corporate activities. Non-elite residential structures were fabricated of wattle and daub, while elite dwellings were constructed of adobe brick, placed on stone foundations, and painted white (Prindiville and Grove 1987:66-72). Spatial analysis of elite and non-elite residences uncovered evidence of activity areas including storage facilities, food preparation, refuse areas, and burials under house floors (Prindiville and Grove 1987:66-72). Residents of some households participated in craft production (Grove et al. 1976:1206). Among the artifacts recovered at Chalcatzingo were many made from non-local resources such as obsidian, iron-ore, jade, and greenstone (Grove 1984, 1987).

The Middle Formative was also the period when monuments were carved and erected in Chalcatzingo. Based on the stylistic similarities to the stone monuments at La Venta, Chalcatzingo’s major monuments have been dated to the Middle Formative. Those monumental sculptures were presumably made under the direction of the elite, indicating their role in the society’s ideological and religious affairs (Grove et al. 1976). Those monuments are the only examples of Olmec style bas-relief carvings in highland Central Mexico (Grove 1987a; Grove et al. 1976). The carvings are differentially distributed on the site by theme (Grove 1984). For example, stelae depicting important individuals are associated with platform architecture in the settlement’s central area (Grove 1984:109). Overall, archaeological evidence of monumental architecture, specialized craft activities, ranked social classes, and participation in pan-
Mesoamerican interaction networks indicates a highly complex social configuration at Middle Formative Chalcatzingo (Grove 1984, 1987).

**The Mixteca Alta**

As noted above, the Mixteca Alta region has been studied primarily for its Postclassic and Colonial period occupations (Byland and Pohl 1994; Lind 1979; Smith 1973; Spores 1967, 1984), whereas the Formative period has received much less attention. It has long been assumed that Formative societies in the Mixteca Alta lagged behind those in the Valley of Oaxaca and in other regions of Mesoamerica. Nevertheless, survey data suggest that there were significant population centers in the Mixteca Alta by the Early Formative period, and their demographic and sociopolitical parameters were on par with the Valley of Oaxaca (Balkansky et al. 2000). Because the Mixteca Alta has not been well-documented due to limited archaeological surveys, I provide some details concerning its geography and history.

The Mixteca region of Oaxaca State is extensive and divergent, extending about 270 kilometers from southern Puebla to the Pacific Ocean and about 180 to 200 kilometers from eastern Guerrero to the western edge of the Valley of Oaxaca (Spores 1984). Elevations run from sea level to 3,000 meters, and climate, depending on altitude and topography, ranges from hot and dry to cold and humid. The large area known as the Mixteca has been divided into the Mixteca Alta, Baja, and Costa based on elevation and corresponding microenvironment (Alvarez 1998). The core area for the development of Mixteca cultures and the central focus of the present archaeological study is the Mixteca Alta, but Mixtec-speaking peoples and their institutions extended over a vast and diversified geographical domain by the Postclassic period (Bernal 1966; Spores 1984). In the Mixteca today reside people who are ethnically Mixtec, Chocho,
and Triqui. The Mixtecs proper, those who still speak Mixtec languages, use the term “Nudzahui” meaning “people of the rain place” to refer to themselves (Arellanes Meixueiro 1996).

The Mixteca Alta is characterized by high rugged mountains with a few narrow valley pockets spread among them. The main valley pockets are Nochixtlan, Achiutla, Tlaxiaco, Coixtlahuaca, Juxtlahuaca, Tamazulapam, and Teposcolula (Dahlgren 1963). Among these valleys the largest by far is the Nochixtlan Valley (approximately 15 square kilometers), which itself is made up of several sub-valleys. However, the entire area of the Nochixtlan Valley does not compare to the much larger size of the Valley of Oaxaca. In terms of natural resources, people hunted deer, turkeys, doves, quail, and rabbits for meat, hides, and feathers (Spores 1984). Corn, beans, and squash were cultivated throughout the Mixteca, and chilis and gourds were grown in most areas (Spores 1984).

In the past, the emergence of social complexity in the Valleys of Oaxaca and Mexico was thought to be a result of their environments, in that nearby lakes or high water tables enabled the adoption and development of plant domestication and agriculture (Palerm 1955, 1966, 1972; Palerm and Wolf 1957, 1961; Parsons et al. 1983; Rojas Rabiela 1991). Archaeologists doubted whether social complexity could independently emerge in an environment like that of the Mixteca Alta. Assuming that the Mixteca did not favor the emergence of social complexity, its urban revolution was believed to result from outside influences or even Zapotec conquest from the Valley of Oaxaca (e.g., Flannery and Marcus 1983; Spores 1984). Recent archaeological survey data nevertheless suggest that the mountainous environment did not hinder the early
development of social complexity in the region. In fact, in Middle to Late Formative
times population densities and social complexity in the Mixteca Alta equaled and may
have surpassed that in the Valley of Oaxaca (Balkansky et al. 2000). In other words,
these ancient peoples developed social organization and economies equivalent in scale
and complexity to the other civilizations of Mesoamerica.

Over many centuries, the mountainous terrain has undergone and is currently
undergoing severe erosion due to a combination of soil composition, topography, and ill-
conceived land use practices (Alvarez 1998:124; Kirkby 1972:1). The Mixteca Alta used
to be completely forested, but much of the forest cover has been cut down throughout
human history for agriculture and firewood (Kirkby 1972). Other detrimental land use
practices, such as the introduction of grazing animals and the abandonment of terraces
after Spanish contact, have exacerbated erosion. Today the Mixteca Alta has some of
the highest measured rates of erosion anywhere in Mesoamerica. Regional settlement
pattern data suggest that terracing and the social organization requisite for terrace
agriculture formed an early stable way to live and produce in this area (Balkansky et al.
2000).

Santa Cruz Tayata

Details of the Santa Cruz Tayata archaeological project will be described in the
following chapter, so here I will briefly introduce the site and discuss characteristics of
its Cruz phase, equivalent to the Early and Middle Formative periods in Mesoamerica.
Santa Cruz Tayata is located in the Mixteca Alta, within the modern district of Tlaxiaco
(Figure 4-1). Santa Cruz Tayata was identified as one of the largest pre-urban
Formative period centers in the Mixteca Alta during regional archaeological surveys in
1994, 1995, and 1999 (Balkansky 1998; Balkansky et al. 2000). This settlement was a likely precursor to the later urban center at Huamelulpan (Balkansky 1998).

Santa Cruz Tayata was first settled during the Early Formative Early Cruz phase (by 1200 B.C.), and its ceramics are recognizable as part of Mesoamerica’s Red-on-Buff horizon. Some pottery also exhibits the later pan-Mesoamerican excised motifs (Balkansky et al. 2000). Despite serious erosion problems, Tayata has been shown to have remains of at least four platform mounds that date to the Formative period. Because there is no significant occupation after the Late Cruz phase, Santa Cruz Tayata provides data to study the development of an early sociopolitical center in Oaxaca undisturbed by both later occupations and modern construction (Balkansky et al. 2000). Surface survey and excavation data clearly indicate that Tayata participated in interregional pan-Mesoamerican networks during the Formative period.

The chronology of the Mixteca Alta has been broadly divided into four different phases from the Early Formative (1500 B.C.) through the Late Postclassic and Historic (A.D. 1500). The earliest phase has been called the Cruz phase (1500-300 B.C., Early and Late), followed by the Ramos phase (300 B.C.-A.D.150, Early and Late). These two phases are contemporary with the Early through Late Formative periods in Mesoamerica. The Las Flores phase (A.D. 150-1000) pertains to the Classic through Early Postclassic periods of the Mixteca Alta, and the Natividad phase (A.D. 1000-1520) is contemporary with the Late Postclassic period. The Mixteca Alta was first occupied in the Archaic period (6000-1500 B.C.) and Early Formative village life was well underway by 1350 B.C. Late Formative urbanism and state formation began by 300-200 B.C. when many sites in the Mixteca Alta were abandoned (Balkansky et al. 2000).
period cities occupied most Mixteca Alta valleys by A.D. 300. As noted above, occupation of Santa Cruz Tayata began in the Early Cruz phase, and the site declined by the beginning of the Ramos phase.

**The Cruz Phase (1500-300 B.C.)**

The Cruz phase has been divided into Early and Late subphases corresponding to the Early and Middle Formative periods in Mesoamerica. It was during the Early and Late Cruz phases that Mixteca Alta villages took root and became the basis of the later urban civilization (Balkansky et al. 2000). There were 55 Early Cruz sites occupying 242 ha, and each valley in the Mixteca Alta had a cluster of sites, including one main political center (Balkansky et al. 2000). Some of the Early Cruz centers have monumental construction (Spores 1983) and exotic items such as ornamental shell and obsidian on the surface (Balkansky 1998). In terms of the Cruz phase ceramics, common designs were double-line break motifs on tanware bowl rims and the carved “fire-serpent” on cylindrical gray bowls. These decorated vessels have been recovered at most of the sites, not simply the main centers (Balkansky et al. 2000). Moreover, the similarities between the pottery and figurine styles in the Cruz phase and those at other contemporary sites in Mesoamerica suggest the Mixteca Alta’s linkage with pan-Mesoamerican interregional networks (Spores 1983). However, there is no clear archaeological evidence that can answer the question about exactly when the Mixteca Alta had economical or socio-political ties to other parts of Mesoamerica.

By the Late Cruz phase, there were 237 sites covering 1,183 ha, including pronounced two- and three-tier settlement hierarchies in each valley (Balkansky et al. 2000). Early Cruz sites such as Penasco-Tlacotepec, Santa Cruz Tayata, and La Providencia remained the local head towns in the Late Cruz phase (Balkansky et al. 2000).
Major Late Cruz sites had four to six mounds and a plaza, but most of the sites during this period did not have apparent non-residential architecture (Balkansky et al. 2000). By the later part of the Late Cruz phase, non-residential architecture in the Valley of Oaxaca exceeded that in the Mixteca Alta (Kowalewski et al. 1989:105), and it is clear that more effort in non-residential architecture construction in the Valley of Oaxaca was associated with the rise of Monte Albán (Balkansky et al. 2000:372; Marcus and Flannery 1996). This fact suggests that non-residential architecture construction in the Mixteca Alta area was not as important as in the Valley of Oaxaca. The scarcity of non-residential architecture is one of the reasons why the Mixteca Alta has been considered to lag behind the Valley of Oaxaca (Bernal 1966), but the amount of non-residential architecture and the scale of monumentality do not always indicate the importance, degree of maturity, or power of sites. Thus, although there is an assumption that the Early and Middle Formative Mixteca Alta lagged behind the Valley of Oaxaca and other parts of Mesoamerica (Bernal 1966; Blanton 1978; Caso et al. 1967), recent extensive surveys in the Mixteca Alta (Balkansky et al. 2000) have indicated that the assumption needs to be reconsidered.

**Summary**

I began this chapter presenting characteristics of Mesoamerica to illustrate the interconnection of diverse societies. I introduced the Gulf Coast Olmec, the Valley of Oaxaca, and the Highlands of Mexico to show a variety of socio-cultural forms, while discussing Olmec issues with the Mixteca Alta and the Valley of Oaxaca. I then discussed characteristics of the Mixteca Alta and Cruz phase developments, when Santa Cruz Tayata flourished as one of the regional centers. The next chapter follows from this discussion by detailing the design and implementation of the archaeological
survey, mapping, and excavation project at Santa Cruz Tayata. The main purpose of Chapter 5 is to discuss and interpret features and artifacts recovered in association with residential structures.
Figure 4-1. Mixteca area map: the location of Santa Cruz Tayata
CHAPTER 5
EXCAVATIONS AT SANTA CRUZ TAYATA

In this chapter I explain the methods and strategies the Santa Cruz Tayata project employed to gain as complete a picture as possible of the site during the Cruz phase. The NSF project, directed by Dr. Andrew Balkansky, divided the site into areas A and B, mapped, surface collected, and excavated hilltop areas to obtain information about dwellings, mounds, and public architecture construction, length of residential occupation, and associated artifact assemblages (Duncan et al. 2008; Balkansky and Croissier 2009). In regards to my work on the project, I participated in mapping and surface surveys in 2003 and excavations in 2004 with funds from the Foundation for the Advancement of Mesoamerican Studies, Inc. (FAMSI). Even though the original purpose of my FAMSI project was to collect the dataset and create a GIS data base for intra-site analysis, that work could not be achieved due to time limitations, technical difficulties, and other factors in the field. However, I was able to conduct excavations at residential and non-residential structures, and that research recovered features and a variety of artifacts, including the ceramics that I have utilized for the techno-functional analysis discussed in Chapter 6. That analysis and other laboratory studies have provided a unique set of data, which have allowed me to analyze house-centered practices and possible processes of social change. The analysis reveals how the members of residential groups lived, what kind of strategic actions played roles in creating relations within and between social houses, and how social processes of differentiation occurred in this regional center of the Mixteca Alta.

As noted above, this chapter describes the research methods in greater detail with a special focus on the excavation of a dwelling I conducted under the supervision of Dr.
Andrew Balkansky. I first introduce the strategies of surface survey, mapping, and collection designed by the project director, and describe what was recovered from those initial surveys. I also mention the excavation methods and discuss details about excavations of the residential structure, along with my preliminary analysis of the socio-economic condition and activities of the dwelling based on recovered features and artifacts. I then turn to another residential structure in a different zone (Excavation 2) and discuss my interpretations of the practices engaged by members of social houses, although I note that I did not conduct the excavations of Excavation 2 zone (the data from this dwelling are relatively fragmentary). Finally, I conclude with a discussion of comparing these two social houses in Santa Cruz Tayata to indicate that social houses as corporate agents took different strategies to differentiate themselves from others.

The Santa Cruz Tayata Project

In 2003 I participated in the first stage of the three-year research project at Santa Cruz Tayata, funded by an NSF grant to the principal investigator, Dr. Andrew Balkansky of Southern Illinois University. That research was carried out with permission from Mexico's Instituto Nacional de Antropología e Historia (INAH), the Centro INAH Oaxaca (the state capital), and the authorities in the town of Santa Cruz Tayata. The 2003 field season was devoted to surface collections and the creation of a site map using a Topcon Total Station. As a member of the project, my first task was to map the entire settlement area of Santa Cruz Tayata and its environs, including some of the surrounding topography. We began work in the first week of May and finished mapping and surface collecting by the last week of July.

To map the site we established an arbitrary grid where the first mapping station, or primary datum point (PDP), was assigned E 1000 N 1000 and elevation 100 m
coordinates. We oriented the grid to magnetic north. This primary datum point was permanently marked by a nail hammered in an outcrop of rock on the hilltop of Santa Cruz Tayata. Consequently as we moved the location of the mapping station, we marked all station points with nails and markings on the ground or on bedrock outcrops. We did this so that the mapping points could be retraced in the future. In addition, as we established areas for excavation, we marked the datum points for each excavation area with a nail that was left on the ground even after we finished working in an area. The location of each of the excavation area datum points was also recorded with the total station and integrated with the master site map as well.

We mapped by taking measurement points along all cultural features visible on the surface of the site, such as early platform mounds, stone foundations of households, terrace walls, pathways, and the perimeter of structures. We also took measurement points for the natural slope and terrain, the perimeter of eroded areas, and collection area locations. In all, we took 4,733 measurement points. All measurement and notebook data were downloaded, transformed, and manipulated using Surfer 7.0 and Arcview software. I generated topographic contour maps in Surfer, which I later exported to Arcview to show the elevation range of the site (Figure 5-1).

Despite erosion problems, all major cultural and natural features at Santa Cruz were mapped. We mapped a total of 2 km² which included the 70 ha core of the site, to identify the boundaries of Santa Cruz Tayata (Figure 5-2). It is not clear, however, whether some of the outer zones belong to Tayata proper or pertained to its nearest satellites because of erosion in the area. Because of this situation, the issue of ultimate
site size is difficult to resolve. While mapping, we took photos and notes on terraces and structures, conditions of preservation, surface artifacts, and excavation potential.

**Surface Collections**

Collections were made at the same time as mapping, and collection units were chosen based on both random and non-random sampling strategies. Collection area locations were determined in two ways. First, we randomly placed collection areas across the various sectors of the site as they were being mapped. Then, we made collections in places associated with specific surface features, such as platform mounds, terraces, or visible house foundations. While surface collecting we took notes on the excavation potentials for each place sampled.

The surface collection phase of the Tayata project served two purposes. The first was to identify residential areas that might be good candidates for excavation based on their state of preservation and their representativeness of the residential occupations found throughout the site. The collected artifact assemblages provided information on the artifact inventory ranges of the various residential areas. By comparing these ranges, we were able to assess the representativeness of the various residential areas, allowing us to ascertain that the excavations to be carried out would be in residential areas representative of the occupations found at Santa Cruz Tayata. Second, through surface collections we wanted to identify and map the extension of different temporal occupations found at the site. Based on the surface collections, we identified Cruz period (1500-300 B.C.) occupations on the north-east side (the highest location) and north side of the site. We mapped the full extension of the Cruz phase settlement and the later-period occupation that extended to the adjacent hills from Santa Cruz Tayata.
The data generated by the surface collections allowed us to identify several patterns. First, the surface ceramic artifact results revealed the presence of rough tanware everted rim bowl fragments (a Cruz period diagnostic type) near the primary mound of the site. Almost all surface-collected ceramics were Cruz period diagnostics or undiagnostic utilitarian types in vessel forms that could fit well within a Cruz period occupation. Throughout the site the most common ceramic artifacts were coarse brown jar and bowl fragments. Near the highest point of the site and the central platform mound (Mound 1), we found pieces of Leandro Gray pottery along with relatively high densities of obsidian, one of the critical raw materials circulated throughout Mesoamerica.

The surface ceramic data indicate that throughout the entire Cruz period settlement there were only slight differences in material culture indicators of social status. The most common ceramic types encountered were utilitarian coarse paste vessels, mostly jars and finer paste bowls. This basic surface artifact assemblage was representative of the occupations that covered the majority of the site. Only slight differences could be detected among the artifact assemblages from the area where a central platform mound, other low mounds, and a possible plaza were located. From all these results, it was decided to focus on some locations that showed additional signs of residential occupation, such as a high density of construction materials on the surface, ground stone fragments, and visible stone alignments.

**Test Unit Excavations**

From the mapping and surface collection phase of the study, we were able to identify some distinct site areas. The core area of the site was arbitrarily divided into sub-areas A and B. That division was necessary because the size of the site was too
large to cover at one time, and our primary focus was on revealing major Formative period features. Excavations began in the second field season of 2004, and involved initial 2 x 2 m test-unit excavations at Area A of the site (Figure 5-3). Area A was chosen for intensive excavation because we could identify primary and secondary mounds dating to the Cruz period, significant concentrations of surface artifacts, and surface indications of structures such as stone alignments or the presence of a lot of construction materials. In detail, surface surveys and collections in area A indicated that the central platform mound and its surrounding area had high densities of obsidian and fragments of marine shell. Also, possible non-residential architecture dating to the Cruz period is located on the opposite side of the large central mound, and is situated on a raised platform that has a series of wall constructions. With respect to area B, the project started to excavate selected locations in early summer 2004, though I exclusively excavated residential and non-residential structures in area A.

The aims of test unit excavations were to evaluate patterns observed in the surface collections, establish sequences of occupation, and locate intact subsurface remains for more extensive subsequent excavations (following Spencer and Redmond 1997). Excavations at other Formative period centers in Oaxaca (e.g., Marcus and Flannery 1996; Whalen 1981; Winter 1972) suggested that residential structures with storage areas, craft production loci, non-residential buildings, and graves might be uncovered in the excavations. The initial excavations were placed in contexts both with and without surface architecture, and distributed across area A (and later area B). The test excavations not only told us about the various uses given to different sectors of the site, they also enabled us to understand the history of human habitation in this locality.
Horizontal Excavations

The objective for horizontal excavations was to define the contexts of structures comparable to other excavated Formative period sites (e.g., Flannery 1976; Grove and Cyphers Guillén 1987; Lesure 1997; Spencer 1982). Both residential and non-residential contexts were sampled. These contexts included the large central platform mound, the area adjacent to that structure, the lower platform mounds, residential terraces, and visible dwelling foundations. Stratigraphic and horizontal excavations revealed complete architectural layouts and activity areas for each level. I mainly conducted horizontal excavations in the north-eastern part of area A, where a residential structure (House 4) and its associated features, as well as non-residential architecture with unique stone foundations, were recovered.

Excavation Methods and Strategies

Each excavation area was laid out as a trench divided into 2 x 2 m excavation units. For each excavation area we established a datum point independent of the full-site grid. This datum point was used to lay out the grid for the excavation area. Once an excavation area was laid out, we set up the second point that would serve as the arbitrary zero elevation point. The zero elevation point was used to record all excavation levels using a line-level; this allowed us to quickly establish relative levels for the surface and subsequent layers and features. We usually picked a zero elevation point somewhere on top of the excavated terrace, given the need for flexibility to move up and down in terraced terrain. From the zero elevation point we obtained a relative elevation for the excavation area datum point, and as the datum point was integrated into the full-site grid, we obtained excavation level information in relation to the entire site map.
Each 4 square meter excavation unit on a grid had a unique name (e.g., N4302 E4484). We initially excavated in 10 cm levels. However, once the natural stratigraphy of a place was understood, we proceeded to excavate in natural stratigraphic layers. We used the term “level” to measure the depth throughout the excavation, and the term “layer” for the natural stratum. We excavated with shovels and trowels for the most part, and dental picks and brushes when excavating burials. In each area we excavated to the natural, sterile soil layer first to see the full depth of the stratigraphy. For all cultural and natural soil layers we noted the texture, color (using a Munsell soil color chart), consistency, distribution, depth, thickness, artifact density, and the presence of roots and burrows.

The plow zone and its materials were excavated and processed in the field and laboratory as were all other soil layers and excavation materials. All excavated soils were sifted in a ¼” mesh. Ceramic, lithics, and bones were bagged, and labeled. All bags were labeled with information about the site, sector, excavation area, excavation unit, layer, level or depth of the deposit, initials of the excavators, and date of excavation. Back at the field house we re-bagged and re-tagged damaged bags. We assigned each bag a control number, and we then entered the bag number along with all the tag information into a master bag list. All artifacts, except for soil, bone, or carbon samples, were washed and stored for analysis. In addition, the location of all recovered artifacts and architectural features was recorded in our field notes and drawings according to excavation unit (XY coordinates) and level or depth (Z coordinates). We made scale drawings of profiles and plan views, and took digital photographs of all architecture, features, and soil types encountered in excavations.
House 4: Analysis of Features and Activities

House 4 (Balkansky and Croissier 2009:62) was found in a test excavation at Area A. Once we identified a residential occupation and signs of construction, we extended our initial test trench into more extensive and horizontally broad excavation blocks. The purpose of expanding our excavations horizontally was to expose the entire residential complex and ascertain chronological relations between construction and features. When we expanded our excavation blocks we used 2 x 2 m excavation units that could be excavated whole, in half as a 1 x 2 m unit, or as a 1 x 1 m quarter of an excavation unit. By the time we extended test excavations into these larger blocks we had a good idea of the natural stratigraphy of the place and so excavated in natural stratigraphic layers.

House 4 was located in a south-eastern part of area A (Figure 5-4), where two low mounds face each other and a plaza might exist between them. Also, this location is the highest elevation at the site. We identified a terrace next to House 4 and considered it to be a possible area for excavation because of the amount of construction materials found on the surface and also because, toward the back of the terrace, we identified and mapped a square stone alignment. We determined that this building was possibly non-residential architecture and we assumed some domestic structure might be located near it (Figure 5-5).

Excavation units around this residential structure started to turn up large quantities of ceramics, and the excavation area was expanded unit by unit to define the full extent of this structure. We eventually identified domestic features such as trash and storage pits as well as burials (Duncan et al. 2008). The walls of the structure extended to at least 4-5 meters wide by 4-5 meters long, for a total area of 16-25 square meters. However, the exact dimensions of the structure are difficult to determine because some
parts of the stone foundations had disappeared, and some post holes were hard to identify (Figure 5-6). In terms of a spatial relationship with the non-residential architecture, this Cruz phase residence was located approximately 10 meters east of the non-residential structure (Figure 5-7), and a broad “carpet” of small stones suggests the existence of a small plaza between these two structures.

**Stratigraphy and recovered artifacts**

In the area where House 4 was located (N4302 E4486), the stratigraphy consisted of five layers (excluding some intrusions and minor layers). Layer I was the plow zone that extended across the entire surface of this area. It was a firm to very hard medium brown (5 YR 4/4 reddish brown) loam that had a lot of roots and insect burrows, as well as a lot of mixed rock and gravel. It was about 15-30 cm thick and followed the natural slope of the surface. The plow zone had a medium concentration of ceramic and lithic artifacts. These artifacts do not have a clear cultural context, so they were not taken into consideration in the artifact assemblage analysis. Many ceramics from the plow zone were known Cruz type vessels.

Layer II was a dark reddish brown (5 YR 3/3) organic soil that spread and faded to the east, and it was about 10-20 cm thick. This layer had a lot of roots and insect burrows and a low-to-medium artifact density. Most of the pottery fragments in this layer were rough tanware jars and bowl fragments.

Layer III was a 10-15 cm thick hard clay loam of dusky reddish brown color (5 YR 6/4 light reddish brown). It had a medium density of artifacts, few roots, and few insect burrows. As in Layer II, the ceramic artifact types that dominated in this layer were utilitarian jars and bowls.
Layer IV was immediately above the stone foundation level, and was a 10-20 cm thick clay loam of dark reddish gray (5 YR 4/2 dark reddish gray). Layer IV had a medium density of ceramic and lithic artifacts and a very low density of bone material. It had few root and burrow intrusions and a low density of mixed gravel. The most common artifacts recovered were tanware bowl fragments.

Layer V was right at the level of House 4’s stone foundations. It was a 5-15 cm thick reddish gray to brown (2.5 YR 5/4 reddish brown) silty clay soil that underlay House 4 and lay directly on top of the sterile natural layer that makes up the entire hill of Santa Cruz Tayata. Layer V had a low-to-medium density of ceramic and lithic artifacts. There was no significant concentration of obsidian blades or other lithic artifacts. Layer V contained artifacts that were at some point in the past, either during the House 4 occupation or after its abandonment, in the general proximity of the house itself. The recovered artifacts occurred within the walls and roof debris of the house. Furthermore, Layer V had not been damaged by plow disturbance. For these reasons I included the artifacts from this layer in the house artifact assemblage analysis, keeping in mind that their presence in the structure may be due to post-abandonment processes. The stone foundation of the house lay approximately 1.65 m below the surface.

Artifact assemblage data from the house excavations provide information on the likely household consumption practices and in turn about householder activities and their socio-economic status (Smith 1987:306). The limited disturbance from erosion and mechanized farming suggest that most artifacts within the House 4 zone represent activities that took place there in ancient times, especially the artifacts from layer V. In my House 4 artifact analyses I disregarded artifacts from the plow zone layer. However,
most of the artifacts obtained in the House 4 excavations came primarily from middens and burials, and only secondarily from material preserved beneath underlying roof or wall collapse debris in layer V.

**Socio-economic status of residents**

Out of more than 10,000 total ceramic sherds retrieved during the House 4 excavations, fragments of luxury ware vessels were rarely recovered, and only a small number of complete vessels were found. In addition, my laboratory analysis identified a limited number of ceramics with pan-Mesoamerican motifs or ceramic styles, perhaps inspired by the Valley of Oaxaca center, where they had occur as part of the ceramic assemblages of higher status social houses (Flannery and Marcus 1983, 1994).

The most common ceramic artifacts found in House 4 were utilitarian bowls, followed by finer utilitarian bowls and cylinders, and then utilitarian jars. Ceramic artifacts that were much less common were finer utilitarian jars, special forms with ritual functions such as braziers, fine gray ware bowls, and luxury wares. However, when we consider the size of the structure and thus the number of inhabitants in this dwelling, the recovery of a significant proportion of large serving vessels in the House 4 ceramic assemblage indicates unusual food consumption practices. Higher frequencies of dog and fish remains at House 4 provide some evidence of feasting (Duncan et al. 2008:5315).

House 4 inhabitants utilized obsidian blades. However, very few obsidian flakes or cores were found. In addition, House 4 occupants possessed ornaments and tools made of marine shell such as pearly and spiny oysters from the Pacific Coast (Figure 5-8). The presence of multiple worked shell pieces and shell-production debris from the floor and middens suggests that members of this house engaged in crafting activities.
(Balkansky and Croissier 2009:61; Duncan et al. 2008). Moreover, a great proportion of ceramic figurines came from the middens of House 4, and some are very different from the figurines of House 2 (Figure 5-9).

Overall, even though the artifact assemblage suggests that House 4 was not the residence of typical elites, this social house was relatively wealthy and probably engaged in competition with rival houses, because inhabitants could access interregional networks and secure imported items, manufactured some crafts, provided certain burial treatments (discussed below), and showed great hospitality through feasting (Balkansky and Croissier 2009; Duncan et al. 2008).

Activities

My laboratory analysis indicates that the most common ceramic artifacts found in House 4 were coarse paste jar and fine paste bowl fragments. For example, there was a great number of utilitarian jars, bowls, and cylinders in the northern section of the house, and this fact suggests that cooking and food-serving activities took place somewhere around that section of the residence.

The artifact assemblage found in the House 4 excavations suggests that the inhabitants or nearby neighbors may have been engaged in non-specialized domestic and subsistence activities. These activities would have included cooking, storing and grinding corn, carrying and storing water, hunting, informally producing expedient stone tools and arrow shafts, and working or scrapping wood or leather.

The presence of possible open-air firing features suggests that inhabitants of this residence may have engaged in pottery production, even though no evidence has been found to determine whether pottery production went beyond the needs of the household (Balkansky and Croissier 2009:62-63). In regards to lithic production, the lithic artifacts
indicate that some informal expedient tool production may have taken place in House 4, but the amount of lithic artifacts retrieved were nowhere near the quantities normally found in lithic tool production areas (Burton 1987; Clark 1986).

In addition, there is evidence of dog feasts at Santa Cruz Tayata, comparable to the data from Tierras Largas and San José Mogote in the Valley of Oaxaca (Flannery and Marcus 1994; Marcus and Flannery 1996). Feature 99 of Tierras Largas contained the remains of at least five dogs, all systematically butchered. All bones were systematically divided, as if they were given to certain people with specific parts of meat. Also, all the shoulder blades had been similarly smashed in order to free the humerus and the rest of the forelimbs. Similar feasting evidence also was found at a house at San José Mogote (Marcus and Flannery 1996).

In Santa Cruz Tayata, multiple dog remains were recovered from midden 1 (Figure 5-10) and another midden feature of House 4. All the dog bones were burnt, and there was a trace of butchering or cutting marks. Burning patterns on the bones suggest that the dogs were burnt after butchering (Duncan et al. 2008:5316). I excavated only one - half of midden 1 in House 4, but I assume that we would have found more dog and other animal remains if the whole midden had been excavated. Even though dog and other animal bones came from middens in the Excavation 2 zone, there was no significant concentration of dog remains (Duncan et al. 2008). The data suggest that large quantities of dog meat were consumed in or around House 4 (Duncan et al. 2008:5316). Also, another interesting point is that we recovered at least five dog figurines within that midden pit (Figure 5-11), and no dog figurines were recovered from any other feature of the site. Moreover, the presence of extremely high numbers and
proportions of serving vessels (see details in the following chapter) indicates that this residence could have been one of the major locations for dog feasting at Tayata at that time.

**Overall description of House 4**

The Cruz phase House 4 was located approximately 10 m east of the non-residential structure. The latter is situated on a raised platform and has a series of wall constructions. A small plaza area might have existed between the non-residential structure and House 4. The zone that includes residential and non-residential structures is located on the east side of the large central mound (Figure 5-3). House 4 had stone foundation walls and upper walls filled with small stones and clay. This appears to be the same pattern as in the Valley of Oaxaca, where dwellings feature stones placed at wall bases to support the foundation and wooden posts in the corners; those walls largely consist of reeds or cane plastered with mud (Flannery 1976; Marcus and Flannery 1996).

Two burials were recovered under the floor of the House 4 zone, and their associated offerings included shell-bead necklaces, decorated pottery, and fired-clay figurines (Duncan et al. 2008:5317). Also, there was a possible doorway in the northern part of the residential structure, and a trash pit and a suspected storage pit were also recovered just outside of this possible doorway. The probable storage pit that I excavated was roughly bell-shaped and contained some partial ceramic vessels, one complete figurine, one metate, obsidian blades, shell ornaments, and a large number of ceramic sherds. A trash pit that I also excavated is located just 2 meters west of the storage pit. It contained abundant organic remains, which provided ample carbon samples for dating. We also found a large number of ceramics, obsidian blades, worked
shell and shell ornaments or tools, multiple dog remains, animal and human figurines, and Olmec-style figurines at that midden (Duncan et al. 2008:5315). Because that midden occupies a small area near the house, we suspect that it was a household midden rather than a community midden such as was sometimes found in the Valley of Oaxaca (Flannery and Marcus 1994:28-31).

In terms of its construction, the House 4 residential structure does not have features of a high-status dwelling. It does not sit atop a small platform and does not have an impressive stone foundation and walls whitewashed with clay and plaster (Flannery 1968; Flannery and Marcus 1983). However, all the recovered artifacts suggest that its residents were able to access a variety of items that could not be acquired through local exchange networks. Also, possible storage features may indicate a higher economic status of this social house.

We collected carbon samples throughout the excavation, some of which were sent to the Beta Analytic Radiocarbon Dating Laboratory by Dr. Balkanky. One sample came from the deeper part of the midden feature of House 4 (Table 5-1), an older cultural layer, Layer V, that is on the level of a presumed floor (sample # 048). After calibrating, the results suggest that the most likely calendrical date for the sample is around 1260-1000 cal B.C. (Duncan et al. 2008). The results suggest that a residential occupation may date to the late Early Formative to Middle Formative period.

There are, however, other factors to consider in dating House 4. Upon comparing the artifact assemblages associated with the carbon sample, I found little difference in ceramic styles; they can all be catalogued as characteristically Early and Late Cruz. We rarely find Ramos-style (Late Formative) ceramic types in this house. Dr. Balkansky
conceded that the ceramic assemblage from this residential structure belongs to the Cruz phase.

**House 2: Analysis of Features and Activities**

A general outline or form for the residential structures in the Excavation 2 zone was difficult to define because the foundation area had been heavily damaged and multiple residential structures had been rebuilt over older ones. Nonetheless, based on the recovered archaeological data, this residential structure (or structures) was not a typical elite or wealthy house. However, its inhabitants possessed a certain number of imported items and many decorated fine vessels. Techno-functional analysis of pottery (detailed in Chapter 6) and limited evidence of fauna remains indicate no clear evidence of feasting, but the presence of red-on-buff vessels suggests that this area might have been occupied earlier than the area where House 4 was situated. Moreover, the presence of massive wall constructions, relatively large architecture, and some large middens may indicate long occupancy in this area of the site. However, like House 4, there is no archaeological evidence of a significant concentration of luxury wares or items, nor of special burial treatments (Duncan et al. 2008).

**Location and excavations**

House 2 is located in the north-western part of area A, approximately 250 m away from the House 4 zone (Figure 5-3). The residential structure(s) was on the north end of the hill, isolated from the central zone where three mound structures form a linear arrangement. The elevation of this house area is relatively low, and Classic period pit features were found on an adjacent hill slope. There was not much expectation of recovering large-scale high-status Cruz houses in this isolated area, but dispersed
settlement remains suggest that some successful social houses occupied and maintained their house estates outside the core areas.

House 2 was found in test excavation unit N4504 E4366, and the trench was set up in 2 x 2 m excavation units. When Tayata project members excavated this unit, wall remains of the house were uncovered no more than 35 cm below the surface. The excavators decided to expand the trench to open up the entire extent of the house, and this became an excavation block 10 x 14 m in size. The excavation area was divided into 35 units (A-E for north axis and 1-7 for eastern axis), such that the trench, N4504 E4366, became C3 in this system.

The excavators eventually identified house features such as trash pits, burials, postholes, and floors. The walls of the residential structure were at least approximately 7-8 meters wide by 5-6 meters long, covering a total area of 35-48 sq m. However, the actual size of the Cruz phase residence will never be known because the wall construction of the older Cruz residential structure(s) was removed for reuse, and the structure itself was demolished and buried, or else rebuilt. Even though this structure was located in a relatively isolated zone, the evidence of long occupancy in the same space suggests that house location was socially meaningful (Gillespie 2000c). The evidence of long occupancy also suggests that this social house might have had hereditary proprietary rights to land and structures (e.g., Gillespie 2011).

I did not conduct excavation in this zone, and the stratigraphy of the House 2 zone has not been well described. Also, the presence of some large middens makes an identification of the precise stratigraphy of this zone more difficult to understand. In the process of digging large trash pits, the original layers of the house had been destroyed.
or significantly manipulated by ancient inhabitants. Layers of the trash features do not represent regular sedimentary processes, so artifacts in the lowest part of the trash pit do not always indicate that they were used in the earlier cultural phases. Fortunately for the archaeologists, Santa Cruz Tayata and satellite sites were abandoned, and there was no significant occupation after the Late Cruz phase (Balkansky et al. 2000), so we can generally assume that recovered artifacts from the structure(s) of the Excavation 2 zone represent what was acquired, made, and used in the Cruz phase.

**Recovered artifacts**

As in all excavations, the patterning of artifacts retrieved in the House 2 zone is the unintended result of both ancient cultural activities and historical and modern disturbances and natural taphonomic processes. Assuming many portions of the assemblage are the results of ancient activities, because of only limited disturbance from later occupations as well as from erosion and mechanized farming, the recovered artifacts could indicate possible consumption practices and other strategic actions of the residents of this zone. As with House 4, House 2 artifact assemblages suggest a stable non-elite occupation. House 2, however, had a much higher volume of artifacts than House 4. This is mainly because multiple households occupied the same location for a longer time period, while the occupation history of House 4 is unknown. Also, there was a size difference between House 4 and House 2. Moreover, some large trash pits associated with this residential structure(s) contained a large number of vessels and other artifacts. Most of the excavated artifacts are likely the result of secondary post-abandonment refuse because nearby neighbors could dump their trash in the abandoned structures.
Most of the artifacts obtained in the House 2 excavations came primarily from burials and middens. The fewest were found in hearths and or directly on floors. The pottery assemblage from a specific locus of this house was statistically analyzed in my laboratory research. Judging from the distribution of earlier Cruz pottery, such as red-on-buff sherds, the northwest and southwest sides of the excavation zone could represent earlier occupations. Thus techno-functional analysis was conducted on pottery assemblages only from those sections. The House 2 analysis disregarded artifacts recovered in plow zones. The most common artifact types found in this structure were coarse paste jars and finer paste bowls. There is no significant difference in the type and style of the pottery assemblages between House 4 and House 2, though the proportion of large serving vessels is higher among pottery assemblages from House 4 (see Chapter 6).

**Socio-economic status of residents**

Out of more than 10,000 sherds retrieved during House 2 excavations, only a limited number of fragmented luxury vessels were recovered, and very few complete vessels were found. In addition we found a limited number of ceramics with pan-Mesoamerican motifs. Although my analysis indicates that the House 2 artifact assemblage contained a greater proportion of Fine Gray, Atoyac yellow-white, and other luxury wares than House 4, the overall House 2 assemblage still fits well within the bounds of a non-elite artifact assemblage. The most common ceramic artifacts were utilitarian jars, cylinders, bowls, and finer utilitarian bowls. Compared with the House 4 assemblage, House 2 had much higher volumes of artifacts (which may simply represent a longer occupation), but the artifact assemblages are almost entirely utilitarian and represent common domestic and subsistence activities. Unlike House 4,
the proportion of larger and finer serving vessels is relatively low in the pottery assemblage, even though the amount of analyzed samples from the House 2 zone is low.

In terms of lithic indicators of socio-economic status, we found obsidian in House 2 and very little green stone or jade artifacts in the burial context. Inhabitants of this sector of the site or of House 2 used and had access to obsidian and other foreign items. As in House 4, the segment of the population associated with House 2 obtained their obsidian as finished blades (or obsidian cores for crafting), and then used them extensively until exhausted. Although some fragments of shell ornaments have been recovered from this house, the proportion of shell items and worked shell was lower (Balkansky and Croissier 2009:62).

The architecture style and scale and the presence of luxury wares and imported artifacts may suggest that this social house was wealthy, but overall evidence, including simpler burial treatments, indicates this structure did not belong to an elite social house. Moreover, while some complete and semi-complete figurines with pan-Mesoamerican designs were recovered from House 4, suggesting the significance of ritual practices there, only smaller and fragmented figurines were recovered from House 2.

**Activities**

The overall artifact assemblage of House 2 excavations suggests that the neighbors or inhabitants were non-elites who engaged in non-specialized domestic and subsistence activities, even though they might be relatively high status people. The main vessel forms and types were the utilitarian jars and finer utilitarian bowls. The main activities taking place at House 2 were of a domestic nature: cooking, storing food and water, processing domesticated and wild foods for household consumption, and serving
food. The most common informal lithic tool found in House 2 were expedient chert flakes, indicating that some informal expedient tool production may have taken place in this structure. This structure also revealed a good deal of stone artifacts to grind corn, roots, or seeds.

In House 2 we did not find enough evidence of ritual activity beyond the household level, and a limited number of fragmented figurines may indicate less interest in making or using them. In terms of feasting, the presence of some large middens may suggest high food consumption, but it could simply mean that people occupied this area for a long time or that the middens were community middens shared by some neighbors. Even though the amount of pottery I analyzed from this structure is relatively small, my techno-functional analysis of the pottery assemblage (in Chapter 6) along with faunal evidence does not indicate any clear evidence of feasting in this zone.

Although I lack information on any radiocarbon dates from this structure, stylistic analysis of the recovered pottery from House 2 shows no major difference from that of House 4. However, since most House 2 data derive from middens and the structure has not been fully recovered, there is no certainty that the occupation periods of those households were contemporaneous.

**Analysis of House Strategies at Santa Cruz Tayata**

The overall evidence shows that a period of major occupancy of these two residential structures could be contemporaneous and that their socioeconomic statuses were not much different. Neo-evolutionary approaches might interpret those two structures as non-elite houses in a Middle Formative society. However, the inhabitants of each house were not identical in their choice of location, architectural size and style, or types of practices. I would argue that the lack of major inequality between them was
created or maintained through daily practices of houses. Practices need to be understood within their own historical contexts, but at the same time, strategic actions of social house members cannot be understood individually because these actions were constantly modified and developed in the arena of dynamic inter-house competition (Gillespie 2000b:10-11). In this final section, I interpret house practices to show how each house tried to differentiate itself from others by employing different strategies.

**Architecture**

House 4 was relatively small, and its wall construction was thin and low. At this time, there is no evidence that the structure was rebuilt in the same place by incorporating the remains of old residential structures. There are some pit features outside of the house, and there was possibly a doorway on the north side of the house. On the other hand, House 2 was relatively larger and there is clear evidence of long-time occupancy, even though the boundary walls of multiple sequential houses have not been determined. Persistence of dwelling location may demonstrate the development of hereditary proprietary rights to land and structures (Gillespie 2000b:16). The wall size of House 2 was larger, and larger stones were used in its construction. The House 2 structure(s) also had some large pit features from which a significant number of artifacts were recovered.

**Location**

House 4 was located between two low mounds which likely were built after the house was erected (Duncan et al.:5316). House 4 occupied one of the highest locations of the site, and public architecture was constructed just 10 m to the west. The primary mound and those two low mounds were roughly aligned, and plaza areas existed among those mounds (Duncan et al.:5316). We therefore treated this area as a core
zone of area A. House 2, on the other hand, was located on the northwestern corner of the hill-top site, and was at least 200-250 m away from the core zone. Currently available data indicate little correlations between occupation of different locations at the site and status differences, but if future excavations uncover more house structures, we will better understand the use of space in Santa Cruz Tayata.

**Burial Treatment**

No evidence of elaborated burial treatment was found for burials from House 4 and House 2. House 4 had two major burials, where a limited number of luxury items such as small bead necklaces were recovered as grave goods. One of the burials also contained parts of shell ornaments, figurines, burned dog bones, and decorated pottery sherds (Duncan et al.:5317). Based on food consumption practices, acquisition of exotic items, craft production, and burial location in an elite residential zone, the buried individuals might be interpreted as members of a higher-status house (Duncan et al. 2008:5316). On the other hand, House 2 may have had more than five burials, but most had been destroyed in the process of rebuilding structures and digging trash pits. Many scattered human bones were recovered, and thus only a few burials were analyzed for mortuary practices. Like House 4, only a limited number of luxury items were recovered as grave offerings.

**Crafting**

As interregional exchange networks developed during the Middle Formative period, households started to acquire marine shells of different kinds. The people of Santa Cruz Tayata were making shell objects and depositing some shell beads in the residential architecture fills. Shell items from features of the Cruz period consist entirely of products that were likely manufactured at the site such as disk beads and perforated shells and
the debris from marine shell-working (Figure 5-12) (Duncan et al. 2008:5315; Balkansky and Croissier 2009:62). Although utilizing imported raw shell material (Figure 5-13), shell production and use in this time could have been largely meant for internal consumption. However, crafted shell products might have been distributed across the entire community by House 4 (Balkansky and Croissier 2009:62). Household practices of acquiring marine shells, crafting ornaments and tools, and building a distribution network could have been used to create social relations with other houses in the form of producers, distributors, and receivers (Bayman 2002; Isaza Aizpurua and McAnany 1999). Thus, crafted shell items may demonstrate a corporate group identity across the community rather than discrete personal identities. Even though there is no archaeological data from surrounding communities, House 4 or other social houses of Santa Cruz Tayata could have manufactured specific products, such as small perforated shell ornaments of varying degrees of quality, for the express purpose of distributing them to the surrounding communities. Thus, crafted shell items could have helped define the social landscape of the Tayata community relative to others in the Mixteca Alta (e.g., following Bayman 2002).

**Pottery and Artifacts**

I discuss the results of my techno-functional analysis of pottery and some faunal remains in the next chapter, so here I briefly describe pottery and related artifacts from House 4 and House 2. The proportion of fine serving vessels is high in House 4, especially when we consider the proportion between a maximum number of inhabitants in this small house and an expected number of serving vessels for ordinary food consumption. There are shallow and large plates, small cylinders for drinking, and many well-decorated bowls. The diameter of many serving vessels was more than 30-40 cm,
and the size of most jars for cooking and storing was also large. On the other hand, although many serving vessels were recovered from House 2, the proportion of fine large serving vessels is relatively low, and the proportion of poorly-decorated utilitarian jars and bowls was relatively high (see details in Chapter 6). The pottery assemblage was different between two houses in different locations, especially for the relative number and absolute quality of serving vessels. In addition, both houses acquired obsidian, shell, mica, and highly-decorated pottery through interregional exchange networks, but clear evidence of shell working was found only in House 4 (Balkansky and Croissier 2009).

Summary

I began this chapter presenting methods of the preliminary archaeological surveys and test unit excavations of the Santa Cruz Tayata archaeological project directed by Dr. Andrew Balkansky of Southern Illinois University to provide the contextual background for my research. I then discussed how I conducted excavations at the House 4 zone, adding interpretations about social house status and activities. Following the description of the House 2 excavations, I compared what I interpret as two social houses to analyze differences and similarities of possible corporate practices.

No clear social differentiation is noticeable between these two social houses, even though each residence shows differences and similarities in architecture style, distribution of prestige artifacts, presence of certain artifacts, techno-functional aspects of pottery assemblages, and mortuary practices. The conventional elite/non-elite dichotomies, such as burials with distinctive treatments, relative size of houses indicating wealth, occupancy of specific elite or non-elite location of the site, elaborated
architecture, and significant interest in food presentation and unique food consumption, do not fully fit the Tayata data.

If I simply follow the neo-evolutionary criteria of social rank, some aspects show that House 2 was richer and more powerful, but other factors indicate that House 4 was richer and more powerful. Until now, very few house-centered approaches have been applied to Formative societies of Mesoamerica (e.g., Gillespie 1999, 2006; Joyce 1999, 2007), so the research model focusing on strategic practices of Formative period social houses will be theoretically significant for moving beyond classifying attributes of social hierarchy.

The next chapter presents the methods and results of my laboratory research, employing a techno-functional analysis of the recovered pottery. The chapter also introduces additional evidence of feasting and crafting practices which were strategically employed for the interests of the social house. The ultimate purpose of the next chapter is to reveal practices of Tayata house members and possible processes of social differentiation, to then compare with the data from Chalcatzingo and San José Mogote in Chapter 7.
Table 5-1. Radiocarbon data from the midden feature of House 4 (courtesy of Santa Cruz Tayata archaeological project, provided by Dr. Andrew Balkansky)

<table>
<thead>
<tr>
<th>Sample data</th>
<th>Measured radiocarbon age</th>
<th>13c/12c ratio</th>
<th>Conventional radiocarbon age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beta - 216158</td>
<td>2930 +/- 40 BP</td>
<td>-25.7 o/oo</td>
<td>2920 +/- 40 BP</td>
</tr>
</tbody>
</table>

Sample: Tayata048
Analysis: AMS-Standard delivery
Material/Pretreatment: (charred material): acid/alkali/acid
2 Sigma calibration: Cal BC 1260 to 1000 (Cal BP 3210 to 2940)
Figure 5-1. GIS-based general map (with elevation range).
Santa Cruz/Catarina Tayata

Figure 5-2. Santa Cruz Tayata site map.
Figure 5-3. Area A of Santa Cruz Tayata and excavated zones.
Figure 5-4. Location of House 4. Pink color indicates stone foundations.
Figure 5-5. View of the non-residential architecture from the House 4 zone (courtesy of Santa Cruz Tayata archaeological project, photo by Takahashi).
Figure 5-6. Wide view of House 4 zone (courtesy of Santa Cruz Tayata archaeological project, photo by Matsubara).
Figure 5-7. Distance between public and domestic architecture.
Figure 5-8. Marine shell ornaments recovered at House 4 features (courtesy of Santa Cruz Tayata archaeological project, photo by Takahashi).
Figure 5-9. Figurine recovered at House 4 (courtesy of Santa Cruz Tayata archaeological project, photo by Takahashi).
Figure 5-10. The profile of the midden 1 (courtesy of Santa Cruz Tayata archaeological project, photo by Takahashi).
Figure 5-11. One of the dog figurines recovered at House 4 (courtesy of Santa Cruz Tayata archaeological project, photo by Takahashi).
Figure 5-12. Worked shell debris recovered at House 4 (courtesy of Santa Cruz Tayata archaeological project, photo by Takahashi).
Figure 5-13. Worked spiny oyster recovered at House 4 (courtesy of Santa Cruz Tayata archaeological project, photo by Takahashi).
CHAPTER 6
ANALYSIS AND INTERPRETATIONS OF ARTIFACTS

As discussed in Chapter 1, the primary purpose for excavating residential areas at Santa Cruz Tayata was to learn about residential structures and acquire necessary data to interpret house-based corporate practices. The excavation data provided information on the socio-economic standing and other characteristics of the inhabitants of the excavated residences, and my subsequent laboratory analysis, focusing on techno-functional features of recovered ceramics, revealed feasting practices. In this chapter, I summarize the procedures and results of the laboratory analysis while making interpretations of specific practices.

In comparison with Formative cultures in the Valley of Oaxaca, those in the Mixteca Alta have not been studied thoroughly, and thus the functional classification of ceramics from the Mixteca Alta relies on those from the Valley of Oaxaca. However, recent survey and excavation projects in the Mixteca Alta are gradually providing the data on Mixteca pottery types (e.g., Byland 1980; Byland and Pohl 1994; Lind 1987; Plunket 1983). There is nevertheless a need to create an original ceramic classification based on the Mixteca pottery. Also, very few archaeologists applied a techno-functional approach to Mixteca pottery before this study, so a greater focus on technical and functional aspects of Mixteca pottery is encouraged.

The first part of this chapter addresses issues of analyzing Formative pottery in Oaxaca. I then discuss methodological procedures of the laboratory analysis by focusing on strategies as interpreted from a techno-functional analysis. Interpretation of the function of a vessel form is based on a theoretical analysis of the relationship between form and function, which suggests that certain forms and properties represent
more efficient solutions to certain functional requirements (Braun 1983; Hally 1986; Hegmon 1992). What I mainly investigate from the pottery assemblage is serving vessels, which are relatively open and in the case of those used for feasting, relatively large. A small drinking cup or pitcher, an open bowl with an out-flaring rim and a flat base, and a larger pitcher with a spout and vertical handle generally belong to the category of serving vessels.

After discussing methods and strategies, I present the data from features that I analyzed, including those disassociated from the residential structures, while interpreting results from the laboratory research. Finally, I conclude with the discussion of how feasting practices could have maintained social relations among social houses in the less-differentiated community of Santa Cruz Tayata.

**Formative Pottery in the Valley of Oaxaca and the Mixteca Alta**

San José Mogote in the Valley of Oaxaca gives us an example of typical ceramic assemblages of a household during the Formative period. From 1150 to 500 B.C., San José Mogote was the largest chiefly center in Oaxaca, and had a greater variety of ceramics than any other contemporary village in the Valley (Flannery 1976; Flannery and Marcus 1994). Because of the lack of intensive pottery analyses in the Mixteca Alta until recently, as well as assumed or accepted cultural similarities between these areas (e.g., Blanton et al. 1999; Blomster 2004; Flannery and Marcus 1983, 1994; Lind 1987), pottery from the Valley of Oaxaca has been considered useful for comparison with the Mixteca Alta. Therefore, this section introduces archaeological and ethnographic characteristics of pottery-making in the Valley of Oaxaca, while discussing issues of analyzing social status based on ceramic evidence. This section also describes

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variations in form of Formative pottery in the Valley of Oaxaca to address the problem of applying pottery sequences in the Valley of Oaxaca to those in the Mixteca Alta.

Two principal techniques of forming pottery are evident in Formative ceramics from Oaxaca. One is press-molding and the other is concentric rings. Press-molding is done by laying previously flattened slabs of clay body over a gourd or a previously made vessel, often using wood ash and dry clay powder to prevent the two vessels from sticking together (Rice 1987). In the other technique, the potter begins by taking a lump of clay and pounding it into a disc, which becomes the base for a new vessel. Concentric rings of clay are then added to the disc in order to build up the sides of the vessel (Rice 1987). Evidence for both the press-molding technique and the concentric ring forming method is found in vessels of the Tierras Largas phase (1400-1150 B.C.) and the San José phase (1150-850 B.C.) (Flannery and Marcus 1994).

Moreover, Formative pottery was often burnished with quartz pebbles, many of which were found in the Oaxaca excavations (Flannery and Marcus 1994). The burnishing technique is used to reduce the porosity of the vessel surface, thus reducing evaporation or absorption of moisture in the contents (Rice 1987). In terms of firing, no kilns have been discovered in any Early Formative sites in Oaxaca (e.g., Whalen 1981; Winter and Payne 1976). The absence of kilns suggests that Formative potters fired pots above ground, and the above-ground firing technique is still known among potters of San Marcos Tlapazola in the Valley of Oaxaca today (Payne 1994).

Archaeological evidence shows that there was a tremendous diversity among San José phase vessels, while the earlier Tierras Largas phase vessels had a relatively limited range of shapes. There were charcoal braziers, tecomates for storage, large jars
for cooking, and smaller bowls for individual servings of foods in the San José phase (Flannery and Marcus 1994), although it is sometimes difficult to determine the exact function of the ceramic vessels because the three major categories (serving, cooking, and storing) do not cover other potential functions of the recovered vessels. Many archaeological reports, for example, only refer to storage vessels, cooking pots, or serving dishes, but there are many other possibilities for the function of the pottery vessels. Some categorized vessels might have been used for fermentation, maize soaking, parching, evaporating salt, tanning, decanting, and other purposes, but it is very difficult to identify such specific uses.

In addition, there is a difficulty in comparing styles across space because archaeologists and art historians employ different and varied concepts of what style is. Hegmon (1992:529) states that style is a way of doing something, and reflects a choice among varying alternatives. Different styles are not always mutually exclusive, and one style does not conveniently mark the art of a group or artisan (Hegmon 1992:523). Also, because archaeologists have tended to over-emphasize the use of style to communicate information, issues of production and perpetuation of style are often neglected (Hegmon 1992:521). In the Valley of Oaxaca, even though styles may have served as social boundary maintenance mechanisms between hostile villages (Dennis 1987), we can generally say that style as well as information transmitted by it is context-dependent and varies accordingly.

Ethnographic examples of pottery-making are available in the Valley of Oaxaca, and many contemporary villages in Oaxaca are famous for commercial ceramics. Among all these villages, San Marcos and Atzompna provide us with an important
context for understanding Formative pottery of the Valley of Oaxaca. Although the process of making pottery at San Marcos Tlapazola is very much the way some Formative vessels appear to have been formed (Flannery and Marcus 1994), the most important analogy is seen in the firing process. No formal kiln is used at San Marcos, and vessels are simply stacked in the dooryard of the potter’s house. The fuel--dried organ cactus or maguey leaves--is then piled over the stack of pottery and ignited. When the firing is over, a layer of fine ash remains in situ. This ethnographic example is roughly similar to what archaeologists have found at Formative villages in the Valley of Oaxaca (plenty of ash, but no kilns and no proof of firing), and the evidence of pottery production in this fashion has been noted in the Mixteca Alta (Balkansky and Croissier 2009). Another ethnographic example comes from Santa Maria Atzompa. Potters of Atzompa use the same clay sources that potters of Formative villages such as Tierras Largas and San José Mogote used (Flannery and Marcus 1994; Stolmaker 1973). Atzompa potters use concentric rings for forming pottery and use gourd scrapers and quartz pebbles for burnishing.

Stolmaker (1973:57) calculated that a young woman at Atzompa with no children could complete three dozen small jars in a half day, and that the burnishing of jars with a quartz pebble took less than two hours of work per dozen vessels. These calculations by Stolmaker (1973:57) are useful, but we need to acknowledge the fact that potters at contemporary villages make pottery for commercial purposes. Thus the amount of time Formative villagers spent meeting their own needs may have been less with the same methodology. In terms of the question about whether Formative potters were men, women, or whole family members, ethnographic examples from the Valley of Oaxaca do
not provide useful information on this issue because of the fact that contemporary pottery-making is a commercial enterprise and thus both men and women work at this craft. According to ethnographic examples from Kalinga (Stark et al. 2000), Gamo (Arthur 2002), and Cameroon (Gosselain 1992), pottery production cross-culturally is largely a female activity. However, there is no evidence that there was a clear gender distinction with respect to activities through history. Specific luxury wares from the Early to Middle Formative period, such as Oaxaca Delfina Fine Gray, required potters to acquire special skills (Flannery and Marcus 1994:259), but archaeologists are unlikely to determine exactly whether those potters during the Formative period were men or women.

In regards to issues of analyzing social status through pottery, there were differences in ceramic assemblages between higher status and lower status households as soon as hereditary differences in social rank emerged (e.g., Flannery and Marcus 1994). Drennan (1976) reported that bowls (especially decorated gray bowls) were more common around high-status households at Fabrica San José, while jars and other storage vessels were more common at low-status households. Although this archaeological evidence may indicate that low-status households had restricted access to decorated bowls, it may also reflect different ranges of activities between households. Archaeologists suspect that there were more feasting activities and more frequent entertaining of elite guests by high-status households in the Valley of Oaxaca (e.g., Blanton et al 1999; Marcus and Flannery 1996). In addition, the status differences observed by Drennan (1976) indicate differences in ceramic assemblages between
large and small villages because there were more high-status families at larger regional ceremonial centers.

This being the case, do regional differences in ceramic assemblages only indicate differences in social status? Plog (1976) notes that the Middle Formative ceremonial centers of Huitzo and San José Mogote had a different repertoire of motifs on Atoyac Yellow-white pottery. One minor Formative center, San Sebastian Abasolo, lacked some of the major San José phase luxury wares, but used a fine white ware which has not been recovered at any major San José phase ceremonial centers (Flannery and Marcus 1994). Although more data are necessary to discuss the issues of local and regional differences in pottery assemblage, differences in pottery assemblage are not always status related.

In addition, there is a question about whether the differences in motif preference reflect differences in social status or not. Archaeologists tend to consider that pottery with symbolic motifs suggests an association with high-status groups or households, and that motif differences suggest chronological difference, with one motif succeeding the other over time. However, cases from San José Mogote (Flannery 1976) and Tomaltepec (Whalen 1981) suggest that both higher-status and lower-status households were associated with each set of motifs.

**Pottery Form Variations in the Valley of Oaxaca and the Mixteca Alta**

The recognition of similarity in pottery sequences between the Valley of Oaxaca and the Mixteca Alta requires a closer look at pottery form changes in the Valley of Oaxaca. Tierras Largas phase households had necked jars for boiling or storing liquids, tecomates or neckless jars for wet or dry storage, hemispherical bowls for individual servings, and bottles for special liquids (Flannery and Marcus 1994:55). During the San
José phase, flat-based bowls that could be cylindrical or conical gradually replaced hemispherical bowls. At the same time necked jars and tecomates got larger as storage needs grew and pottery-making improved (Flannery and Marcus 1994:135). One of the most important and new vessel forms of the San José phase was a portable brazier for cooking with prepared pine charcoal. Also, spouted trays for pouring pigment appeared in this time period. Then, in the succeeding Guadalupe phase, bowls with more outcurved or flaring walls increased at the expense of cylinders and outleaning-wall bowls (Flannery and Marcus 1994:161). By the Rosario phase, one could see clear differences between the ceramic assemblages of low-status groups and elite groups (Drennan 1976). All those data from the Valley of Oaxaca have been compared with those from Mixteca Alta sites, including the Formative sites of Etlatongo and Santa Cruz Tayata. Because the Tayata project recovered a significant amount of San José phase-like ceramics, I discuss details of the San José phase vessels here for analytical reference.

The San José phase pottery assemblage is marked by the replacement of hemispherical bowls by flat-based bowls (Flannery and Marcus 1994:135). Those flat-based bowls varied from cylinders with vertical walls to open bowls with outleaning walls. Also, carved designs on the San José vessels were distinctive of the period that archaeologists can define as the San José phase on the basis of vessel form and decoration, without focusing much on surface color (Flannery and Marcus 1994:135). However, surface color is very important in San José phase pottery because the color of the pottery is no longer limited to buff, red, or red-on-buff, but includes gray, black, white, or black-and-white (Flannery and Marcus 1994:149). In addition to the
appearance of new types of vessels such as charcoal braziers, multi-compartment vessels, spouted trays, pigment dishes, and effigy vessels of many kinds, jars with flaring necks increased in size, and many had plastic decorations such as jabs, slashes, or punctations. Tecomates grew heavier and had many varieties of rocker stamping and punctation. As exchange networks developed during the San José phase, it is easy to guess that new ideas about the designs and decoration skills of pottery traveled rapidly, and that black ware, white ware, differentially fired white-and-black ware, and red-on-white ware became common (e.g., Flannery and Marcus 1983, 1994). Moreover, during the San José phase, a series of pan-Mesoamerican excised and incised motifs or designs were utilized. The San José phase was not the period in which those designs and motifs first arose, but it was the first period in which they appeared mainly on cylindrical and conical bowls (Flannery 1976).

Archaeological evidence clearly shows that San José Mogote acquired foreign pottery and exported manufactured pottery through interregional networks, and had specialized potters who produced finer vessels such as Delfina Fine Gray (Flannery and Marcus 1994). Delfina Fine Gray was a luxury ware found at sites across Early and Middle Formative Mesoamerica, and whose origin was the Valley of Oaxaca (Flannery and Marcus 1994:259). In terms of the vessel forms of Delfina Fine Gray, flat-based bowls with vertical walls (cylinders) were the most common form that was recovered from the middens of Tayata. Most of the cylindrical vessels of this type were decorated with specific designs, such as “Earth” and “Sky” symbolism (Flannery and Marcus 1994:136) and “double-line-break” motifs (Flannery and Marcus 1994:140) on the exterior walls.
In terms of the Cruz phase ceramics in the Mixteca Alta, the observation regarding change in vessel forms at Etlatongo in the Mixteca parallel those for the Valley of Oaxaca (Blomster 2004). The shift away from hemispherical bowls and the greater frequency of cylindrical bowls early in the Middle Cruz phase appears to match the pattern for the San José phase (Winter 1994). According to the research by Blomster (2004), Etlatongo ceramic assemblages appear to conform to the Valley of Oaxaca pattern in that greater frequencies of decorated vessels and possible import wares mark relatively high-status residences, while low-status houses have higher frequencies of coarse utilitarian wares and relatively undecorated pottery (Flannery and Marcus 1994:339). In higher-status residences and public areas at Etlatongo, higher frequencies of decorated serving vessels were recovered (Blomster 2004). However, at the same time, data also show that a high percentage of decorated cooking and storage vessels were recovered from most features at Etlatongo. Perhaps Blomster assumed that households at Etlatongo would show the same trend as those in the contemporary Valley of Oaxaca sites. It is reasonable to think that high-status houses had better access to luxury wares at Etlatongo, but the access to those special wares might not be limited to higher-status houses or households. Actually, there is a sample bias in Blomster’s research. Most of the samples with Middle Cruz contexts come from high-status residences or public areas at Etlatongo, and thus I argue that there is a need to focus on samples with average and lower status houses.

**Stylistic and Techno-Functional Approaches in Pottery Analysis**

Style analysis basically focuses on decorative variation in pottery, but as noted, different styles are not always mutually exclusive (Hegmon 1992:523). Generally, style differences among ceramic vessels often provide the means by which archaeologists
can determine the relative date of a site. Style also plays a role in pottery production in which pottery is linked to specific production areas correlated with spatially restricted sources of raw material (Rice 1987). Moreover, exotic or non-local styles or designs allow archaeologists to argue for exchange, migration, and other forms of interaction, although archaeological evidence indicates that there were many widely shared styles, designs, and forms in the Formative period, and thus similarities are not always evidence for the degree of interaction between specific regions or sites (e.g., Flannery 2000; Grove 1997).

On the other hand, techno-functional analysis explains the way pottery was made and utilized. Ceramic vessels were used as containers, and many attributes of pottery sherds contain rich information on potters’ manufacturing techniques, vessel morphology, and paste composition (Braun 1983). Also, techno-functional analysis provides us with information on the potter’s decision-making processes because potters selected raw materials and utilized manufacturing techniques within a given choice of vessel morphology and composition (Braun 1983). This choice is based on labor and material costs, with desired vessel life expectancy relative to the need for the desired product (Braun 1983).

The basic assumption is that the form of a ceramic container is strongly influenced by its intended function. Ceramic vessels can be used in food-related activities such as cooking, processing, fermentation, serving, eating, wet and dry storage, transportation of liquids, and washing (Hally 1986). The functional nature of pottery can be analyzed along several dimensions. These include shape, physical properties determined by attributes such as wall thickness and paste composition, patterns of use wear, and
patterns of association or context (Hally 1986). Techno-functional analysis of pottery
allows archaeologists to explain technical and functional variations of the ceramic,
rather than just describing it.

In the laboratory analysis I conducted, based on a perspective that potential intra-
site social hierarchy will be expressed in ceramics and other artifacts. I carried out an
attribute analysis of Tayata ceramics recovered from features at residential and non-
residential structures, following widely employed techno-functional analytical procedures
(Braun 1980, 1983; Hally 1986; Henrickson and McDonald 1983). The analysis of the
spatial distributions of the different vessel-use classes provides insight into the
organization of space within the community because there are various social,
ideological, and economic factors that impact the distribution of different functional
classes of vessels.

The first step of the analysis was to determine the probable function of vessels
based on forms, surface treatment, wall thickness, and patterns of use wear. My
analysis next focused on calculating the minimum number of vessels (MNV) for each
context, and several sherds from the same vessel were counted as one vessel. In
determining MNV, all rim sherds and some basal sherds that clearly show the angle of
the vessel wall were counted. Then, a classificatory division between restricted vessels
and unrestricted ones was made, while analyzing inferred function of each vessel based
on form, surface treatment, wall thickness, size, and patterns of use wear. Details such
as coil breaks, sooting, and interior abrasions were recorded as present, possibly
present, or absent. Also, exterior and interior surface treatment was recorded.
Exterior surface treatments are clearly of interest in typology and chronology. The examination of interior surface treatments can be useful in addressing possible functional categories (Hally 1986; Henrickson and McDonald 1983). Interior surface treatment was recorded as smoothed, burnished, or scraped. Bowls for serving purposes were burnished more carefully than jars, on both interior and exterior surfaces. In terms of wall thickness, thickness was measured 3 cm below the rim. When measured consistently, thickness can reflect technological traditions and functional considerations (Rice 1987). Rims were described as round, square (flat top), and exterior lip. Rim diameter was measured on a 1-cm-increment chart when a sufficient rim section was available to assure reliability of the delivered measurement. Rim diameter data complement vessel form information. In addition, there were many small rim sherds that do not really tell the form of the vessel, so they were labeled as “unidentified.”

Paste color is also important for estimating chronology and for comparing patterns with those from the Valley of Oaxaca, but only a simple classification was made. This is because the variety of color on vessels was limited and was similar to vessel assemblages from the Valley of Oaxaca sites. During analysis, I consulted with Dr. Balkansky about the possible time period of each vessel assemblage from the features. Moreover, the type (organic temper or stone temper), size, and density (fine, coarse, very coarse) of major aplastics was recorded in order to support the arguments for vessel functions. Finally, the weight of all the decorated sherds and undecorated sherds was calculated.
Techno-Functional Aspects of Pottery

A basic distinction of pottery vessels is whether they are restricted or unrestricted. An unrestricted vessel is characterized by the absence of constrictions between rim and base, while a restricted vessel is one in which the maximum body diameter exceeds the rim diameter (Rice 1987). Unrestricted vessels often have proportionately larger rims than restricted vessels. Archaeologists generally consider that restricted vessels, such as ollas, tecomates and bottles, were used for food preparation, cooking, and storage, and that unrestricted vessels such as hemispherical bowls, conical bowls, and cylinders were utilized in serving food and drink (e.g., Braun 1980, Hally 1986). However, vessels do not always need to be used in the task for which they are best suited (Sinopoli 1999). Also, vessels are often subject to secondary uses once they can no longer serve their initial function (Skibo 1992:38). Furthermore, tecomates were likely multi-purpose containers and were not suited for individual serving purposes (Arnold 1999).

The next procedure of the techno-functional analysis was to classify vessel types based on characteristics of cooking, storing, and serving wares. A functional category of cooking vessels tends to be generalized because it is difficult for archaeologists to identify whether or not a particular piece of pottery was used only for food processing. As a matter of the fact, although it is relatively easy to determine whether it was suited for boiling, vessels identified as cooking pots tend to have the widest range of variation (Mills 1989). Decades ago Linton (1944) argued that an effective cooking pot must have a mouth large enough to prevent excessive boiling over and to permit stirring contents, but at the same time, small enough to prevent it from boiling dry every few minutes. Most of the restricted vessels fit this category, and the tecomate has an ideal form for direct-heat moist cooking (Arnold 1999:162). A cooking container for boiling must allow
for access, either with a bowl or some type of ladle, and at the same time, it must allow for some moisture to escape while controlling the rate of liquid evaporation (Arnold 1999). In addition to ideal vessel forms for cooking, we need to see different aspects of the vessels, such as wall thickness, sooting, internal abrasions, and surface treatment, in order to identify whether the vessel was used for cooking.

Storage vessels are often difficult to distinguish from cooking vessels, but they have a relatively large capacity and are often fitted with a lip form to accept a cover (Hally 1986). Storage vessels also have restricted orifices to prevent spillage, but these should not be so small as to inhibit removal of the contents. Moreover, horizontal space efficiency is important for storage vessels, and thus they need to be taller than wide (Hally 1986). Hally (1986:291) states that a large jar is ideal for storing because it is difficult to manipulate the contents and is difficult to move when full. Also, the number of recovered storage vessels should be relatively few because they have long use-life due to the least breakage possibilities (Hally 1986:285). Moreover, we need to see whether there is any sooting on the surface of the vessels to determine whether they were utilized in direct-heat cooking. Even though we have criteria for distinguishing storage vessels from cooking vessels, it is sometimes difficult to determine the functional categories of storage because some restricted vessels were used for multiple purposes. However, storage vessels are important to identify actions of surplus or accumulation, and thus may suggest economic inequality among households at archaeological sites.

Finally, the distribution, number, and sizes of serving vessels are significant for interpreting social practices because feasting is a basic element in the construction and maintenance of social relations of power and inequality (e.g., Blitz 1993; Dietler 1996).
Spielmann (2002:198) also argued that ceremonial feasting and the need for the specialized crafts was responsible for changes in economic activities. Moreover, Mills (1999) believes that patterns of food consumption, including preparation and serving techniques, as well as social contexts, particularly involving feasting, had a great impact on serving vessel size and shape in the prehistoric northern Southwest.

As noted above, unrestricted vessels are generally categorized as serving vessels, but the characteristics of serving vessels need to be described. Serving vessels with access for dipping need to be wide, unrestricted, have a shallow profile, have a slightly inturned rim to prevent spillage, and have a stable base (Hally 1986:290). Also, serving vessels of this kind vary in size with the size of eating group and often have elaborate decoration. On the other hand, serving vessels for pouring need to be narrow, have a restricted orifice with a neck or collar elevated, and have an outflaring rim (Hally 1986:290). Those criteria fit conical bowls and cylinders nicely. An increase in the number and size of flat-base bowls during the Middle Formative period may suggest a change in foodways, increase in house size or wealth, and an increase in competitive feasting.

**Laboratory Analysis: the Pottery Assemblage from Santa Cruz Tayata**

As described in Chapter 5, I excavated residential and non-residential structures in area A of Santa Cruz Tayata. Vessel assemblages from features of the Cruz structures (Figure 6-1) are useful for analyzing whether there are patterned variations of functional groups of pottery. Eventually, with the data of other recovered artifacts, social practices taking place inside and outside structures can be analyzed. With respect to pottery analysis, even though pottery sherds from the entire area of the House 4 were analyzed (Appendix B), my primary focus was on vessel assemblages of two middens (features 1
and 2) associated with the house, one midden or burial next to the house (feature 3), and a primary burial under the floor. Also, I analyzed a vessel assemblage from a deep excavation unit (127–320 cm) placed at the center of the public (non-residential) architecture and from the test pit in the primary mound for comparing with the data from residential structures.

**Feature 1: Midden 1 of House 4**

As described in the previous chapter, this Middle Formative midden contained a wide variety of vessels along with dog remains, dog figurines, and obsidian blades (Duncan et al. 2008). Sherds from 273 vessels (MNV) were recovered from Midden 1 associated with House 4 (Table 6-1). Forty-nine sherds were too small to identify the exact forms of whole vessels and thus were put into the “unidentified” category. Twenty-five jars and one tecomate were recovered, and those restricted vessels comprised less than 10% of the entire assemblage. In terms of unrestricted vessels, 29 hemispherical bowls (10.6%), 83 cylindrical bowls (30.4%), and 86 conical bowls (31.5%) were recovered from this pit (Figure 6-2). Therefore, almost 90% of the vessels from this pit were unrestricted, and probably utilized in serving (Table 6-2). In comparison with cylinders and conical bowls, the number of hemispherical bowls was fewer than expected.

These data indicate that this assemblage corresponds in time to the late San José or Guadalupe phase in the Valley of Oaxaca, because of the declining number of hemispherical bowls and increasing number of conical bowls. Also, only one tecomate was recovered from this pit, indicating that this assemblage is less likely to equate to the Tierras Largas or early San José phases (if I follow the data from Etlatongo in the Mixteca Alta and San José Mogote in the Valley of Oaxaca). Because there is one
natural layer in the middle of this pit, I considered that two different deposits might represent different time periods. However, there was no significant difference between the recovered artifacts from the upper and lower parts of the pit.

In terms of the rim forms, many jars and some cylinders have flat (square) rims, and covers could have been placed on these vessels. Moreover, there were very few bowls with the outflaring walls that characterize the Guadalupe phase, and most of the conical bowls had less-outleaning walls. Overall, a higher percentage of unrestricted vessels may be related to a serving context, with fewer used for cooking. At least a couple of dogs were butchered and their remains buried in this pit, so this house could have been associated with feasting activities on some occasions (Duncan et al. 2008).

Vessel size is important because trends toward increasing vessel size may suggest changes in foodways, increase in house size, increase in house wealth, and increased competitive feasting (Mills 1999:113). Thirty-seven out of 273 (MNV) had larger orifices (> 30 cm), and larger vessels made up 13.6% of the entire assemblage (Table 6-3). Interestingly, more than 50% of the hemispherical bowls (15/29) of the assemblage were large vessels. Also, there were fifteen large cylinders and seven large conical bowls in the assemblage. Only 8.1% of the conical bowls were large ones, and thus large conical bowls were rarely used at this house. However, I need to ascertain data on the sizes of vessels from other household features at Tayata before drawing firm conclusions. In the case of San José Mogote, the size of the hemispherical bowls became larger during the middle San José phase (Flannery and Marcus 1994), so the large hemispherical bowls at Tayata House 4 suggest that the house dated to the Middle Cruz rather than the Early Cruz phase.
None of the hemispherical bowls was decorated. Jars were all brown, and there were many fine gray, yellowish white, or white brown bowls in the assemblage, but the number of luxury wares, such as Delfina Fine Gray and other foreign wares with pan-Mesoamerican motifs, was very limited. In the Valley of Oaxaca, low-status families had more jars relative to individual serving bowls, and their assemblages were dominated by wares that tended to be buff with a red slip or monochrome brown (Flannery and Marcus 1994:333). Based on these criteria, the House 4 residence was not occupied by low-class inhabitants. However, at the same time, this assemblage does not represent a high-status house if I compare recovered artifacts, house construction, and other factors with those from high-status houses in San José Mogote. Based on the currently available evidence, members of House 4 had access to foreign items, used many unique figurines, shell ornaments, and obsidian blades, occupied a good location on the site (one of the highest elevation spots and next to public architecture), and might have organized and participated in dog feasting activities.

**Feature 2: Midden 2 of House 4**

Sherds from 182 vessels (MNV) were recovered from Midden 2 associated with House 4 (Table 6-1). Even though this midden is adjacent to Midden 1, there is a difference in the size/shape and characteristics of its contents. Twenty-five sherds were too small to identify the exact forms of the whole vessel and thus were put into the “unidentified” category. Twenty-seven jars but no tecomates were recovered.

In feature 2, restricted vessels composed less than 15% of the entire assemblage. In terms of unrestricted vessels, 12 hemispherical bowls (6.6%), 34 cylindrical bowls (18.7%), and 84 conical bowls (46.2%) were recovered from this pit (Figure 6-3). Almost 83% of the vessels were unrestricted (Table 6-2), and the number of conical vessels
was very high. In comparison with conical bowls, the number of hemispherical bowls and cylinders is limited. Like the data from feature 1, these data suggest that this assemblage corresponds to either the late San José or Guadalupe phase because of the relative number of conical bowls. The number of outleaning-wall bowls is higher, and there are some outflaring bowls with geometric designs.

The fact that no tecomate was recovered and more conical bowls exist in this assemblage indicates that this midden is contemporary to or even more recent than the assemblage of feature 1. There is no critical difference in recovered vessel forms at the upper part and the bottom part of the pit. Another interesting difference between feature 1 and feature 2 is that many carbon samples and burnt objects were recovered from feature 1 but not feature 2. The fact that almost 50% of the recovered vessels were conical bowls suggests that there was a necessity for using such high numbers of conical bowls when those two middens were in use. Also, some unique figurines, foreign artifacts, and a huge metate were recovered from this midden. Overall, the vessels and other artifacts suggest a relatively higher status of the house, if we follow the criteria of the high-status houses in the Valley of Oaxaca.

In terms of vessel size, 19 out of 182 vessels had larger orifices (> 30 cm), and larger vessels made up around 10.4% of the entire assemblage (Table 6-3). One-third of the hemispherical bowls (4/12) in the assemblage were large vessels, and there were no large jars. Also, there were 5 large cylinders and 10 large conical bowls in the assemblage. Only 11.9% of the conical bowls were large ones, and thus vessels for large-scale serving were not so important at this house (if the midden goes with the house). Based on the data from these two features, a limited number of large conical
bowls was utilized by this household. However, many conical bowls larger than 20 cm were recovered from these units. I suggest that such high numbers of medium and large unrestricted vessels were beyond the needs of immediate house members.

In terms of vessel colors, a majority of vessels were brown and there were no red-on-buff vessels. Although there were some fine gray, white, and yellowish white cylinders and conical bowls, there was no fancy ware with pan-Mesoamerican motifs. The colors of all the hemispherical bowls were brown or reddish brown.

**Feature 3: Midden/Burial of House 4**

This feature has been treated as a burial (Duncan et al. 2008), but I suspect that it was utilized mainly as a midden because the contents recovered from this feature are similar to those of other middens. Trash pits were often utilized as secondary burial places, so this case is not unique. One hundred and sixteen vessels (MNV) were recovered from this midden/burial associated with House 4 (Table 6-1). In comparison with primary burials with a shell-bead necklace, figurines, and decorated pottery (Duncan et al. 2008:5317), no luxury grave offerings were recovered.

Thirty-nine sherds were too few to identify exact vessel forms and thus were put into the “unidentified” category. Fifteen jars, one tecomate, and one charcoal brazier (MNV) were recovered, and those restricted vessels represent less than 15% of the entire assemblage. In terms of unrestricted vessels, 6 hemispherical bowls (5.2%), 18 cylindrical bowls (15.5%), and 36 conical bowls (31%) were recovered from this unit (Figure 6-4). Almost 78% of the vessels are unrestricted (Table 6-2), and again suggest an unusual need for unrestricted vessels. In comparison with cylinders and conical bowls, the number of hemispherical bowls is very limited.
The data from all three features suggest that these assemblages correspond to the late San José or Guadalupe phases. Many jars in this assemblage had square rims, so covers or lids may have easily been utilized. The number of outflaring-wall bowls was limited, but there was one conical bowl with a wavy rim and one with an extremely outleaning rim. Again, a high percentage of unrestricted vessels may reflect an emphasis on serving rather than cooking.

In terms of vessel size, 18 out of 116 vessels (MNV) had larger orifices (> 30 cm), and larger vessels occupied about 15.5% of the entire assemblage (Table 6-3). Again, 33.3% of the hemispherical bowls (2/6) of the assemblage were large vessels, although the sample size is limited. There was one large jar whose orifice was 44 cm. It was roughly burnished on both sides, and there was no sooting and internal abrasion. Also, there were three large cylinders and eleven large conical bowls in the assemblage. Here, 30.6% of the conical bowls were large ones, and the size of those large vessels was 30-36 cm. Also, there were many unrestricted vessels with orifices smaller than 18 cm. Based on the data from all three features, this household had a high number of small, medium, and large serving vessels.

In terms of vessel colors, none of the hemispherical bowls was decorated. Jars were all brown and there were many fine gray, white brown, or yellowish white bowls and cylinders in the assemblage. There were no Delfina Fine Gray or other foreign wares with pan-Mesoamerican motifs.

**Burial 1 of House 4**

A cremated figure was recovered with offerings from this burial (Duncan et al. 2008). Sherds from 99 vessels (MNV) were recovered with this shallow sub-floor burial in House 4 (Table 6-1). Twenty-three sherds were put into the “unidentified” category.
Eleven jars, one tecomate, and one charcoal brazier (MNV) were recovered, and those restricted vessels comprised less than 15% of the entire assemblage. In terms of unrestricted vessels, sherds from 7 hemispherical bowls (7%), 16 cylindrical bowls (16.2%), and 40 conical bowls (40.4%) were recovered around this burial (Figure 6-5). Again, 83% of the vessels at this pit were unrestricted (Table 6-2). Similar to the three other features, the number of hemispherical bowls was very limited, and only one tecomate was recovered. There were some very shallow as well as tall conical bowls, and the number of outleaning bowls was limited. There were no outflaring-wall bowls. Most of the conical bowls at this burial were well polished. Also, a certain number of jars and cylinders had flat rim tops. I had expected to find some luxury foreign vessels buried as offerings, but none were found. Overall, the burial midden had a high percentage of unrestricted vessels (83%). Although this was a relatively shallow burial, sherds from many serving vessels occurred in the midden.

In terms of vessel size, 13 out of 99 vessels had larger orifices (> 30 cm), and larger vessels represented around 13.1% of the entire assemblage (Table 6-3). About 28% of the hemispherical bowls (2/7) in the assemblage were large vessels, although sample size is small. There were four large jars, and three of them had 42-44 cm orifices. These jars were roughly burnished on both sides, and no sooting was identified. Also, there were three large cylinders and four large conical bowls in the assemblage. Only 10% of the conical bowls were large ones, and all of these conical bowls were polished inside. There were three very small cylinders with orifices of 8-12 cm.

In terms of vessel colors, most of the serving vessels were fine gray or yellowish white, and attention had been paid to the quality (well-polished or smoothed with
decorations) of those vessels. Unlike hemispherical bowls from other features, some hemispherical bowls were a dark gray color. The number of simple tan wares was small.

**Excavation 2 Zone: House 2**

The pottery assemblage from zones of the earliest occupation levels of House 2 was analyzed for comparing practices of social houses. Sherds from 199 vessels (MNV) were recovered from midens associated with House 2 (Table 6-1). Eighty-three sherds were small and were put into the “unidentified” category. Twenty-six jars, one tecomate, and two charcoal braziers were recovered, and those restricted vessels composed about 15% of the entire assemblage. In terms of unrestricted vessels, 19 hemispherical bowls (9.5%), 19 cylindrical bowls (9.5%), and 49 conical bowls (24.7%) were recovered from these pits. Almost 75% of the vessels from the pits were unrestricted vessels (Table 6-2), and the number of conical bowls was high even in this different area of the site. Although there were many unidentifiable sherds, the number of hemispherical bowls and cylinders was the same. In the House 4 zone, cylinders always outnumbered hemispherical bowls. Although conical bowls at House 2 had less-outleaning walls, I do not see any critical difference in vessel assemblages between the House 4 zone and the Excavation 2 zone. The same midden(s) was used in different time periods by different household members and residences here were built over older houses, so it is difficult to identify the contexts of each feature. Moreover, I analyzed only a small number of sample vessels from this area, so further analysis will be required to provide more information about these residential structures. However, only one tecomate out of 199 MNV was recovered from these pits, which suggests that this assemblage does not correspond to either the Tierras Largas or early San José phases, if I follow the data from Etlatongo in Mixteca Alta and San José Mogote in the Valley of Oaxaca. Overall,
the presence of a high percentage of unrestricted vessels suggests an emphasis on serving and less on cooking.

In terms of vessel size, 9 out of 199 vessels had larger orifices (> 30 cm), and larger vessels composed only 4.5% of the entire assemblage (Table 6-3). About 21% of the hemispherical bowls (4/19) of the assemblage were large vessels, and there were no large jars. Three out of four hemispherical bowls had 38-40 cm orifices. Also, there were one large cylinder and three large conical bowls in the assemblage. Only 6.1% of the conical bowls were large ones, suggesting that large conical bowls were rarely used in the Excavation 2 zone. The number of large vessels was very limited in this area, suggesting that the vessel assemblages there belonged to earlier periods.

In terms of vessel colors, the number of gray vessels was fewer in this area, but there were still many gray wares that were rare during the Tierras Largas phase in the Valley of Oaxaca. The major difference in the vessel assemblages between the House 4 zone and the Excavation 2 zone is that there were some red-on-buff sherds from the Excavation 2 features, although the number of those sherds was small. No red-on-buff vessel sherds were recovered from analyzed features of House 4.

**Non-Residential Structure in the House 4 Zone**

Even though analyzed samples from this non-residential structure were small, the data are comparable to those from the two residential structures. Sherds from 59 vessels (MNV) were recovered from a 300-cm-deep excavation unit located in association with possible public (non-residential) architecture (Table 6-1). The pottery assemblage came from the 2 x 2 m pit (N4302 E4466) in the center of a structure on a raised platform. Thirteen sherds fell into the “unidentified” category.
Only three jars were recovered, and there were no tecomates. Here, restricted vessels composed only 5.1% of the entire assemblage. In terms of unrestricted vessels, two hemispherical bowls (3.4%), seven cylindrical bowls (11.9%), and 34 conical bowls (57.6%) were recovered (Figure 6-6). Almost 94% of the vessels were well-made unrestricted vessels (Table 6-2), suggesting that this locale was utilized for non-residential purposes. The low number of recovered vessels also met our expectations that this was non-residential architecture. Except for some tiny beads, no figurines or other luxury items were recovered from this unit, although I had expected to perhaps find more items related to possible religious activities.

The number of conical vessels was very high, and most of them were polished or smoothed on both sides. In comparison with conical bowls, the number of hemispherical bowls (3%) and cylinders (12%) was limited. In regards to the shape of conical bowls, there were many bowls with highly outleaning walls or even outflaring walls. There is no critical difference in recovered vessel forms from the upper and lower parts of the excavation unit, but only 15 vessels were recovered, from the 190-320 cm level. They included ten conical bowls (all gray), two cylinders (all yellowish white), and three unidentified vessels. Moreover, we found abundant carbon samples from this deep pit, which we suspect are evidence of ritual activities using incense burners. Overall, the data show that this assemblage corresponds to the Guadalupe phase (or later) in the Valley of Oaxaca. Thus, this non-residential architecture might not be contemporaneous with House 4 (Duncan et al. 2008)

In terms of the vessel size, ten out of the 59 vessels had larger orifices (> 30 cm), and larger vessels occupied around 16.9% of the entire assemblage (Table 6-3). All
three jars were small in size. There were two large cylinders and eight large conical bowls in the assemblage. About 24% of the conical bowls were large ones, but many base sherds here did not provide sufficient information concerning the size of the bowls, though they did reveal the form or shape of the vessels because their wall parts were preserved very well. I assume that there were more large conical bowls and cylinders in this unit. Based on these data, most of the serving vessels associated with this non-residential architecture were medium and large vessels.

In terms of vessel colors, none of the hemispherical bowls was decorated, and jars were all brown. Most conical bowls were gray, and cylinders were yellowish white. There was no luxury ware such as Delfina Fine Gray in this assemblage. There were very few simple brown vessels. In the Valley of Oaxaca, utilitarian vessels for daily use as well as less elegant vessels were not associated with high-status residences and public buildings (e.g., Marcus and Flannery 1996), so the Tayata data match with those from the presumed contemporaneous Valley of Oaxaca sites.

**Mound Structure in Area A**

I selected the pottery assemblage from the excavation unit of this principal mound structure for comparison with the data from the other residential and non-residential structures. Even though the timing of the construction of this tall mound is unknown, it could be associated with structures in the House 4 zone because the map (Figure 5-3) shows that all structures were aligned in space. Ninety-one vessels (MNV) were recovered from an excavation pit associated with the mound (Table 6-1). Seventeen sherds were too small and thus were put into the “unidentified” category. Nine jars were recovered, but there were no tecomates. Here, restricted vessels composed only 10% of the entire assemblage. In terms of unrestricted vessels, 8 hemispherical bowls (8.8%),
18 cylindrical bowls (19.8%), and 39 conical bowls (42.9%) were recovered. Around 88% of the vessels were unrestricted (Table 6-2), and the number of conical vessels was very high.

This assemblage came from a non-residential feature, so a similarity to the data with from the non-residential architecture in the House 4 zone was expected. There were many conical bowls with highly outleaning walls, and most of them were well polished. Some conical bowls had unique rim forms with simple incision, but none had unique motifs on the outer surfaces of the vessels. Also, all nine jars here did not have any sooting, and some of them were smoothed or polished. Thus, they were less likely to have been utilized in cooking. The fact that 88% of the vessels here and 94% of the vessels in the deep excavation unit of the non-residential structure were serving vessels suggests those places were used for feasting activities. No figurines and luxury imported items were recovered from this unit. In addition, no comal sherds were recovered from any feature of the site, indicating that the vessel assemblages of Tayata belong to the pre-500 BC period.

In terms of vessel size, 14 out of 91 vessels had larger orifices (> 30 cm), and larger vessels composed around 15.4% of the entire assemblage (Table 6-3). Only one hemispherical bowl out of eight in the assemblage was large, and there were two large jars. These jars had 44 cm orifices, but the wall thickness as well as internal treatment was different. Also, there were three large cylinders and eight large conical bowls in the assemblage. About 20% of the conical bowls were large ones, but no bowl had an orifice larger than 38 cm. The data suggest that the use of large vessels was limited here.
In terms of vessel colors, none of the hemispherical bowls was decorated. Jars were all brown, and most of the serving vessels were gray or yellowish white in the assemblage, but there was no luxury ware such as Delfina Fine Gray. Based on currently available evidence, fine gray bowls and fine yellowish white (similar to Atoyac Yellow-white in the valley of Oaxaca) cylinders were always associated with public places. At the same time, however, light brown conical bowls were utilized as serving vessels. Overall, the data from all vessel assemblages (houses, public architecture, and a primary mound) show that at Santa Cruz Tayata, access to luxury foreign wares from the Valley of Oaxaca and beyond was relatively limited.

**Discussion: Social Processes of Differentiation**

Even though no significant evidence of social inequality was recovered from Santa Cruz Tayata, it seems likely that social differentiation increased as houses competed for status and power. The number of excavated dwellings was limited, but it is possible to suggest how social houses tried to differentiate themselves by employing strategic actions while at the same time discouraging the emergence of centralized authority in this Middle Formative center. I believe that feasting was one of the key strategic practices that was part of processes of social differentiation, and it is amenable to archaeological analysis.

One justification for the archaeological inference for feasting is that feasting is a popular practice among many societies. However, the difference between normal consumption and feasting is undefined. Evidence of feasting is generally inferred archaeologically from ceramic data and food remains. Faunal (e.g., Hockett 1998; Shaw 1999), botanical (e.g., Turkon 2004), and isotopic (e.g., Smalley and Blake 2003) analyses have all been used convincingly to argue for the political importance of
feasting. Ceramic data have also been used to reveal systems of feasting (e.g., Blitz, 1993; Clark and Blake, 1994; Hendon 2003; Potter, 2000). However, archaeologists rarely identify individual feasts from household features, except for midden deposits that represent remains of all types of feasts and other ritual and mundane activities.

At Santa Cruz Tayata, for example, all the feasting activities in the Cruz phase might have been lumped together and treated as a single temporal unit. Over a period of several hundred years, food choice and production, pottery styles, and other elements of feasting could change. Because of that, archaeologists need to establish rigorous hypotheses to credibly deal with the data from middens. Thus, an archaeological approach to feasting must address how food consumption practices and status would have intersected during specific social transitions, such as the evident increase in social differentiation among Middle Formative societies in Mesoamerica.

The study of feasting is favored by some neo-evolutionists as a means to identify the presence of elites in the archaeological record. Archaeologists have typically interpreted the existence of complex, pre-state societies using certain trait-based indicators of elite persons (e.g., Creamer and Haas 1985; Peebles and Kus 1977; Renfrew 1973). In the neo-evolutionary framework feasting is viewed as a political tool to control society and demonstrate the power of generosity of a limited elite group. However, archaeological evidence from Tayata and other centers indicates that feasting occurred in the absence of archaeologically identifiable centralized authority. Considering the burial and household data from Tayata, my hypothesis is that house-based corporate agents utilized feasting strategically for integrative purposes to discourage emergent hierarchy within the community.
In the Valley of Oaxaca and the Mixteca Alta, an increase in the number and size of flat-base bowls during the Middle Formative period has been reported (Blomster 1998, 2004; Drennan 1976; Flannery and Marcus 1983, 1994). This evidence may suggest changes in foodways, increases in household size, increases in household wealth, or an increase in competitive feasting. Mills (1989:137) observed that patterns of food consumption, particularly feasting, including preparation and serving techniques as well as social context, had a great impact on serving vessel size and shape in the prehistoric northern Southwest. Spielmann (2002:198) also explained that feasting generally creates demands for larger cooking and more elaborate serving vessels. Serving vessels from House 4 at Tayata clearly show these trends, and indicate that house members strategically decided to not only increase the number and size of serving vessels, but also to modify their shape.

Feasting is a basic element in the construction and maintenance of social relations of power and inequality (Blitz 1993; Dietler 1996; Hayden 1996). Dietler (2001:67) defined a feast as “a form of public ritual activity centered around the communal consumption of food and drink.” One important point is that by their nature, feasts create reciprocal obligations between host and guest through the gifting of food and drink as well as items other than good (Lau 2002). Such reciprocity does not necessarily put people on an equal status, but it may serve to reinforce a rigid stratification (Keating 2000). In many cases, feasts provide opportunities for sponsors to enhance their status, often accomplishing this through the display of goods, including important artifacts (Wiessner 2001) and through gift-giving (Clark and Blake 1994; Dietler 1996; Perodie 2001). This type of feast empowers hosts, and the purpose of feasting is to acquire or
create socioeconomic, sociopolitical, and/or religious power. House practices of this kind may be seen in Formative societies where the reciprocal nature of feasting started to become a political tool to lead others into social debt.

If social houses in Santa Cruz Tayata were attempting to maintain some social equality, certain mechanisms would have been employed to prevent the emergence of social hierarchy because houses are fundamentally competitive for status and power (Gillespie 2000b:8). Even though the nature of feasting is political and thus maintaining feasting practice as a leveling mechanism requires great effort and patience, feasting in House 4 may have served to strengthen relations of house members and allied houses. What is significant is that commensal consumption and distribution of foods and drink is a practice which serves to establish and reproduce social relations (Dietler 2001:85). Feasts become the mechanisms of social solidarity that serve to establish the sense of community. Although future excavations may uncover other houses at Tayata with evidence of feasting, current data suggest that only House 4 hosted feasts. This indicates that House 4 may have been more powerful in certain social interactions than the other archaeological evidence suggests.

Feasting also naturalizes and objectifies inequality in social relations. When one social house continuously hosts feasting, others symbolically acknowledge their acceptance of subordinate status (Dietler 2001:72). Eventually, the host who continuously shows hospitality and generosity may occupy a particular elevated status position. This system does not require guests to pay the social debt, but it defines the power relationship between hosts and guests (Dietler 1996, 2001; Wiessner 2001).
Feasting is a political tool for corporate groups like houses to establish social relations with other houses. Under the system of patron-guest feasts, high-status houses could use feasts to strengthen their status and power. However, archaeological evidence shows that House 4 was not economically dominant and did not monopolize resources within the site. Another function of feasting is to create social debts to maintain equitable social relations, and the system potentially becomes a mechanism for preventing or discouraging emergent hierarchy in a small-scale society like Santa Cruz Tayata. As I noted above, future excavations may uncover more houses with evidence of feasting, but at this time I would argue that House 4 strategically employed feasting practices to discourage or prevent the concentration of power, while using shell-ornament production and other practices to compete for status and power. In other words, House 4 achieved higher status through combined strategies, while discouraging the emergence of dominant authority. Even though Santa Cruz Tayata eventually declined at the beginning of the Late Formative period, centralization of political power may not have played a significant role in the processes of social differentiation at this community.

Summary

I began this chapter introducing characteristics of Formative pottery in the Valley of Oaxaca while discussing issues of the analytical utility of similarities in pottery sequences of the Valley of Oaxaca and the Mixteca Alta. I then discussed the methods and procedures of my laboratory analysis, while putting emphasis on a techno-functional study of the pottery samples. Finally, I described household features and explained the results of the laboratory analysis to indicate consumption practices, especially feasting. Food consumption is one of the primary practices of any household,
and the techno-functional analysis of pottery revealed possible feasting activities at one of the Tayata households. The evidence of higher frequencies of dog remains and fish bones in the middens of House 4 (Duncan et al. 2008:5315) also support the likelihood of feasting practices at this house. House-based feasting could have played a role in maintaining social relations of house members and allied houses. Or feasts could even provide public opportunities for host houses to enhance their status vis-à-vis their neighbors (Clark and Blake 1994; Dietler 1996; Perodie 2001; Wiessner 2001).

In the next chapter I present different types of archaeological evidence indicating house practices which may have encouraged or discouraged emergent hierarchy in Formative Mesoamerica. The data from Chalcatzingo and San José Mogote demonstrate decentralizing processes of social change, and multiple hierarchies or heterarchical structures played significant roles in maintaining the social balance in these societies without centralized authority during the Middle Formative period. The ultimate purpose of the next chapter is to provide examples of house practices comparable to those interpreted from the data from Santa Cruz Tayata and to analyze differences and similarities of the processes of social change among contemporary regional societies, all of which are considered “chiefdoms” in neo-evolutionary perspectives.
Table 6-1. Vessel forms: house and non-house features at Santa Cruz Tayata

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<th>Jars, bottles</th>
<th>Tecomates, charcoal</th>
<th>Hemispherical bowls</th>
<th>Conical bowls</th>
<th>Cylinders</th>
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Table 6-2. Restricted and unrestricted vessels at house and non-house features

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Table 6-3. Distribution of large vessels at house and non-house features (30cm or larger orifice)

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<th>Vessel forms, characteristics</th>
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<td><strong>House 4 features</strong></td>
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<td>N4306 E4486 Midden 1</td>
<td>37(MNV:273)</td>
<td>15 cyl, 15 hemi, 7 conical</td>
</tr>
<tr>
<td></td>
<td>13.6%</td>
<td>Max: 38cm (bowl)</td>
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<tr>
<td>N4306 E4490 Midden 2</td>
<td>19(MNV:182)</td>
<td>5 cyl, 4 hemi, 10 conical</td>
</tr>
<tr>
<td></td>
<td>10.4%</td>
<td>Max: 34cm (2 bowls)</td>
</tr>
<tr>
<td>N4302 E4484 Burial 2 zone</td>
<td>18(MNV:116)</td>
<td>3 cyl, 2 hemi, 11 conical, 1 jar</td>
</tr>
<tr>
<td></td>
<td>15.5%</td>
<td>Max: 44cm (jar)</td>
</tr>
<tr>
<td>N4302 E4488 Burial 1 zone</td>
<td>13(MNV:99)</td>
<td>3 cyl, 2 hemi, 4 conical, 4 jar</td>
</tr>
<tr>
<td></td>
<td>13.1%</td>
<td>Max: 42-44cm (3 jars)</td>
</tr>
<tr>
<td>Excavation 2 House 2 zone</td>
<td>9(MNV:199)</td>
<td>1 cyl, 4 hemi, 3 conical</td>
</tr>
<tr>
<td></td>
<td>4.5%</td>
<td>Max: 38-40cm (3 bowls)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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</tr>
<tr>
<td><strong>Non-house features</strong></td>
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<td></td>
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<tr>
<td>N4302 E4466 Non-residential architecture</td>
<td>10(MNV:59)</td>
<td>2 cyl, 8 conical</td>
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<td></td>
<td>16.9%</td>
<td>Max: 32cm (conical bowl)</td>
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<td>14(MNV:91)</td>
<td>3 cyl, 1 hemi, 8 conical, 2 jars</td>
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<td></td>
<td>15.4%</td>
<td>Max: 44cm (2 jars)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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Figure 6-1. Forms of Cruz phase vessels recovered at midden features of House 4. The first three restricted vessels are: A. a jar, B. a tecomate, C. a jar. The remaining four unrestricted vessels are: D. a basin, E. a conical bowl, F. a cylindrical bowl, G. a hemispherical bowl.
Figure 6-2. Examples of serving vessels recovered at the midden of House 4 (N4306 E4486). A. a hemispherical bowl (tan, diameter: 30cm), B. a cylindrical bowl (white, diameter: 26cm), C. a conical bowl (gray, diameter: 22cm), D. a conical bowl (gray, diameter: 20cm).
Figure 6-3. Examples of serving vessels recovered at the midden/storage pit of House 4 (N4306 E4490). A. a hemispherical bowl (reddish brown, diameter: 34cm), B. a cylindrical bowl (white/gray, diameter: 20cm), C. a conical bowl (white, diameter: 30cm).
Figure 6-4. Examples of serving vessels recovered from the Burial 2 zone of House 4 (N4302 E4484). A. a conical bowl (tan, diameter: 22cm), B. a conical bowl (gray, diameter: 31cm).
Figure 6-5. Examples of serving vessels recovered from the Burial 1 zone of House 4 (N4302 E4488). A. a conical bowl (gray, diameter: 23cm), B. a conical bowl (gray, diameter: 17cm), C. a cylindrical bowl (white, diameter: 12cm).
Figure 6-6. Examples of serving vessels recovered from the non-residential architecture excavation unit in Area A (N4302 E4466). A. a conical bowl (gray, diameter: 32cm), B. a conical bowl (light gray, diameter: 30cm), C. a conical bowl (gray, diameter: 29cm).
As discussed in Chapter 1, the regional focus in my study is the Central Highlands of Mexico, the Valley of Oaxaca, and the Mixteca Alta in the Middle Formative period. Chalcatzingo in the Central Highlands of Mexico and San José Mogote in the Valley of Oaxaca were chosen because they offer well-documented archaeological contexts contemporaneous with Santa Cruz Tayata. All of those centers participated in interregional interaction networks and thus shared pan-Mesoamerican ideas, items, and motifs (e.g., Coe and Diehl 1980; Clark 1991; Flannery and Marcus 1994; Grove 1987). Also, archaeological evidence from those sites indicates the presence of social differentiation within the community, and excavation of residential structures there provides valuable sets of data that enable analyses of strategic practices of corporate agents. All societies examined in this study would be classified as “intermediate” by Feinman and Neitzel (1984), and neo-evolutionary theorists look for evolutionary structuring principles that can be used to compare societies at the same progressive stage or between different stages of an evolutionary typology (Blanton et al. 1996; Renfrew 1974; Sahlins 1963; Spencer 1993). However, the data from these Middle Formative centers cast doubt on neo-evolutionary categorization of chiefdoms, and support the proposals that societies change in non-evolutionary processes and that differentiation occurs without centralization.

This chapter introduces multiple data sets such as settlement patterns, mortuary practices, and dwelling location and size, to establish a foundation for comparing variable processes of social change, while also considering how the data sets do not fit the neo-evolutionary model of chiefdoms. In the first part of this chapter, I present a
summary of settlement pattern studies at Chalcatzingo and San José Mogote during the Formative period, with special emphasis on the Middle Formative period. The description of those early settlement patterns enables us to understand circumstances of the local socio-political environment. Then, I discuss data from each site to analyze corporate practices, and to reveal the utilization of different strategies for competition and social integration. I focus on dwelling location, burial treatments, and monument building in Chalcatzingo, while investigating burial treatments and characteristics of residential architecture in San José Mogote. I also discuss evidence of corporate practices in some smaller sites in the Valley of Oaxaca to compare them with San José Mogote. Finally, I conclude with a discussion about how unique corporate practices at those regional centers contributed to the emergence of variable processes of social differentiation during the Middle Formative period.

**Formative Period Settlement Patterns**

Neo-evolutionary archaeologists generally study the degree of political inequality by identifying multi-tiered settlement systems (Creamer and Haas 1985:742; Earle 1991:3; Feinman and Neitzel 1984:76; Hayden 1995:63; Spencer 1982:5). This perspective posits that farmers are expected to be evenly spaced across the landscape in an egalitarian type system, forming a single-tiered settlement. In the definition of chiefdoms, a two-tiered settlement pattern is expected within a region, with a larger and functionally diverse regional center controlling the multi-site polity (Carneiro 1981; Earle 1978; Wright 1977). Differences among the same-tiered systems are not expected within this framework. A general problem of settlement pattern analysis is the use of surface surveys to identify site-tiers. Some deeply buried sites may not be recovered, and the distribution of surface sherds at identified sites does not always represent the
extent of those sites. In Chapter 4 I discussed settlement patterns in the Mixteca Alta. Here the Formative settlements at Chalcatzingo and San José Mogote are discussed to examine differences in the settlement characteristics of those regional centers.

**Chalcatzingo**

Long-term archaeological projects at Chalcatzingo revealed that this center was influential in the region from the Early Formative period (Amate phase), and grew to become a powerful political and religious center in the highlands of Mexico by the late Middle Formative Cantera phase (Grove 1987a:440). However, some aspects of the Chalcatzingo settlement do not fit the taxonomic category of an intermediate stage of chiefdoms.

Chalcatzingo during the early Middle Formative Barranca phase is contemporary with San José Mogote during the San José and Guadalupe phases (Table 1-1). During the Early Barranca phase, the inhabitants of Chalcatzingo transformed the natural hill slopes to a series of terraces covering 10 hectares of level fields (Prindiville and Grove 1987:79). Even though the terracing activities required organized labor and a significant amount of time, no evidence of centralized authority has been recovered in the Barranca phase, except for some burials exhibiting higher ranks in the society (Merry de Morales 1987b:96). Moreover, there is evidence that the settlement was dispersed, with only one residence per terrace. The dispersed settlement form was maintained through the following Cantera phase (Grove 1987b:421). Despite its status as a major regional center in the central highlands of Mexico, the population of the village has been estimated at less than 325 people (Prindiville and Grove 1987:79). The size of Chalcatzingo during the Barranca phase was 13 hectares, making it the largest
settlement in the Amatzinac Valley. Chalcatzingo was positioned at the top of the valley site hierarchy (Prindiville and Grove 1987:79).

Chalcatzingo grew to about 40 hectares during the following Cantera phase. Residents erected stone carvings, stylistically similar to monuments at the Olmec site of La Venta on the Gulf Coast (Grove 1989), indicating the creation of ties with that distant center (Grove 1987a:435). In spite of the growth in site size, the population of the core area was still only about 400 people (Prindiville and Grove 1987:80). Even though archaeological evidence indicates that Chalcatzingo exercised power over surrounding polities (Grove 1987b:421), the population size does not fit the characteristic of chiefdoms.

**San José Mogote**

During the Tierras Largas phase in the Valley of Oaxaca (Table 1-1), San José Mogote was a small center, covering less than 10 hectares. However, in the following San José phase, the village developed significantly in size and in socio-political influence over other settlements in the Valley of Oaxaca. When San José Mogote reached 70 hectares in size during the San José phase, it was ten times larger than any other sites in the valley (Kowalewski et al. 1989:66). This large center persisted into the Guadalupe phase (Table 1-1) (Flannery 1976).

The growth of San José Mogote during the San José phase was rapid and extreme, and neo-evolutionary explanations of gradual and progressive expansion of this large village do not match these data. Because the center was composed of the main village and numerous outlying barrios, there is no general agreement on the actual size of San José Mogote (Marcus and Flannery 1996:106). However, the overall population of San José Mogote was probably around 1000 if most outlying barrios are
included in the estimate (Kowalewski et al. 1989; Marcus and Flannery 1996). The possibility that an estimated population of 2000 lived within the more than 40 other communities in the Valley of Oaxaca during the San José phase (Kowalewski et al. 1989) would mean that half of the population of the valley lived at San José Mogote. Most villages in the valley had populations of 100 persons or fewer at that time (Kowalewski et al. 1989).

Twelve to fourteen satellite villages were located within 8 km of San José Mogote, even though there were unoccupied farmlands elsewhere in the valley (Kowalewski et al. 1989; Marcus and Flannery 1996). That settlement pattern suggests that those satellite villages received economic and sociopolitical benefits by being close to San José Mogote. Obsidian data from the San José phase, for example, provides some evidence of close ties between certain wards at San José Mogote and certain villages in the valley. For example, the ward called “Area C” at San José Mogote had quite similar obsidian source percentages as did the valley villages of Abasolo and Tomaltepec (Marcus 1989:175-187). Marcus has also pointed out that Area C was likewise linked to Tomaltepec and Abasolo by way of the pan-Mesoamerican “fire-serpent” imagery on their ceramics. In contrast, San José Mogote’s Area B is linked to Huitzo and Tierras Largass with “were-jaguar” imagery on their ceramics (Marcus 1989). Even though such portable objects do not provide definite proof of any alliances or associations, the evidence nonetheless indicates frequent interactions between San José Mogote and its surrounding villages.

**Traces of Corporate Practices at Chalcatzingo**

As discussed earlier, only one residential structure was situated on any Chalcatzingo terrace (except for Terrace 1), creating a dispersed settlement pattern
during the Barranca and Cantera phases (Prindiville and Grove 1987:79). Over
generations, the residential structures on those terraces were intentionally burned at
intervals, and then rebuilt in the same location (Grove and Gillespie 2002:17; Prindiville
and Grove 1987:74). This practice has been interpreted as the development of
hereditary rights to property (Prindiville and Grove 1987:80), both to the dwellings as
well as to the terrace (Gillespie 2011:100). As Grove and Gillespie (2002:17) discuss,
residential structures had a life-cycle with ritual moments of birth and death, and the
cycle can be duplicated in the inhabitants’ life-cycles (e.g., Chapman 1994; Gillespie

Monumental architecture at Chalcatzingo indicates competition among elite groups.
Many high-status subfloor burials in Plaza Central Structure 1 indicate that this
residence belonged to a high-status group (Prindiville and Grove 1987:79). In neo-
evolutionary theories, this chiefly group would have been a dominant force of the
society and have controlled all resources. However, there is evidence for multiple high-
status groups at the site. For example, excavations on Terrace 25 recovered a number
of high-status burials in a large sunken stone-walled patio that contained a large
rectangular stone altar-throne. Nearby, on the same terrace, was a stone-faced platform
with an associated carved stone stela (Fash 1987). Moreover, other Cantera phase
stone-faced platforms are known at the site on different terraces. Even though it is
difficult to determine if those platforms were substructures for high-status houses
(Prindiville and Grove 1987:64), stelae with carved images of standing personages were
associated with some of those platforms. Taken together these data indicate that
multiple high-status groups competed for supremacy during the Cantera phase (Gillespie 2011).

Mortuary practices of high-status houses at Chalcatzingo provide further details about the presence of multiple hierarchies at that center. However, before discussing mortuary practices at Chalcatzingo, I shall comment on some characteristics of residential burials which are common to many Mesoamerican households. First, residential burial is the form of burying the dead in the immediate spaces of the living, specifically under house floors in most cases (Gillespie 2011:98). Living in the same space with the dead creates a continual interaction with the dead, who are usually viewed as ancestors who share identities, statuses, and property rights with the living (Gillespie 2011:99). Residential burials generally suggest property claims to the land where the residences are situated, and the physical presence of the dead as shareholders strengthens the structural relationship with the property (Gillespie 2000b). Also, sequential burials in the same location of the residential structure signify “the strategic linking of identities of the living inhabitants to the deceased over time” (Gillespie 2011:100). Another important characteristic of residential burial is the closed nature of mortuary space in comparison with burials in cemeteries or public structures. Joyce (1999:41), in her analysis of Formative burials in Mesoamerica, argued that residential burials reveal personal identities that emerge and are played out within the house as a social arena, while group identities are manifested by burials within non-residential structures, mainly platform mounds (Gillespie 2011:99).

Thirty-eight burials were recovered beneath the floors of Chalcatzingo’s largest residential structure, Plaza Central Structure 1. That quantity helps indicate that the
residence had been occupied over generations. Burials from PC Str. 1 show variable social status from low to high, with the highest status exhibited by individuals with jade objects in stone crypts. (Merry de Morales 1987b:98). However, all of these subfloor burials date to the Late Cantera subphase and were recovered from under the floor of a Late Cantera phase structure that had been rebuilt over the remains of earlier structures. Despite the great longevity of the residential location, the PC Str. 1 burials were apparently deposited within a short period (Merry de Morales 1987b:101). This evidence suggests that these burials do not represent a high number of generations of inhabitants nor the members of a single household (Gillespie 2011:102).

Terrace 25, with its sunken patio and stone altar-throne, shows a long use of the location for burying higher-status individuals. In the Middle Barranca subphase, a residential structure had been built on this terrace and several burials on Terrace 25 may have been associated with the structure (Fash 1987:86). Later, in the Cantera phase, a table-top altar-throne of multiple cut stone blocks was erected on and above the remains of the Barranca phase house, reflecting an association of the altar-throne with that past house and those already buried in that location (Gillespie 2009:12). The structural setting of the Terrace 25 burials had been changed from residential to ritual or ceremonial with the erection of the sunken patio (symbolically a portal to the underworld; Gillespie 2009). These acts reveal the significance of the continuity of connections with ancestors between the Barranca and Cantera phases (Gillespie 2011).

The inclusion in graves of exotic items such as jade beads and other greenstone ornaments is taken as a clear indication of wealth, prestige, and status for the survivors who bury the dead (e.g., Flannery 1968). Even though PC Str. 1 has been recognized
as an elite residential structure, few indications of economic wealth other than jade items were found by its excavators. It has been suggested that jade items cannot always be treated as definite markers of high-status groups (Merry de Morales 1987b:99). For example, jade beads were different from other greenstone items because they were often recovered in or near the mouth of the deceased (Merry de Morales 1987b).

The two “richest” burials recovered at the site were Burials 39 and 40, found atop a large earthen platform, PC Str. 4. These are the only two Cantera phase burials recovered at Chalcatzingo that had been wearing the jade as jewelry at the time of burial (Merry de Morales 1987b:98). The two individuals wore more jade than was found in all other of the site’s burials combined (Merry de Morales 1987b:98). Gillespie (2011:115) interpreted these two individuals as “historically distinct individuals” who can be distinguished from the other deceased persons among the PC Str. 1 burials. According to Gillespie (2011:115), identities of these two individuals were signified “in their inalienable association with specific, likely named, intact items of house property that remained on their bodies in death rather than broken up and retained by survivors.” The data suggest those two individuals were “memorialized within a much wider social field than simply that of their own house (and allied houses)” (Gillespie 2011:115). The mortuary practice of increasing display capabilities, by burying them atop the PC Str. 4 mound, suggests the increasing awareness of constructing public images (Gillespie 2011:115).

Connections or interactions between Chalcatzingo and the Olmec have been investigated (e.g., Grove 1989, 1997), and some shared patterns have been recognized.
in certain burials. For example, Gillespie (2011) notes that La Venta burials and the Chalcatzingo Burials 39 and 40 share the practice of wearing jade jewelry (earspools, bead belts), and the use of red pigment on or over the grave furniture (Drucker 1952; Drucker et al. 1959). Merry de Morales (1987b:103) points out other similarities between La Venta interments and subfloor burials of PC Str. 1. Moreover, Chalcatzingo Burial 33 included a small stone anthropomorphic figurine in the “La Venta Olmec style”, as well as a jade awl (Gillespie 2011:116). This evidence seems to indicate that La Venta and Chalcatzingo referenced each other for mortuary practices, even though it is difficult to determine which site’s high-status groups were responsible for initiating this chain of repeated practices (Gillespie 2011).

The links between La Venta and Chalcatzingo also occur in the monumental art at both sites, often in the form of certain iconographic symbols that occur only at these two sites (Grove 1989:134). At the same time, Chalcatzingo independently developed a set of its own motifs, and those do not co-occur at Olmec centers on the Gulf Coast (Grove 2000).

**Corporate Practices in San José Mogote**

Considering first burial diversity, in the Valley of Oaxaca, the Tierras Largas phase burial record exhibits a limited amount of diversity, but diversity appears to increase during the San José phase (Winter 1972). From the Middle Formative Guadalupe phase burial data, there is a hint that two distinct levels of social status, encoded in mortuary ritual, may have emerged (Flannery 1976; Marcus and Flannery 1996; Winter 1972). Even though the mortuary practices during the Guadalupe phase begin to show rankings in burial treatments, available data do not indicate such distinctive diversity of burial treatments during the previous San José phase (Flannery 1976; Winter 1972).
As for social ranking as discerned from burials, no Tierras Largas phase burials in the Valley of Oaxaca have so far provided the evidence of high-status groups (Winter 1972). Of the San José phase burials, five interments at Tomaltepec and four at San José Mogote showed some degree of high status, and one of the San José phase burials (Burial 11) was a male from Tomaltepec in a seated position with two ceramic vessels and a greenstone celt at his feet, another vessel at his head, 15 greenstone beads near his neck, and one in his mouth (Whalen 1981:147). From the Guadalupe phase, two female burials indicated an affiliation with high-status groups, and Burial 68 at Tomaltepec had a ceramic vessel at her head, a chert point at her chest, and a greenstone bead in her mouth and one at her chest (Whalen 1981:152). The most remarkable burial came from Fabrica San José (Burial 39), where a female was buried with a vessel at her feet, two at her chest, and one at her head, as well as 47 round and six tubular greenstone beads.

In terms of recovered items from burials and other features of households, many exotic items that circulated in San José phase society were not controlled by dominant high-status groups (Marcus and Flannery 1996). Even though the evidence that thousands of Gulf Coast mussels, Pacific Coast pearl and spiny oysters, and Pacific Coast estuary snails reached San José Mogote indicates competition among houses, some mechanisms prevented the concentration of those exotic items in specific houses. Marcus and Flannery (1996) believe that some of these exotic items may have been considered sumptuary goods and others may have been used as trade goods by being converted into ornaments.
Oaxacan archaeologists consider that evidence for rank from burials and other features is ambiguous before the Rosario phase, immediately prior to the foundation of Monte Albán in the Valley of Oaxaca (Flannery and Marcus 1983; Marcus and Flannery 1996). However, it is possible to argue that corporate groups of San José Mogote and surrounding small settlements did not use mortuary practices for expressing social differentiation, even though differentiation grew as houses competed for status and power during the Early and Middle Formative periods. According to the evidence from burials, the increase in the number and quality of grave items occurred in the Valley of Oaxaca from the Guadalupe phase (Table 1-1). However, in the interpretations of Marcus and Flannery (1996:93), political inequality emerged in the Valley of Oaxaca during the San José phase. This means that changes in mortuary practices of exhibiting wealth did not contribute to the emergence and early development of social hierarchy in the Valley of Oaxaca.

The earliest well-documented non-residential architecture, dating to the Tierras Largas phase, was found at San José Mogote. It is comprised of three successive rebuildings of a rectangular, one-room building. The most complete construction was the final rebuilding (Structure 6), which is a 5.3 x 4.3 m, whitewashed structure on a platform 8 x 8 m wide, and 40 cm high (Flannery and Marcus 1994:128-129). Archaeological evidence of households from the Tierras Largas phase is poor, and only one residential structure, whitewashed and raised on a small platform, has been recovered (Flannery and Marcus 1994).

During the San José phase Marcus and Flannery (1996:103) interpret a change in status of San José Mogote households from elite to non-elite. The sizes of House 2 in
Area C and House 13 in Area A, for example, were almost the same during that phase, but House 2 was whitewashed and contained a higher frequency of animal bones and exotic artifacts than House 13. Moreover, House 16-17 in Area B was whitewashed and contained similar artifacts to House 2, but with higher quantities of jade (Marcus and Flannery 1996). Overall the evidence indicates that the size or form of architecture does not reflect the wealth of individual houses, but that the economic status of inhabitants of whitewashed houses was likely higher within the community. Spencer (1993) argued that this situation of social diversity could have generated internal sources of political authority. What appears to be corporate practices of controlling the display of status and power could indicate some sort of leveling mechanism. Thus the notable implication is that corporate groups in each ward of San José Mogote tried not to distinguish themselves from others for the sake of maintaining balance within the community. The fact that architecture size and form do not reflect socio-economic status and power shows a lack of fit between these data and the taxonomic category of chiefdoms as usually understood.

The small settlement of Fabrica San José provides comparable data of higher status households during the succeeding Guadalupe phase. The higher status of one house was inferred from Burial 39, a female individual buried with a significant number of exotic items (Drennan and Flannery 1983:67), as noted above. Marcus and Flannery (1996:113-115) suggested that she might be an elite member of this center because she could have been sent from San José Mogote. Another example of higher status households comes from the site of Huitzo, where three Guadalupe-phase households have been interpreted as high-status residences due to their proximity to non-residential
architecture (e.g., Flannery and Marcus 1983:62). As at San José Mogote, the size and form of residential architecture did not indicate any socio-economic or political status. However, the significant point is that the primary evidence of higher status households at San José Mogote, such as different proportions of artifact types, did not play any roles in indicating elevated status at Huitzo.

In addition, the site of Tomaltepec in the Tlacolula arm of the Valley of Oaxaca had high- and low-status houses ever since the beginning of the San José phase. Structure 11 and House 4 shared domestic refuse and storage pits, but show clear differences in architecture size and accumulation of exotic items. While Structure 11 was 4 x 8 m and raised 1 m on a platform, House 4 was 4.9 x 2.2 m in size (Whalen 1981:43-45). In addition to size differences, Structure 11 contained higher frequencies of mica, non-local chert, shell ornaments, and obsidian (Whalen 1981:60). The unique aspect of the evidence is that Structure 11 and House 4 manifest the only residential diversity of size and form documented from the Early or Middle Formative in the Valley of Oaxaca, and the location of the site was not at the heart of political power, namely at San José Mogote (Whalen 1981).

In the Valley of Oaxaca, hierarchy was not emphasized by residential differences and households were relatively similar in size and form. Social status and power were not displayed by elevating elite residences above those of their neighbors. Instead, differences in the quantity and quality of exotic items were hidden by houses to maintain social relations with others. Throughout the entire Early and Middle Formative periods, all residences were small, and thus Flannery and Marcus (1983:60) observed that “even
the most elaborate Rosario phase residences so far discovered could have been built by the members of one family."

In terms of interaction, some neo-evolutionary archaeologists believe that interaction played major roles in the emergence of instituted hierarchy. However, in the Valley of Oaxaca, corporate groups in neighboring valleys lived within relatively short distances of each other. Thus, extra-valley contact could have been frequent, even prior to the San José phase (Marcus and Flannery 1996:52). Therefore, there is a possibility that different types of interaction may have been well developed before social hierarchy emerged. Even in their relationships with the Olmecs, corporate groups in the Valley of Oaxaca might have incorporated Olmec-type imagery as one among numerous foreign sources of prestige items (Marcus 1989; Marcus and Flannery 1996:119-120).

Discussion: Social Processes of Differentiation

I have discussed the variety of corporate practices to describe how houses uniquely competed with other houses and at the same time managed relations with one another for maintaining social equilibrium in the community during the Middle Formative period. Even though I investigated different aspects and datasets of corporate practices in Chalcatzingo and San José Mogote, a comparison of practices and social processes provides us with ideas about how archaeological manifestations of social differentiation emerged out of variable strategic practices undertaken by a network of interacting houses within changing material and historical conditions.

I argue that the presence of multiple hierarchies maintained some social balance at Chalcatzingo and discouraged the emergence of dominant authority during the Middle Formative period. The neo-evolutionary interpretation that a single chiefly lineage emerged at Chalcatzingo associated with Terrace 1, transforming society and
increasing the inequality gap (e.g., Evans 2004), does not fit the Chalcatzingo evidence. My thesis examines how multiple high-status corporate groups emerged and differentiated themselves from others by employing strategic social actions throughout history.

Social differentiation at Chalcatzingo grew as houses competed for owning and enlarging property. Some groups successfully promoted status and power by managing estates, acquiring and controlling resources, building monuments for displaying group identity and status, and engaging in unique mortuary practices, while others were possibly incorporated into more powerful houses. As discussed, each terrace was occupied by a single residence (Prindiville and Grove 1987), interpreted as associated with a specific social house, and preserving that house’s estate in the same location for multiple generations legitimated the social status of the house as it developed hereditary property rights to land and residential structure (e.g., Gillespie 2007). Successful houses increase the number of house members through different types of alliances, and they enlarge properties by incorporating other estates and acquiring exotic items and foreign ideas through interregional networks (e.g., Gillespie 2000b).

As seen among the burials at Chalcatzingo, mortuary practices are varied, and houses utilized different strategies to make connections with ancestors. Residential burials at Chalcatzingo contain remains with heirloomed costume ornaments and other valuable items that signify ancestors (Gillespie 2011). Mortuary practices create vertical relations between the living and the dead, and the house becomes perpetuated in part through these means (Gillespie 2007:36). Burials and monuments at Chalcatzingo also show strong connections with houses in different regions, such as the Gulf Coast Olmec.
Incorporation and display of foreign items, images, and ideas creates a bond beyond the community, and houses can collectively maintain social balance for discouraging the emergence of centralized groups by creating alliances with powerful societies in different regions.

San José Mogote and smaller centers in the Valley of Oaxaca also show evidence that multiple hierarchies rather than centralized authority played significant roles in societal development. Even though social differentiation increased during the San José phase (Marcus and Flannery 1996:93), corporate groups at San José Mogote tried to hide disparities in socio-economic status, and maintained social balance by carefully choosing actions to discourage the emergence of a centralized hierarchical structure. I discussed the alliance strategy of San José Mogote houses and addressed the issue of why this center did not have much opposition within and beyond communities throughout the Middle Formative period.

Neo-evolutionary theory assumes that the elites accumulate wealth and display status and power by elaborating residences and burials and building mounds and monuments. The residential structure is a constant reminder on the landscape of the differences between those who live in larger well-constructed residences and those who do not (e.g., Spencer and Redmond 2004). However, at San José Mogote the size and form of the residential structures did not develop to display status and power. Rather, houses in different wards of the site tried not to construct distinctive house features, possibly to avoid conflict and maintain stability. Only when we see the quantity and quality of valuable artifacts within the structure can we identify probable variations in socio-economic status.
I further argued that creating external alliances among houses played a significant role in maintaining social relations within the San José Mogote community and smaller centers in the Valley of Oaxaca. The Tierras Largas phase residential structure recovered in Area C of the site was rebuilt at least three times (Flannery and Marcus 1994). Thus, the social house associated with that structure claimed the longevity of status by occupying the same space for generations. Houses in Area A and B competed with ones in Area C, and corporate groups in each ward created alliances with neighboring smaller societies in the Valley of Oaxaca. The evidence of different alliances is reflected in shared images on ceramic vessels and in similar obsidian distribution patterns between the wards of San José Mogote and outlying allied villages (Flannery and Marcus 1994; Marcus 1989; Marcus and Flannery 1996).

San José Mogote did not face competition originating from within the valley for centuries and functioned at the top of the political organization. Houses in each ward competed for status and power and took strategic actions to differentiate themselves by allying with smaller communities. It is possible to argue that those house practices could eventually have become an integrative mechanism for organizing societies in the valley (suggested by Feinman 1995:268), and houses at San José Mogote tried to maintain the balance within the site by restricting displays of status and power. The size and form of houses in Area A (House 13), B (House 16 & 17), and C (House 2) were almost the same. Minor differentiation during the San José phase, such as whitewashed house walls (Marcus and Flannery 1996), suggests that multiple hierarchies within the site facilitated social stability.
Summary

I began this chapter discussing settlement patterns at Chalcatzingo and San José Mogote, while analyzing whether the evidence fits the ideal chiefdom categorization. Then I considered details about corporate practices focusing on houses (not households) while discussing dwelling locations and mortuary treatments over time at Chalcatzingo. I then discussed the size and form of residential architecture as well as mortuary treatment at San José Mogote and surrounding small sites to analyze and interpret house-based corporate strategies within and beyond the community. Finally, I summarized the data from these two regional centers contemporaneous to Santa Cruz Tayata, and concluded with the discussion about how the diversity of their corporate practices contributed to the emergence and development of social differentiation.

The data set suggests that no centralized authority in these two regional centers monopolized control over the community and its hinterland during the Middle Formative period, and that outcomes of various corporate practices show instead a variety of social forms. The strategies I found in these Formative centers are the combination of competing and integrating practices that could discourage or slow an emergence of centralized authority. The next chapter presents a final discussion of the results of this comparative research and concludes with my perspectives on how archaeological manifestations of social differentiation emerged and developed through the variability of social processes during the Middle Formative period.
CHAPTER 8
CONCLUSION

A House-Centered Approach to Issues of Social Complexity

My study began with the general thesis that Mesoamerica provides rich archaeological data for understanding the formation of complex societies in its different regions, which were interconnected with one another. The Middle Formative period is especially significant because specific ideas of value and legitimacy, which were articulated in part through various social practices that established order, are considered to have structured actions or constrained alternative actions and values in subsequent time periods in Mesoamerica (Joyce 2000c; Joyce and Grove 1999). My particular interest focused on the thesis, as explained by various archaeologists, that social differentiation started to develop in concert with Middle Formative chiefdoms, and the emergence and development of complex societies in Mesoamerica depended on a balance between the ecological parameters of population and environment and the effects of regional and interregional interaction controlled by competitive chiefly figures (Clark and Blake 1994; Dobres and Hoffman 1994; Marcus and Flannery 1996). With many archaeological studies focusing on when this social configuration emerged within early societies (e.g., Arnold 1996a; Earle 1991; Feinman and Marcus 1998; Johnson and Earle 2000), I started to investigate the evidence for this concept of social complexity as well as the processes of emergent complexity.

As detailed in Chapter 2, the study of complex societies in Mesoamerica has been dominated by neo-evolutionary theories (e.g., Sanders and Price 1968; Spencer and Redmond 2004), and origin and development of social inequality has been analyzed by archaeological variables associated with specific stages within an evolutionary
framework. Mesoamerican societies were categorized into social types and were presumed to evolve from simple to complex. Also, centralization of power was considered inevitable for any social transformations to the next stage.

However, although societies in Late Formative Mesoamerica are clearly more stratified than those in the Middle Formative period, the archaeological evidence from Middle Formative centers fails to match these neo-evolutionary assumptions. I considered that an analysis of the processes of the emergence of social ranking must encompass variation in the manifestations of social complexity, rather than assume homogeneity or some inevitable trajectory towards centralized hierarchy. Therefore, I was interested in conceptualizing complexity in non-evolutionary perspectives, and investigating how archaeological manifestations of social differentiation emerged as outcomes of a variety of human agents’ strategic actions.

I emphasized that we could not fully understand the processes of social differentiation until we changed the unit of analysis from the society as a whole to smaller entities, namely, actual corporate groups that could express corporate agency and that would exhibit variation both within and between sites or regions. I further suggested that agents’ strategic practices might encourage or discourage emergent hierarchy and that multiple hierarchies or heterarchical structures could have played significant roles in social change. My case study therefore focused on three Middle Formative centers in the Central Highlands of Mexico, the Valley of Oaxaca, and the Mixteca Alta that provide comparable data of corporate agents’ practices for differentiating themselves from others in the societies, in the absence of significant socio-economic and political inequality.
My study followed the premise that archaeological manifestations of social differentiation are outcomes of strategic actions of agents who competed with each other for status and power, negotiated relationships for maintaining and promoting status, and sometimes resisted emerging hierarchy. Therefore, it is my contention that understanding a variety of corporate practices is essential for revealing how social differentiation occurred through multiple trajectories within a community over time. In order to focus on the variability of historical processes, I employed practice theories that reveal how people came to live within one of a variety of socially differentiated structures. Practice theories posit that social analysis should focus on the ways that agents work within organizing principles to which they are habituated, and allow us to understand the variability of social processes that are involved in social transformations.

Because my study focuses on micro-scale corporate practices to analyze processes of social differentiation, I employed a house-centered approach (Gillespie 2007) which I described in Chapter 3. Lévi-Straussian houses, as corporate agents following his definition, allow for the analysis of strategic actions and their historical outcomes because the study of the house always deals with duration or longevity, a linking of the present with the past (Gillespie 2000b:18). Diachronic rather than synchronic research concerning houses is necessary to reveal long-term strategies for acquiring, maintaining, and replacing resources, and how the outcomes of strategic actions for competition may constitute hierarchy and lead to social change through time (Gillespie 2000b:11).

The background for the identification and analysis of complex societies in non-Maya Mesoamerica was discussed in Chapter 4 with a special focus on Middle
Formative centers on the Gulf Coast of Mexico, the Central Highlands of Mexico, the Valley of Oaxaca, and the Mixteca Alta to describe the interconnected nature of Middle Formative societies. In my fieldwork, I conducted survey, mapping, and excavations at the site of Santa Cruz Tayata in the Mixteca Alta. The Tayata project was designed and organized by Dr. Andrew Balkansky of Southern Illinois University, and I joined the project with a grant I received from the Foundation for the Advancement of Mesoamerican Studies, Inc. (FAMSI). As described in Chapter 5, I conducted excavations in the northeastern part of area A at Tayata. There a residential structure and its associated features, as well as a non-residential structure with unique stone foundations, were uncovered. Artifact assemblage data from the household excavations at Area A provided information allowing me to interpret household consumption practices and in turn, householder activities and their socio-economic status (following Smith 1987). Most of the artifacts obtained from the House 4 excavations in area A came from burials and middens and secondly from below roof or wall debris. The least number of artifacts were found in hearths and directly on floors. The pottery assemblage from this house was carefully recorded in detail for further analysis.

In order to analyze possible archaeological evidence for feasting practices in Santa Cruz Tayata, I employed a techno-functional analysis of pottery assemblages from two residential structures (Chapter 6). Techno-functional analysis, along with the evidence from faunal remains, provided information on food consumption practices at House 4. I argued that house-based feasting could have played a role in maintaining the social relations of house members and/or allied houses. Feasts could have also provided opportunities for host houses to enhance their status, often through the display
of goods including important artifacts (Wiessner 2001) and through gift-giving (Clark and Blake 1994; Dietler 1996; Perodie 2001). My laboratory analysis also focused on the evidence of shell-working associated with House 4, and I hypothesized that acquiring marine shell and crafting shell ornaments could have demonstrated a corporate group identity within the house and the community, and the distribution of crafted shell items may become a communal identity relative to others in the Mixteca Alta (e.g., Bayman 2002).

As described in Chapter 7, my comparison of corporate practices and social processes based on archaeological evidence from Chalcatzingo, San José Mogote, and Santa Cruz Tayata was significant for revealing similarities and differences in the mechanisms of social differentiation. These three centers are important because of their role as prominent political centers and are integral to my research agenda to demonstrate that societies do not always follow a series of stages from simple to complex. Furthermore, all three of these centers declined in size and influence at the beginning of the subsequent Late Formative period (c. 500 BC), which is another indicator that centralization and increasing complexity from chiefdom to state levels is not inevitable.

**Mechanisms of Social Differentiation**

Mechanisms of social differentiation at Chalcatzingo, San José Mogote, and Santa Cruz Tayata were discussed in Chapters 6 and 7. I introduced burial treatment practices from Chalcatzingo and argued that the competition of multiple property-owning corporate groups likely discouraged or slowed the emergence of centralized authority. San José Mogote also showed evidence of impeding emergent hierarchy in another manner. Each social house or corporate group in areas A, B, and C of the site created
alliances with surrounding settlements, and the outcomes of these practices created a power balance within and beyond the San José Mogote community. I interpreted, from a house-centered perspective, that houses in each ward of San José Mogote employed integrative strategies to maintain and transform the society while discouraging the emergence of centralized authority. Long-term interactions created horizontal relationships among multiple houses in different areas of the Valley of Oaxaca, and property-owning corporate groups at San José Mogote occupied the same spaces for generations to create a vertical relationship with their ancestors. Finally, the evidence of feasting from Santa Cruz Tayata indicates that corporate groups could have employed feasting practices as an integrative mechanism. I also argued that the presence of rich feasting evidence in one house does not always mean that this house controlled the society or achieved highest status, because food, including dog meat, could have been shared among residents for integrative purposes. Also, architecture and burial evidence indicates no particular socio-economic differentiation in Santa Cruz Tayata.

Overall, these societies transformed through multiple trajectories created by a variety of corporate practices, and agents employed decentralization strategies to maintain social harmony within the community, even as they sought to enhance their own prestige and status. Corporate groups always compete to differentiate themselves from other groups by employing various strategies, and thus eventually one house may successfully acquire power, in which case society becomes more stratified. In the case of the centers I have discussed, as I noted above, they all declined at the beginning of the Late Formative period, even though each had became more differentiated at the end of the Middle Formative period.
General Contributions and Future Research Potentials

This study contributes a new and substantial set of empirical archaeological data for a part of the Mixteca Alta that has not been intensively investigated. Prior archaeological surveys in the Mixteca provided preliminary chronological and settlement data on the principal centers and isolated structures in the Nochixtlan Valley (Spores 1967, 1972, 1974). With the exception of the site of Huamelulpan (Balkansky 1998), no archaeological surveys have been conducted for most of the Formative period sites of the Mixteca Alta.

Moreover, only a limited number of archaeological studies focusing on Formative Mesoamerica have employed corporate agency to analyze microscale strategic actions to understand processes of social differentiation. Thus, my study complements the dominant macroscale neo-evolutionary perspectives of centralization and progressive stages, and provides alternative views for interpreting archaeological manifestations of social differentiation.

Finally, my study presents a case for Middle Formative regional centers as house societies in which corporate agents took a variety of strategic actions to enhance their status and power, while paying attention to maintaining social balance or equilibrium within and beyond the community. A comparative analysis of social processes among these contemporary (and historically related) centers, focusing on similarities and differences in their mechanisms of social differentiation, provides a valuable contribution to Mesoamerican studies and to the understanding of the emergence of complex ranked societies more generally.

Throughout this study I developed an understanding of the nature and intensity of complex societies in Formative Mesoamerica. Although this study is principally based
on partial archaeological data, it provides substantial evidence for the mechanisms of social transformations at three Middle Formative centers. However, like many interpretations of ancient activities based on preserved archaeological data, it is susceptible to challenges from competing theoretical perspectives. This is the first systematic study of Formative houses in the Mixteca Alta, and thus the interpretation of the results is limited by the scarcity of comparable data. The possible patterns identified in this study are not testable until additional houses are excavated. For example, it was hard to associate some of the features and their artifact assemblages with particular residential and non-residential structures. Thus, the conclusions I reached about the nature of house practices are limited by the site’s state of preservation. Although I can argue that the excavated houses date to the Cruz period, I am unable to definitively state that these houses were associated or were in use at the same time. My analysis was limited to a sample of features associated with the structures, and it is unknown at this time how many other features may have been associated with them; thus, I am uncertain as to the representativeness of my sample.

Future archaeological work, including extensive excavations, is recommended to confirm the variability of corporate practices and processes of social differentiation. The scarcity of Formative period research focusing on microscale practices makes it difficult to understand how other processes of differentiation occurred in different sections of the sites. In concluding this study, I reiterate that my research results expand our knowledge of Middle Formative societies and the concepts of social complexity. However, further research is needed to understand how and why certain major Middle
Formative centers with evidence of social hierarchy declined at the beginning of the Late Formative period.
APPENDIX A
ARCHAEOLOGICAL FEATURES

Table A-1. Pit feature 1 of House 4: midden in the north side of the house covering zones N4306, E4486 & 4488. Ce=ceramics, Li=lithics, Bo=bones, Fig=figurines.

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<td>4 (175-194)</td>
<td>Ce, Li, Bo</td>
</tr>
<tr>
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<td>N4306 E4486</td>
<td>IV</td>
<td>5 (195-212)</td>
<td>Ce, Li, Bo</td>
</tr>
<tr>
<td>1368</td>
<td>N4306 E4486</td>
<td>IV</td>
<td>3 to 5</td>
<td>Fig</td>
</tr>
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<td>6 (213-224)</td>
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<td>surface</td>
<td>117-156</td>
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Table A-2. Pit feature 2 of House 4: midden in the north-east side of the house covering the zone N4306 E4490. Ce=ceramics, Li=lithics, Bo=bones, Fig=figurines.

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<td>2 (171-184)</td>
<td>Ce</td>
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<td>Ce, Li, Bo</td>
</tr>
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<td>III</td>
<td>3 (185-198)</td>
<td>Ce, Bo, Fig</td>
</tr>
<tr>
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<td>III</td>
<td>4 (199-216)</td>
<td>Ce, Li, Bo</td>
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<td>Soil Sample</td>
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<td>II</td>
<td>3 (185-198)</td>
<td>Ce, Li, Bo</td>
</tr>
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<td>Ce, Li, Bo, Fig</td>
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</table>

213
Table A-3. Pit feature 3 of House 4: Burial 2 zone in the west side of the house covering the zone N4302 E4484. Ce=ceramics, Li=lithics, Bo=bones, Fig=figurines.

<table>
<thead>
<tr>
<th>Bag#</th>
<th>Locus</th>
<th>Capa</th>
<th>Level</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1176</td>
<td>N4302 E4484</td>
<td>I</td>
<td>1 (120-133)</td>
<td>Ce, Li, Bo</td>
</tr>
<tr>
<td>1204</td>
<td>N4302 E4484</td>
<td>II</td>
<td>2 (133-148)</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1206</td>
<td>N4302 E4484</td>
<td>II</td>
<td>3 (148-165)</td>
<td>Ce, Li, Shell</td>
</tr>
<tr>
<td>1209</td>
<td>N4302 E4484</td>
<td>II</td>
<td>3 (148-165)</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1222</td>
<td>N4302 E4484</td>
<td>IV</td>
<td>4 (164-167)</td>
<td>Ce, Li, Shell</td>
</tr>
<tr>
<td>1223</td>
<td>N4302 E4484</td>
<td>II</td>
<td>4 (164-174)</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1224</td>
<td>N4302 E4484</td>
<td>II</td>
<td>4 (164-174)</td>
<td>Carbon Sample</td>
</tr>
<tr>
<td>1248</td>
<td>N4302 E4484</td>
<td>IV</td>
<td>4 (63-179)</td>
<td>Ce, Li, Bo, Shell</td>
</tr>
<tr>
<td>1299</td>
<td>N4302 E4484</td>
<td>I</td>
<td>1 (172-183)</td>
<td>Ce, Li, Figurine</td>
</tr>
<tr>
<td>1300</td>
<td>N4302 E4484</td>
<td>I</td>
<td>2 (180-196)</td>
<td>Ce, Li, Figurine</td>
</tr>
<tr>
<td>1301</td>
<td>N4302 E4484</td>
<td>I</td>
<td>3 (192-205)</td>
<td>Ce, Li, Bo</td>
</tr>
</tbody>
</table>
Table A-4. Feature of House 4: Burial 1 in the east side of the house covering zones N4302 E4488 & 4490. Ce=ceramics, Li=lithics, Bo=bones, Fig=figurines. First two bags come directly from Burial 1.

<table>
<thead>
<tr>
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<th>Locus</th>
<th>Capa</th>
<th>Level</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1265</td>
<td>N4302 E4488</td>
<td>IV</td>
<td>4 (154-189)</td>
<td>Burial</td>
</tr>
<tr>
<td>1303</td>
<td>N4302 E4490</td>
<td>NA (-214)</td>
<td>Burial</td>
<td></td>
</tr>
<tr>
<td>1162</td>
<td>N4302 E4488</td>
<td>surface</td>
<td>107-125</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1185</td>
<td>N4302 E4488</td>
<td>I</td>
<td>1 (125-131)</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1189</td>
<td>N4302 E4488</td>
<td>II</td>
<td>2 (132-138)</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1203</td>
<td>N4302 E4488</td>
<td>IV</td>
<td>3 (132-154)</td>
<td>Ce, Li, Bo</td>
</tr>
<tr>
<td>1067</td>
<td>N4302 E4490</td>
<td>surface</td>
<td>105-130</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1225</td>
<td>N4302 E4490</td>
<td>I</td>
<td>1 (130-139)</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1230</td>
<td>N4302 E4490</td>
<td>II</td>
<td>2 (139-155)</td>
<td>Ce, Li, Bo</td>
</tr>
<tr>
<td>1249</td>
<td>N4302 E4490</td>
<td>IV</td>
<td>3 (143-155)</td>
<td>Ce, Li</td>
</tr>
</tbody>
</table>
Table A-5. Non-residential features: excavation units of non-residential architecture (N4302 E4466) and mound structure (N4326 E4358). Ce=ceramics, Li=lithics, Bo=bones.

<table>
<thead>
<tr>
<th>Bag#</th>
<th>Locus</th>
<th>Capa</th>
<th>Level</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1245</td>
<td>N4302 E4466</td>
<td>IV, IX, XI, XV</td>
<td>11 (127-136)</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1290</td>
<td>N4302 E4466</td>
<td>XI</td>
<td>7 (121-130)</td>
<td>Ce</td>
</tr>
<tr>
<td>1291</td>
<td>N4302 E4466</td>
<td>XIII</td>
<td>12 (116-136)</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1292</td>
<td>N4302 E4466</td>
<td>X</td>
<td>12 (118-130)</td>
<td>Ce</td>
</tr>
<tr>
<td>1309</td>
<td>N4302 E4466</td>
<td>XIII</td>
<td>13 (136-190)</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1312</td>
<td>N4302 E4466</td>
<td>XIII</td>
<td>14 (190-230)</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1320</td>
<td>N4302 E4466</td>
<td>XIII</td>
<td>16 (260-300)</td>
<td>Ce</td>
</tr>
<tr>
<td>1322</td>
<td>N4302 E4466</td>
<td>XI</td>
<td>13 (136-160)</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>1325</td>
<td>N4302 E4466</td>
<td>XIII</td>
<td>17 (300-320)</td>
<td>Ce</td>
</tr>
<tr>
<td>206</td>
<td>N4326 E4358</td>
<td>I</td>
<td>13-24</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>215</td>
<td>N4326 E4358</td>
<td>II</td>
<td>28-50</td>
<td>Ce, Li</td>
</tr>
<tr>
<td>218</td>
<td>N4326 E4358</td>
<td>II</td>
<td>42-63</td>
<td>Ce, Li, Bo</td>
</tr>
<tr>
<td>228</td>
<td>N4326 E4358</td>
<td>II</td>
<td>73-91</td>
<td>Ce, Li, Bo</td>
</tr>
</tbody>
</table>
## APPENDIX B
### CERAMIC ANALYSIS DATA

**B-1. Ceramic analysis details from the House 4 zone: N4300 E4486**

<table>
<thead>
<tr>
<th>Locus</th>
<th>N4300</th>
<th>E4486</th>
<th>total (%)</th>
<th>&gt;30cm orifice</th>
</tr>
</thead>
<tbody>
<tr>
<td>bag#s</td>
<td>1166</td>
<td>1180</td>
<td>1181</td>
<td>1187</td>
</tr>
<tr>
<td>olla/jar</td>
<td>0</td>
<td>12</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>tecomate</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>hemispherical bowls</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>cylindrical bowls</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>conical bowls</td>
<td>3</td>
<td>8</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>incense burners</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>plates</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>unidentified</td>
<td>8</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>others (handle etc)</td>
<td>12</td>
<td>31</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>MNV (except others)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Base characteristics**

- 6 conical bowl bases, 1 cylindrical bowl base, 1 plate base with wall, and 1 jar shoulder
- No bases have sooting and abrasions. A jar shoulder has abrasions inside.

**Color characteristics**

- Mostly tanwares, but relatively wide color variations.
- Gray and white cylinders and conical bowls. The black incense burner has holes on walls.

**Size variation**

- Miniature jar to 42cm jars, small tiny conical bowls to 40cm ones. One cylinder is 44cm.

**Rim forms**

- One unique rim form but it was not clearly identified.
- Relatively many flat rims (conical and cylindrical bowls).

**Surface treatment**

- Varied, but mainly the same. Careful treatment for conical and cylindrical bowls.
- The black incense burner has a smooth outside.

**Wealth indicators**

- Some huge vessels here suggest feasting, but no distinctive luxury wares.
B-2. Ceramic analysis details from the House 4 zone: N4300 E4488

<table>
<thead>
<tr>
<th>Locus</th>
<th>N4300</th>
<th>E4488</th>
<th>bag#s</th>
<th>total (%)</th>
<th>&gt;30cm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1066</td>
<td></td>
<td></td>
</tr>
<tr>
<td>olla/jar</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tecomate</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hemispherical</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bowls</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cylindrical</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bowls</td>
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<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>conical bowls</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>charcoal</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>braziers</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>plates</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>unidentified</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>others (handle</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>etc)</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV (except</td>
<td>7</td>
<td>11</td>
<td>3</td>
<td>31(100%)</td>
<td>3</td>
</tr>
<tr>
<td>others)</td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31(100%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

base characteristics: 5 bases without sooting. 4 conical bowls and 1 cylinder. 2 conical bowls have shallow walls.

color characteristics: All tanwares except for 1 white and 1 gray conical bowls.

size variation: Difficult to discuss size variation because of smaller rims. Some big jars with thick walls.

rim forms: Some jars have thick rims and walls, but no distinctive ones.

surface treatment: Tecomate is smoothed both sides with a reddish paste on the rim, and fibers attached inside. Both white and gray conical bowls are smoothed well both sides. Shallow walls.

wealth indicators: White and gray shallow conical bowls are relatively unique, but no luxurious vessels.
B-3. Ceramic analysis details from the House 4 zone: N4302 E4486

<table>
<thead>
<tr>
<th>Locus</th>
<th>N4302 E4486</th>
<th>total (%)</th>
<th>&gt;30cm orifice</th>
</tr>
</thead>
<tbody>
<tr>
<td>bag#s</td>
<td>1065 1138 1145 1151 1172</td>
<td></td>
<td></td>
</tr>
<tr>
<td>olla/jar</td>
<td>0 4 2 1 0</td>
<td>7 (10%)</td>
<td>1 14%</td>
</tr>
<tr>
<td>tecomate</td>
<td>0 0 0 0 0</td>
<td>0 (0%)</td>
<td>0 0</td>
</tr>
<tr>
<td>hemispherical</td>
<td>1 4 0 0 1</td>
<td>6 (8%)</td>
<td>4 67%</td>
</tr>
<tr>
<td>cylindrical</td>
<td>2 8 1 1 0</td>
<td>12 (17%)</td>
<td>1 8%</td>
</tr>
<tr>
<td>conical bowls</td>
<td>0 17 5 1 3</td>
<td>26 (37%)</td>
<td>7 27%</td>
</tr>
<tr>
<td>charcoal</td>
<td>0 0 0 0 0</td>
<td>0 (0%)</td>
<td>0 0</td>
</tr>
<tr>
<td>braziers</td>
<td>1 2 0 0 0</td>
<td>3 (4%)</td>
<td>0 0</td>
</tr>
<tr>
<td>plates</td>
<td>1 15 1 0 0</td>
<td>17 (24%)</td>
<td>0 0</td>
</tr>
<tr>
<td>unidentified</td>
<td>0 0 1 0 0</td>
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</tr>
<tr>
<td>others (handle etc)</td>
<td>0 0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV</td>
<td>5 50 9 3 4</td>
<td>71(100%)</td>
<td>13</td>
</tr>
</tbody>
</table>

base' characteristics: 11 conical bowl bases, 3 cylinder bases, and 2 plates with walls. No bases have sooting.

color characteristics: Mostly tanwares, but some gray cylinders and conical bowls.

size variation: From 4cm tray and 8 cm cylinder to 40-44cm cylinders and conical bowls. Great variation.

rim forms: There is no distinctive rim form in this group, but one tray and one plate have short walls with rounded rims.

surface treatment: Most conical bowls are smoother or well-burnished, but some of them have rough outside. Cylinders always have good surface treatments.

wealth indicators: There is no clear wealth indicator, but large vessels are suitable for feasting activities. It may indicate certain level of wealth, but there is no luxury ware in this group.
### B-4. Ceramic analysis details from the House 4 zone: N4302 E4488

<table>
<thead>
<tr>
<th>Locus</th>
<th>N4302 E4488</th>
<th>total (%)</th>
<th>&gt;30cm orifice</th>
</tr>
</thead>
<tbody>
<tr>
<td>bag#s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>olla/jar</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>tecomate</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>hemispherical bowls</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>cylindrical bowls</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>conical bowls</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>charcoal braziers</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>plates</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>unidentified</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>others (handle etc)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MNV (except others)</td>
<td>13</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

| base' characteristics | 6 bases and 1 unique one without sooting. |
| color characteristics | Most vessels are tanwares, but there are some white and gray conical bowls. |
| size variation | One possible cylinder has a earth-monster type inscription outside. Unique size variation. Some conical bowls are small and one jar has just 14cm orifice. Relatively smaller conical bowls. |
| rim forms | There is no distinctive rim form in this group. |
| surface treatment | All conical bowls are smoother or well-burnished. A white cylinder (highly possible but without a rim part) has very smoothed sides. |
| wealth indicators | The cylinder (I put it unidentified) and other white and gray conical bowls are well made, but only the cylinder is a luxury vessel. |
## B-5. Ceramic analysis details from the House 4 zone: N4302 E4490

<table>
<thead>
<tr>
<th>Locus</th>
<th>N4302 E4490</th>
<th>total (%)</th>
<th>&gt;30cm orifice</th>
</tr>
</thead>
<tbody>
<tr>
<td>bag#s</td>
<td>1067 1225 1230 1249</td>
<td></td>
<td></td>
</tr>
<tr>
<td>olla/jar</td>
<td>3 1 0 1</td>
<td>5 (15%)</td>
<td>0</td>
</tr>
<tr>
<td>tecomate</td>
<td>0 0 0 1</td>
<td>1 (3%)</td>
<td>0</td>
</tr>
<tr>
<td>hemispherical bowls</td>
<td>0 0 0 0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>cylindrical bowls</td>
<td>0 1 0 1</td>
<td>2 (6%)</td>
<td>0</td>
</tr>
<tr>
<td>conical bowls</td>
<td>6 3 2 3</td>
<td>14 (43%)</td>
<td>3 21%</td>
</tr>
<tr>
<td>charcoal braziers</td>
<td>0 0 0 1</td>
<td>1 (3%)</td>
<td>0</td>
</tr>
<tr>
<td>plates</td>
<td>0 0 0 0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>unidentified</td>
<td>6 1 2 1</td>
<td>10 (30%)</td>
<td>0</td>
</tr>
<tr>
<td>others (handle etc)</td>
<td>0 0 0 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV (except others)</td>
<td>15 6 4 8</td>
<td>33 (100%)</td>
<td>3</td>
</tr>
</tbody>
</table>

### base' characteristics
3 conical bowl bases (2 bases with walls) without sooting, and one piece of charcoal brazier.

### color characteristics
All tanwares except for 1 white large conical bowl.

### size variation
10cm and 14 cm miniature jars, great size variation among conical bowls (from 16cm to 40cm).

### rim forms
There is no distinctive rim form in this group.

### surface treatment
Miniature jars have rough inside. All conical bowls are smoothed or well-burnished.

### wealth indicators
One large white conical bowl has unique inscriptions on outside rim, and this is the only luxury vessel. The presence of a charcoal brazier suggests some ritual practices.
B-6. Ceramic analysis details from the House 4 zone: N4304 E4484

<table>
<thead>
<tr>
<th>Locus</th>
<th>N4304</th>
<th>E4484</th>
<th>total (%)</th>
<th>&gt;30cm orifice</th>
</tr>
</thead>
<tbody>
<tr>
<td>bag#s</td>
<td>1159</td>
<td>1182</td>
<td>1190</td>
<td>1226</td>
</tr>
<tr>
<td>olla/jar</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>tecomate</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>hemispherical bowls</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>cylindrical bowls</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>conical bowls</td>
<td>5</td>
<td>8</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>charcoal braziers</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>plates</td>
<td>0</td>
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<td>0</td>
<td>0</td>
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<td>unidentified</td>
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<td>5</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>others (handle etc)</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MNV (except others)</td>
<td>8</td>
<td>18</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

**base' characteristics**: 9 bases and 3 shoulders with no sooting. 4 jars, 2 cylindrical bowls, and 6 conical bowls

**color characteristics**: All tanwares (light, dark, reddish) except for 4 serving vessels. 2 white, 1 gray, and 1 brownish white.

**size variation**: Good size variations from 12 cm to 40cm. Large conical bowls are all tanwares except for 1 white bowl.

**rim forms**: There is no distinctive rim form in this group.

**surface treatment**: Serving vessels are mostly well smoothed, and large jars are roughly made with scratches.

**wealth indicators**: Some very smoothed white bowls are distinctive.
### Ceramic Analysis Details from the House 4 Zone: N4304 E4486

<table>
<thead>
<tr>
<th>Bag Numbers</th>
<th>1160</th>
<th>1183</th>
<th>1191</th>
<th>1208</th>
<th>1227</th>
<th>Total (%)</th>
<th>&gt;30cm Orifice</th>
</tr>
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<tbody>
<tr>
<td><strong>Olla/Jar</strong></td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4 (13%)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Tecomate</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Hemispherical Bowls</strong></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1 (3%)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Cylindrical Bowls</strong></td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5 (17%)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Conical Bowls</strong></td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10 (33%)</td>
<td>2</td>
</tr>
<tr>
<td><strong>Charcoal Braziers</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Plates</strong></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1 (3%)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Unidentified</strong></td>
<td>7</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9 (30%)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Others (Handle &amp; etc)</strong></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MNV (Except Others)</strong></td>
<td>18</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>30 (100%)</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Base Characteristics
- 5 bases without sooting. 2 conical, 1 plate (base and wall), and 1 cylinder.

#### Color Characteristics
- All tanwares, but some white cylinders. One cylinder was almost pink (brownish).

#### Size Variation
- Most pottery types are more than 20cm, and 3 conical bowls are more than 25cm.

#### Rim Forms
- Unique very thick jar rim. One pink cylinder has 4 lines inside the rim.

#### Surface Treatment
- Conical and cylindrical bowls are some burnished but most smoothed. One hemispherical bowl has rough sides with abrasions inside.

#### Wealth Indicators
- Some cylinders are clearly well made ones, but all conical bowls are normal tanwares. These bags came from a little outside of the house wall.
B-8. Ceramic analysis details from the House 4 zone: N4304 E4488

<table>
<thead>
<tr>
<th>Locus</th>
<th>N4304 E4488</th>
<th>total (%)</th>
<th>&gt;30cm orifice</th>
</tr>
</thead>
<tbody>
<tr>
<td>bag#s</td>
<td>1161 1184 1193 1207 1228</td>
<td></td>
<td></td>
</tr>
<tr>
<td>olla/jar</td>
<td>0 1 1 0 0</td>
<td>0 0 0</td>
<td>2 (22%) 0</td>
</tr>
<tr>
<td>tecomate</td>
<td>0 0 0 0 0</td>
<td>0 (0%) 0</td>
<td>0</td>
</tr>
<tr>
<td>hemispherical bowls</td>
<td>0 0 0 0 0</td>
<td>0 (0%) 0</td>
<td>0</td>
</tr>
<tr>
<td>cylindrical bowls</td>
<td>1 0 0 0 0</td>
<td>1 (11%) 0</td>
<td>0</td>
</tr>
<tr>
<td>conical bowls</td>
<td>2 0 1 1 0</td>
<td>4 (45%) 1</td>
<td>25%</td>
</tr>
<tr>
<td>charcoal braziers</td>
<td>0 0 0 0 0</td>
<td>0 (0%) 0</td>
<td>0</td>
</tr>
<tr>
<td>plates</td>
<td>0 0 0 0 0</td>
<td>0 (0%) 0</td>
<td>0</td>
</tr>
<tr>
<td>unidentified</td>
<td>1 1 0 0 0</td>
<td>2 (22%) 0</td>
<td>0</td>
</tr>
<tr>
<td>others (handle etc)</td>
<td>2 0 0 0 0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>MNV (except others)</td>
<td>4 2 2 1 0</td>
<td>9(100%) 1</td>
<td>1</td>
</tr>
</tbody>
</table>

- base' characteristics: Two conical bowl bases without sooting.
- color characteristics: All tanwares, but there is a white handle or a part of figurine.
- size variation: Smallest conical bowl (12cm) to a large conical bowl (34cm). Many samples are too small for discussing the size variations.
- rim forms: There is no distinctive rim form in this group.
- surface treatment: Two conical bowls have rough outside. One of the jars (28cm) has clear scratches and abrasions.
- wealth indicators: There is no wealth indicator.
### B-9. Ceramic analysis details from the House 4 zone: N4306 E4486 & 4488 (outside the midden feature)

<table>
<thead>
<tr>
<th>Locus</th>
<th>N4306</th>
<th>E4486</th>
<th>E4488</th>
<th>total (%)</th>
<th>&gt;30cm orifice</th>
</tr>
</thead>
<tbody>
<tr>
<td>bag#s</td>
<td>1332</td>
<td>1333</td>
<td>1358</td>
<td>1361</td>
<td></td>
</tr>
<tr>
<td>olla/jar</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1 (9%)</td>
<td>0</td>
</tr>
<tr>
<td>tecomate</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>hemispherical bowls</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>cylindrical bowls</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1 (9%)</td>
<td>0</td>
</tr>
<tr>
<td>conical bowls</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>5 (46%)</td>
<td>0</td>
</tr>
<tr>
<td>charcoal braziers</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>plates</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>unidentified</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4 (36%)</td>
<td>0</td>
</tr>
<tr>
<td>others (handle etc)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MNV (except others)</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>11 (100%)</td>
<td>0</td>
</tr>
</tbody>
</table>

**Base characteristics**
- Only 1 base without sooting, smoothed inside.

**color characteristics**
- All tanwares.

**size variation**
- Most of them are tiny sherds and thus it is inappropriate to discuss size variations.

**rim forms**
- There is no distinctive rim form in this group.

**surface treatment**
- All tiny, so it is hard to describe surface treatments.

**wealth indicators**
- There is no wealth indicator. These bags came from the uppermost parts of the midden locus and these bags do not represent midden outside of the household.
B-10. Ceramic analysis details from the House 4 zone: N4306 E4490 (outside feature)

<table>
<thead>
<tr>
<th>Locus</th>
<th>N4306 E4490</th>
<th>total (%)</th>
<th>&gt;30cm orifice</th>
</tr>
</thead>
<tbody>
<tr>
<td>bag#s</td>
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<td></td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Type</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>olla/jar</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>tecomate</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>hemispherical bowls</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>cylindrical bowls</td>
<td>2</td>
<td>2(100%)</td>
<td>0</td>
</tr>
<tr>
<td>conical bowls</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>charcoal braziers</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>plates</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>unidentified</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
</tr>
<tr>
<td>others (handle etc)</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNV (except others)</td>
<td>2</td>
<td>2(100%)</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>base' characteristics</td>
</tr>
<tr>
<td>No base or shoulder. All sherd samples are tiny.</td>
</tr>
<tr>
<td>color characteristics</td>
</tr>
<tr>
<td>One conical bowl is brownish white, but it should not be classified as white.</td>
</tr>
<tr>
<td>size variation</td>
</tr>
<tr>
<td>Very few samples to discuss.</td>
</tr>
<tr>
<td>rim forms</td>
</tr>
<tr>
<td>There is no distinctive rim form in this group.</td>
</tr>
<tr>
<td>surface treatment</td>
</tr>
<tr>
<td>Both sherds have smoothed sides, but samples are too small for discussing overall treatments.</td>
</tr>
<tr>
<td>wealth indicators</td>
</tr>
<tr>
<td>Both serving vessels are well made, but not luxurious. This bag came from the uppermost part of the midden (storage pit). This bag does not belong to the feature of this locus.</td>
</tr>
</tbody>
</table>
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<th>Year</th>
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</table>
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