

WORLDVIEW, IDEOLOGY, AND CERAMIC ICONOGRAPHY: A STUDY OF LATE  
TERMINAL FORMATIVE GRAYWARES FROM THE LOWER RÍO VERDE VALLEY OF  
OAXACA, MEXICO

by

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## **ABSTRACT**

This study investigates worldview and ideology during the late Terminal Formative period (A.D. 100 – 250) in the lower Río Verde Valley of Oaxaca, Mexico, through an analysis of iconography found on grayware ceramic serving vessels. The sample includes 457 vessels and sherds from 17 lower Verde sites obtained through excavations and surface collections between 1988 and 2009. Drawing upon theories of semiotics and style, this thesis identifies a suite of icons suggesting that ceramics were a medium for expressing regionally shared beliefs. Chatino potters carved common Formative period Mesoamerican themes into the walls of graywares, such as depictions of maize and climatic phenomena, which may have been part of a religious worldview rooted in the belief that humans and non-human deities shared a reciprocal relationship. People at Río Viejo, including elites, may have attempted to exploit this relationship, thought of as a “sacred covenant” or agreement between humans and deities, to create a more centralized political entity during the late Terminal Formative Chacahua phase. By using iconographic graywares in socially and politically significant ritual activities such as feasting and caching events, elites imbued graywares with a powerful essence that would have facilitated the spread of the coded messages they carried. Based on statistical analyses of the diversity of iconographic assemblages from various sites, I argue that the assemblage of icons at Río Viejo, a late Terminal Formative political center in the lower Verde, indicates ideas likely originated at or flowed through this site.

*For Steve*

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## CHAPTER 1: INTRODUCTION

One of the fundamental goals of archaeological research is to understand how ancient complex societies operated. The concept of complexity, when associated with archaic cities and states, implies a system of hierarchically differentiated and intricately interrelated parts in which people of varying social positions interact economically, politically, and socially (Adams 2001). One of the ways people interacted was through the communication of ideas. This thesis investigates worldview and ideology during the late Terminal Formative period (see Table 1) in the lower Río Verde Valley (lower Verde) of Pacific coastal Oaxaca, Mexico (Figure 1), through an analysis of iconography found on grayware serving vessels. The temporal setting I explore is the late Terminal Formative Chacahua phase (AD 100 – 250), a period of hypothesized political centralization in which elites at Río Viejo, a regional political center, were struggling to expand their influence over people living at outlying settlements within their political sphere (Barber and Joyce 2007; Joyce 2010; Workinger 2002).

### 1.1 POLITICAL ORGANIZATION AND CHACAHUA PHASE ELITES

Research conducted over the past twenty-five years in the lower Verde (Figure 2) indicates that elites from the regional political center of Río Viejo may have attempted to create a centralized regional polity during the late Terminal Formative period (see Joyce 2010:160-196 for a summary). Chatinos—an ethnic group closely associated with Zapotec-speaking peoples under the Otomanguan language group—occupied the lower Verde from the Formative period to the present day (Joyce 2010:35). In this thesis, I argue that by disseminating a specific ideology based on a worldview shared by Chatinos throughout the lower Verde, as well as by facilitating ritual activities that promoted the spread of ideas, people at Río Viejo reinforced their

elevated status while strengthening ties between them and people living at outlying sites throughout the lower Verde. During a period in which Chatinos lacked a definitive written language (as far as we currently know), one of the mechanisms used to facilitate this spread of ideas may have been through the distribution of elaborate grayware ceramics with incised iconographic designs. Many of these icons depicted recognizable, communicable ideas vital to the maintenance of particular religious worldviews of the late Terminal Formative Period.

Recent studies have suggested that during the Chacahua phase, material expressions of elite status were restrained (Barber and Joyce 2007). Ritual activities, including caching and mortuary practices, at the local level retained elements of local community traditions and appear to have reinforced notions of local identity. However, people living in the lower Verde hinterland may have provided tribute to Río Viejo in the form of labor necessary to complete large-scale construction projects at the valley's political center such as Mound 1 (Joyce 2006). The peak period of monumental construction at Río Viejo appears to have taken place during the Chacahua phase. The question that we must then ask is what type of political situation existed during the Chacahua phase that accounted for increasing regional political centralization concomitant with persistent ties to local community identity?

One of the mechanisms facilitating the spread of an ideology predicated on the regional authority of the Río Viejo polity may have been the distribution of finely made grayware serving vessels, most likely by people of high status, which projected visible, recognizable iconographic motifs. The worldview referenced by the majority of discernable Chacahua phase icons is one that has a deep-seated history in Mesoamerica, dating as far back as the Middle Formative period in the Olmec area and relating to the reciprocal relationship between humans and non-human

entities (Joyce 2000; Monaghan 1995; Taube 1996). Within this worldview, in return for providing the rain that facilitates life through agriculture, non-human entities require humans to sacrifice their bodies to the ground in death, thus providing sustenance to the celestial beings (Monaghan 1995). Elites in the Valley of Oaxaca may have exploited this notion of a “sacred covenant,” by enacting potent forms of sacrifice (including human sacrifice) to petition the gods. People at the site of Río Viejo in the lower Verde may have been spreading a similar ideology, specifically linked to the ability of elites to petition the gods, through icons carved into the walls of fancy grayware serving vessels.

Table 1: Lower Río Verde Valley Ceramic Chronology

<b>Time Period</b>	<b>Ceramic Phase</b>	<b>Dates</b>
Late Postclassic	Yucudzaa	A.D. 1100 - 1500
Early Postclassic	Yugüe	A.D. 800 - 1100
Late Classic	Yuta Tiyoo	A.D. 500 - 800
Early Classic	Coyuche	A.D. 250 - 500
Late Terminal Formative	Chacahua	A.D. 100 - 250
Early Terminal Formative	Miniyua	150 B.C. - A.D. 100
Late Formative	Minizundo	400 - 150 B.C.
Middle Formative	Charco	700 - 400 B.C.



Figure 1: Mexico and Central America with Lower Río Verde Valley labeled (above); Oaxaca and Lower Río Verde Valley (below) (both images taken from Barber 2005:fig. 1.1 and 1.2).



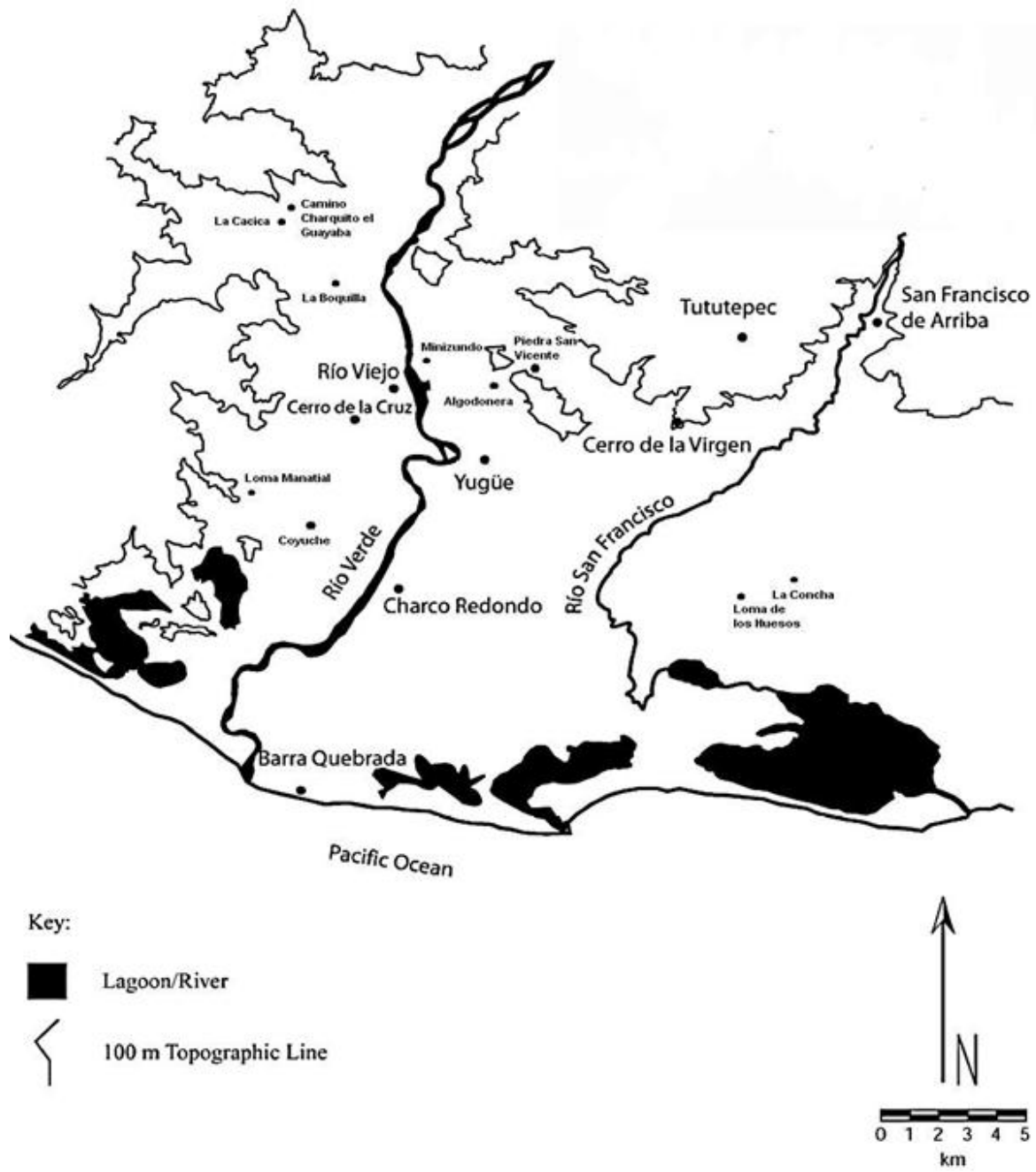


Figure 2: Map of the lower Río Verde Valley with sites mentioned in text (after Barber 2005:fig. 4.1)

Increasing political centralization within the lower Verde during the Terminal Formative (150 BC – AD 250) is argued to have been influenced by factors that differ from those observed in other extensively researched areas in ancient Oaxaca—the Mixteca Alta, and the Valley of Oaxaca (Barber 2005; Barber and Joyce 2007; Joyce 2010). Political authority in the Mixteca Alta has been viewed as nucleating at a series of political centers throughout the Mixtec highlands in response to internal military conflict (Balkansky et al. 2004) and threat of imperial domination by powerful external polities (e.g., Balkansky 1999; Kowalewski et al. 2009). In the Valley of Oaxaca, the Terminal Formative period witnessed the mighty polity, Monte Albán, dominate sites throughout the Valley of Oaxaca (as well as adjacent areas such as the Cuicatlan Cañada to the north) through military conquest (Blanton et al. 1999; Flannery and Marcus 1996; Spencer and Redmond 2001). As of yet, very little evidence has been found indicating Chatinos living in settlements within the lower Verde engaged in endemic warfare (i.e. the Valley of Oaxaca during the Late Formative or the southern Maya lowlands during the Classic period), so some other sociopolitical apparatus was in place.

## 1.2 THESIS ORGANIZATION

In this thesis, I explore how polities held together by loose sociopolitical associations operate. Evidence suggests a polity existed within the lower Verde during the late Terminal Formative, centered on a regional political center at Río Viejo (Barber and Joyce 2007). Because warfare and strict imperial control (e.g. the Valley of Oaxaca) do not seem to explain the political conditions in the lower Verde during the Chacahua phase, we must explore other avenues that may shed light on how Chatinos lived during this time. I turn to the material record to determine whether ideas, or more specifically, an ideology based on broader worldviews, and

their communication affected Chatino society on a regional scale. I address the following questions:

1. Is there a suite of icons in the grayware iconography that shows a shared set of beliefs?
2. Is there evidence of a regional ideology in the grayware iconography, perhaps promulgated by the regional political center of Río Viejo, that would have facilitated political centralization?

This thesis is broken up into five main chapters (Chapters 2 – 6). First, Chapter 2 discusses the archaeological perspectives that motivate a study of this kind, as well as the theoretical foundation upon which my interpretations stand. I elaborate on the role of ideology in archaeological studies and explain how we can view higher-level concepts like ideology and worldview by analyzing material culture, particularly ceramic iconography. In Chapter 3, I describe the methods used to distinguish graywares from other ceramics of different pastes or chronological periods. I give specific details as to the methods I used to record data from the ceramics sampled and provide definitions of terminology and ceramic attributes I refer to throughout this thesis.

Chapter 4 presents the formal ceramic analysis of Chacahua phase iconographic graywares. I pay special attention to the way vessel form affects the positioning of icons on graywares and provide statistical summaries of the grayware vessel types Chatinos preferred to imbue with iconography. In Chapter 5, I present my interpretations of what particular icons may have signified to Chatinos during the Chacahua phase, relying on iconography from highland Oaxaca and the coast of Guatemala to reinforce these distinctions. Finally, Chapter 6 details the

conclusions I draw from the analysis presented in Chapters 4 and 5, referring back to the theoretical background and methodology discussed in Chapters 2 and 3.

## **CHAPTER 2: RESEARCH QUESTIONS AND THEORETICAL BACKGROUND**

### **2.1 INTRODUCTION**

The primary goal of this thesis is to show how, through the analysis of iconographic decorations incised into grayware serving vessels, Chacahua phase Chatinos in the lower Verde communicated ideas within a shared ideological construct. In this chapter, I explain the conceptual base for this study, as well as the approach toward finding meaning in iconographic decorations. First, I bring together several perspectives and definitions regarding concepts such as ideology and worldview. Next, I describe the ways iconography denotes particular meanings using strategies motivated by semiotic theory, emphasizing the notion that ideas can materialize as messages on media such as ceramic vessels. Finally, I operationalize the way we can connect higher-level theory regarding the spread of an ideology to archaeological studies, citing specific applications to the Chacahua phase grayware sample.

### **2.2 ARCHAEOLOGICAL PERSPECTIVES ON IDEOLOGY**

The origin of anthropological thought regarding ideology begins with the writings of Karl Marx. For traditional Marxists, relationships between groups or classes are bound up by the manifestations of class conflicts; ideology is seen as being produced by the material conditions of social existence, rather than being causal on its own (Preucel 2006:116). For example, Marx and Engels (1970 [1846]) viewed ideology as a mechanism—a “false consciousness”—that obscured the contradictions produced by the intrinsic structure of society, particularly relationships related to power and inequality. In a critique of traditional Marxism, several archaeologists, influenced by the writings of the French philosopher Louis Althusser, began to

develop a new approach toward synthesizing archaeological theory within a Marxist framework. Developers of structural Marxism, named for its melding of traditional Marxist tenets with French structuralism, consider ideology not to be influenced primarily by the materialist or ecological base of society, but rather by the social relations within which people were embedded. For Althusser (1984), while ideology as a general term had no history or starting point, individual ideologies had histories. Beliefs and ideas resulted from specific social practices. This notion has implications for archaeological methodology because it allows archaeologists to view ritual practices of ancient cultures within an ideological framework. For instance, Godelier (1977) argues that the mechanisms directing the distribution of resources in prehistoric societies were often directly influenced by kinship and status relationships reinforced by religious and political systems, both of which can be constrained by symbolic structures (Turner 1967).

The concept of ideology emerged at the head of archaeological debate during the 1970s as many scholars built upon the functionalist base cast by the arrival of “the New Archaeology.” Scholars working within this framework viewed social and cultural change as arising from human behavior contingent upon economic explanations of a society’s “materialist base” (cf. Harris 1964; White 1959). Lewis Binford, a progenitor of the New Archaeology, viewed ideological systems as the symbolic setting through which individuals are “enculturated” into a society, placing it alongside two additional societal subsystems—the technological and the social (Binford 1962:219-220). The intersection of these subsystems provided the setting through which culture as an *adaptation* could be evaluated. In theory, these subsystems were equally vital, however, in practice, processual studies tended to emphasize the technological and social subsystems over the ideological (e.g., Hill 1970).

An ecological approach to explaining the archaeological record has proven to be incomplete (Flannery 1972:400). Seeking ways to combine ideology with the study of ecological, economic, and political factors, some scholars have assigned ideology to a more important role in culture change (Demarest and Conrad 1992). For instance, Demarest (1992:4) aligns his definition of ideology with “religious belief” but constrains its role in emphasizing only those aspects of ideological systems that have a “political impact.” Religious beliefs, cosmology, and institutions of state control were intimately connected in ancient Mesoamerica (Joyce 2000; Schele and Freidel 1990), so it is not a surprise that ideology has been used to explain the legitimization of power in precolumbian societies.

Following later developments in social theory, particularly Bourdieu’s (1977) theories of practice and Giddens’ (1979) theories of power and agency, ideology began to be viewed through a more critical lens. A central tenet of Marxist thought (both classical and structural) holds that the dominant class explicitly creates an ideology, and subordinate classes are essentially powerless to resist its grasp. In a critique of this theoretical base, some scholars argued for the inclusion of a theory of practice in archaeological studies (Hodder 1986; Hodder and Hutson 2003; Miller and Tilley 1984; Shanks and Tilley 1987). While structuralist frameworks are advantageous for describing patterning in social systems, they neglect to account for how to make use of structures within environments that are constantly changing (Brumfiel 1996). Most, if not all, social environments are dynamic; they can change at a moment’s notice. An important aspect of that dynamism is the idea that social positions are not static, but rather can be negotiated from different levels within society. This “degree of conviction” held by subordinate groups should not be overestimated as acceptance of a worldview or ideology is not

always guaranteed (Hodder and Hutson 2003:96). There is always a chance that a subordinate group will reject or modify a proposed set of ideas, although the act or process of this negotiation is difficult to view in the archaeological record.

Debate among Oaxacan archaeologists concerning the role and nature of ideology has paralleled larger debates in the discipline. Arguing for an “action theory” approach to explaining social evolution, Marcus and Flannery (1996:31) propose a heightened role of individual actors in producing social change, yet fall back on ecological-functionalist explanations of social adaptations. Joyce and Winter (1996:46) recognize both ideological and material conditions as being important and inseparable in the development of urban societies. They argue that elites likely constructed dominant ideologies to generate tribute for the ritual services they rendered, while non-elites may have conversely developed alternative ideologies reflecting strategies of resistance. For example, Hutson (2002) has detected strategies of dominant social groups in the monumental construction of residential spaces as well as “coeval” strategies of resistance in the modification of domestic space at Monte Albán. Blanton and his colleagues (1996:13) suggest that Mesoamericanists should work toward developing a methodology capable of integrating political and economic processes into “one grand theory of sociocultural transformation.”

For this study, I define ideology by bringing together Marxist and poststructural ideas about what ideology *is* and how it *operates*. First, what *is* ideology? Ideology is a symbolic set of meanings through which people communicate ideas. More specifically, Hodder and Hutson (2003:88) define ideology as:

“an aspect of symbol-systems. It refers to that component of symbol-systems most closely involved in the negotiation of power from varying points of interest within society. Cultural meanings and symbols are used within strategies of power and in the negotiation of control, but they also partly form those



strategies...ideology is the framework within which, from a particular standpoint, resources are given value, inequalities are defined and power is legitimated.”

Echoing Althusser’s (1984) critique of classical Marxism, ideology and relations of social power are neither epiphenomenal nor solely determined by the materialist base. Rather, they are generative and can dominate society (Preucel 2006). Following Parker Pearson (1984), ideology does not exist externally from reality; it is an active part of human practice. It is inexorably linked to notions of social identity, particularly those facets of identity that are influenced by notions of power and inequality. For example, Joyce and Winter (1996:35) argue that inequality involves the ability of people to create a positive net flow of resources in a way that makes the material benefits gained (or lost, if observing from the side of the dominated) seem beneficial and irreversible.

Next, how do ideologies *operate*? This question encapsulates a debate that persists in Oaxacan archaeology (Blanton, et al. 1996; Hutson 2002; Joyce and Winter 1996). Although aspects of ideologies are negotiated between individuals at varying social positions, I argue that ideologies, more often than not, benefit a dominant group. Ideological power depends on the concealment of elite interests in a way that demonstrates them as being “universal” (Joyce and Winter 1996:35; Mann 1986). For instance, Joyce (2000, 2004) has argued that elite power and the growth of urban society during the Late Formative period in the Valley of Oaxaca stemmed from an ideological transformation in which elites began to gain more followers because of the powerful new rituals they carried out. These new rituals, the most powerful of which included human and autosacrifice, were intimately connected to the religious worldview expressed by ancient Mesoamerican peoples. This worldview is one in which elites served as mediators

between the natural and supernatural world, the perpetuation of which necessitated the performance of certain rituals like bloodletting and human sacrifice (Monaghan 1994; Schele and Miller 1986). Through the performance of these rituals, social power was cemented in the hands of elites through the successful spread of a dominant ideology.

### 2.3 IDEOLOGY AND MATERIAL CULTURE

Social power is demonstrated through action. A gift given in the spirit of reciprocity, a military raid on an outlying settlement, a painted mural depicting a captured lord; all are actions that produce meaning, implicitly or explicitly, relating to relations of power. Art is a medium that preserves snapshots not only of action, but also of ideas and expression. The engagement between humans and the material world they create, termed “material engagement theory,” informs our understanding of how cultural materials influence thought. Renfrew (2004:23) argues that because of the knowledge-based nature of our actions, humans build upon “experience-based constructs” in crafting ideas. For example, the practical knowledge of things like length and weight and “sameness” give rise to higher-order concepts like measurement and taxonomy (Renfrew 2004:23). By linking symbols with action (i.e. symbols of maize linked with agricultural fertility rituals performed by elites), archaeologists may begin to discuss higher-order concepts like religious worldviews. Choice in the proliferation of certain icons may also reflect certain political sentiments. For example, in her study of commoner feasting at the Late Postclassic site of Xaltocan, Brumfiel (2004) argues that iconographic themes depicted on ceramics changed after the beginning of Aztec rule. The militaristic themes that dominated art at the site before the Aztec conquest were subdued thereafter, possibly indicating the people at Xaltocan were attempting to distance themselves from the ideology promulgated by the Aztecs.

While art may reinforce community bonds (Toshihara 2004), it also may express political and social tensions between societal groups (Firth 1966; Hodder 1982). Past studies concerning the interpretation of social affiliations in archaeological contexts have relied on analyses of “stylistic variation” to explain the way material culture facilitates the exchange of information (Conkey 1978; Wobst 1977). Wobst (1977) has argued that style, defined as form which is left over after function is explained, retains certain traits that convey or signal bits of information to subjects who read and interpret them. For example, in his analysis of Yugoslavian folk dress, Wobst argues that individual versions of clothing went far beyond the necessary level of variation needed to adapt to the environment, thus signaling ethnic affiliation. According to Wiessner (1989), objects may convey either (or in some instances both) emblematic style—containing information about groups and boundaries—or assertive style—containing information about individual identity and expression. While these studies have illustrated that stylistic variation is far from epiphenomenal, inferring ethnic affiliation based on stylistic differences has proven to be problematic. However, materialized style may serve to communicate ideas and meaning. Hodder (1990) argues that style as a “way of doing” incorporates objective structure and content as a mechanism used to “fix” meanings. In terms of symbolic representations (see section 2.4 below), material signs or symbols (such as iconographic art) have the ability to fix meanings and create a sense of constancy, whereas non-material symbols such as spoken language are always open to alternative or manipulative interpretations (Preucel 2006).

The materialization of ideas on a medium which can be distributed across great distances is an important part of spreading an ideology, making it possible to extend ideological influence “beyond the local group...to a broader population” (DeMarrais, et al. 1996:16). Control over the

expression of ideology through art has been viewed as a source of social power (DeMarrais, et al. 1996; Earle 1997). Demarrais, et al. (1996) list four general means by which ideology is materialized—ceremonial events, symbolic objects, public monuments and landscapes, and writing systems—and explain the importance of ideological form:

Broadly, these means and forms differ in terms of the audiences to which they can be directed and the ways in which they can be produced and manipulated. The selection of a particular means and form can therefore profoundly affect the ideology's effectiveness as a source of social power.

For instance, ceremonies can integrate large groups, whereas symbolic objects are transportable and can be viewed as actively imbuing social status. Symbolic objects and icons are especially efficient for long-distance communication between elites, social groups or political allies.

Viewing symbolic objects from a regional scope may facilitate discussion about the cohesiveness of a polity as a whole.

## 2.4 SEMIOTIC APPROACHES TO VISUAL MEDIA

In ancient Oaxaca, the famous late Postclassic Mixtec codices may be the most recognizable medium through which people communicated ideas in a written form.

Unfortunately, no written texts exist dating to the Formative Period in the lower Verde. We must turn to other forms of media to gather information about Terminal Formative Chatino society and, in turn, relations of social power. Iconography, or artistic expression made up of “coded symboling” intended to convey meaning through the use of symbols (Cordy-Collins 1989:39), is a natural avenue to explore materialized ideology. The study of iconography concerns the subject matter and meaning of a piece of art rather than its form (Panofsky 1955). For instance, iconography found at Teotihuacan dating to the Classic Period is rife with “speech scroll

imagery” emanating from the mouths of elites or ancestors (Cowgill 1997). Speech scrolls symbolize the divine nature of elite speech and serve to provide legitimization of their link to the gods as well as their sacred authority (Cowgill 1997). Following Geertz’s (1966) study of symbols and rituals, symbols serve as models for instantiating the existing world and the social behaviors of those living in it. Therefore studying symbols, or *signs*, found in iconographic art is useful in approaching ideological meaning.

Semiotics, or the study of signs, is a body of theory that has been increasingly applied to solve archaeological problems (Hodder 1989; Preucel and Bauer 2001). The foundation of semiological theory was initially cast by the work of Ferdinand de Saussure (1983 [1916]), a French structuralist who focused on the way human language functioned as signs that represented concepts in the mind. Saussure’s *semiology*, as he coined it, described a two-part model of the sign—the *signifier* (that which represents a concept [i.e. a word]), and the *signified* (i.e. the concept a word denotes). According to Saussure, the relationship between the signifier and the signified is completely arbitrary. For example, Saussure would argue that there is no inherent element of an object such as a “house” that necessitates calling it by that word, as other languages use very different words to convey the same idea. In a critique of this approach, particularly as it applies to archaeological materials, Hodder (1989) has indicated that some forms of material culture, including visual images, can be affected and constrained by the physical world in a way that is not completely arbitrary. Under Saussurean semiotics, symbols may only retain meaning due to their differences from other symbols; they are completely separated from the physical world. A classic example illustrating this critique is presented by

Hodder (1989:101) as the image of a tree being used for the “ecology movement.” In essence, what is being argued is that while language is arbitrary, symbols or signs are often not arbitrary.

If Saussurean semiology cannot be used to approach issues of meaning in symbols (here, within iconography), then what aspects of semiotics can be used? I turn to the work of C.S. Peirce (1998), the American philosopher and “other father” of semiotics<sup>1</sup>, particularly in viewing how his definition of a sign relates to how a sign is constructed. Peirce viewed the sign as being triadic in nature, rather than dyadic as in Saussure’s model, consisting of the *sign*, the *object*, and the *interpretant* (Figure 3). The term *sign* refers to the inherent quality that is projected by the sign (the representation) and most closely complements Saussure’s *signifier*. The *object* is the entity or idea that constrains the nature of the *sign* (that which is represented by the sign) and can be matched with Saussure’s *signified*. The *interpretant* is without a complement in Saussure’s definition and refers to the way in which the observer categorizes the *sign-object* relationship. Inclusion of the *interpretant* to the definition of a sign allows for multiple inquiries of meaning to be investigated, instead of assuming that symbolic representation is simply arbitrary.

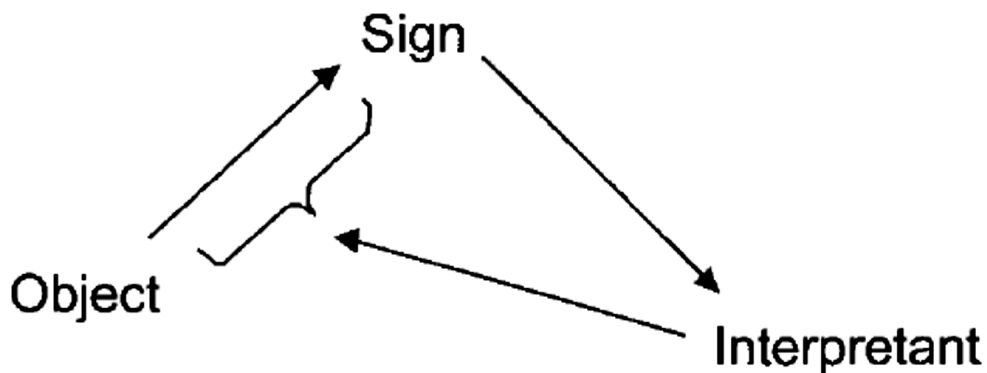


Figure 3: Peirce's triadic nature of the sign (redrawn after Parmentier 1994:10)

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<sup>1</sup> Peirce termed his field of study *semiotic*, not to be confused with Saussure’s *semiology*. Both scholars’ works were published posthumously by their students and colleagues.

The way in which a sign is interpreted can have a direct effect on the nature of the sign. Accounting for this, Peirce (1998:30-31) conceived of three different types of signs: *symbols*, *icons*, and *indices*. *Symbols* are signs whose relationships to their objects are purely arbitrary and established by convention. *Icons* are signs whose relationships to their objects are not arbitrary; rather, the sign and the object resemble one another in a physical manner. *Indices* are signs directly connected to their objects and intimately influenced by real life. Peirce's classic example of an *index* is a weathervane; it is directly affected by the object it is signifying (the wind) and conveys information based on that interaction (wind direction).

Preucel and Bauer (2001:91) present an excellent example of how a sign may be interpreted in various ways by considering the symbolic nature of polished jadeite axes commonly found in Eurasian steppe burials. Although a jadeite axe may not be utilitarian because of its material (rare, valuable jade) or context (elite burials), it is *iconic* in that its formal resemblance to other axes from the area is easily recognizable. The axe also may act as an *indexical sign* because of the context or material. Its context allows the archaeologist to relate the axe in a particular way to the person or other objects with which it was buried. The material acts indexically to represent trade or interaction with areas where jadeite can readily be found. Finally, the axe may *symbolically* represent power, although this representation is completely arbitrary.

Meanings fit together with a wide range of social and material trends, not merely the product of differences within a structural system. As such, *icons* provide a particularly useful starting point in the pursuit of symbolic meaning because we can tie them to specific *objects* referentially and then continue into more profound analyses. We must not forget that *icons* may

vary in levels of “iconicity,” ranging from very abstract to concrete (Pelc 1986), however this should not detract from their usefulness analytically. *Icons* are not always depicted alone; rather, they are often combined with elements of other *icons* or *symbols* to lead the observer down a path to developing a particular interpretation. For example, the “conquest slabs” from Building J at Monte Albán combine a number of iconic elements including decapitated heads, platforms, and temples to infer a particular idea—imperial conquest over neighboring polities. While each of these *icons* may produce a particular *interpretant* individually, their ordering and relationship to one another limit the number of interpretations ancient Oaxacans (as well as present-day archaeologists) would have had. It is important to this study to identify particular motifs on every artifact so that patterns of association between motifs may be elucidated on the sample Chacahua phase gray wares.

## 2.5 THEORETICAL APPLICATIONS TO CHACAHUA PHASE GRAYWARES

In this section, I relate principles of semiotics and ceramic style to archaeological materials, focusing on specific applications to the Chacahua phase grayware sample. First, I see semiotics as a useful theoretical base for studies of icons, informing us of the ability to make meaningful interpretations of the physical nature of signs. However, semiotic studies must be carried out in conjunction with analyses of other vital archaeological data. Chase and Chase (2008) argue this point by recognizing the need for an integrative approach in studies of the ancient Maya between examinations of Mayan epigraphy and archaeological deposits. Many scholars have focused on the decipherment of certain Mayan glyphs as well as their particular interpretations on knowledge of the political dynamics prior to the Spanish Conquest. Chase and Chase argue that analyses of varied archaeological materials, particularly within secure



stratigraphic contexts, must be considered alongside epigraphic analyses. In this thesis, I attempt to provide a balance between semiotic interpretations of symbols and icons, interpretations of vessel form and function, and interpretations of the archaeological and social contexts within which the artifacts reside. Each of these four areas reflexively inform our understanding of what particular icons may have signified to ancient Chatinos (Figure 4).

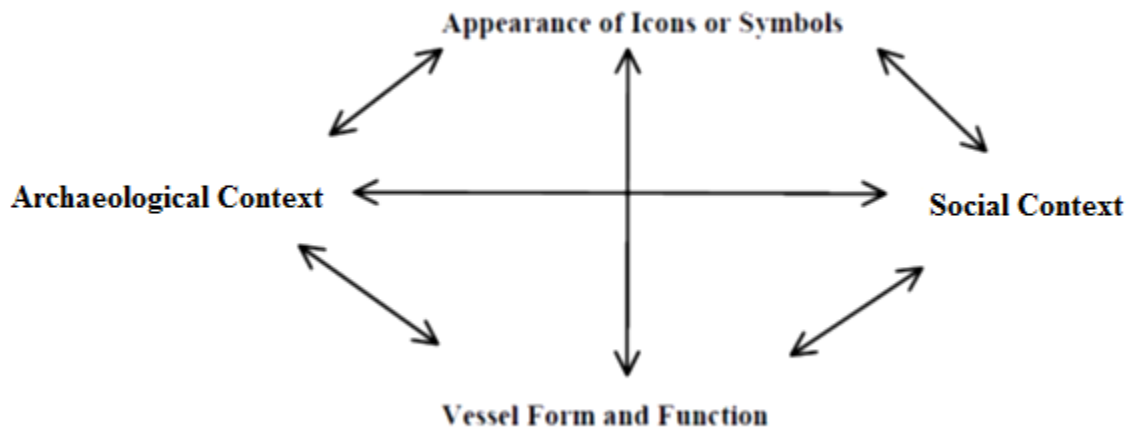


Figure 4: Inferential Map of Interpreting Iconographic Meaning (drawing by J. Brzezinski).

## 2.6 SUMMARY

The analysis and discussion presented in the following chapters aims to determine if a shared worldview existed among Chatinos during the Chacahua phase. Because religion, cosmology, and political systems were intimately connected in Formative period Mesoamerican societies, an ideology based on a religious worldview that was accepted by all segments of society would have been a particularly powerful tool for elites in the lower Verde. While ideologies are often, if not exclusively, created to benefit a dominant segment of society, they are negotiated by people interacting with these ideologies from different positions in society.

Ideological negotiation often took place during elite-sponsored ritual activities such as feasting and caching events, which would have given people of high status an audience (Brumfiel 2004). Although we will never be able to hear the conversations that took place during these events, we may be able to glean certain notions of the messages that were being transmitted back and forth between people by analyzing the iconography adorning the objects consumed during ritual activities. Distributions of iconographic motifs are viewed in this study from a regional scale, thus adding to the growing body of literature concerning the social and political dynamics of the late Terminal Formative period in the lower Verde.

## **CHAPTER 3: DATA COLLECTION, ARCHAEOLOGICAL CONTEXTS, AND ANALYSIS METHODOLOGY**

### **3.1 INTRODUCTION**

The research presented in this study rests on the theoretical foundation that pottery (particularly fancy serving vessels) was a useful communicative medium. To address the two main questions presented in Chapter 1, I narrowed the collection of artifacts solely to Chacahua phase graywares. Only sherds, partial vessels, and whole vessels with elaborate decorations make up the total sample in order to focus on interpretations of the most visually vibrant designs. For instance, I chose not to include sherds carved with a single line around the exterior of the rim, a common decorative motif for Chacahua phase graywares, but included vessels with one line around the rim accompanied by other plastic decorations. Pottery with simple stylistic design elements, to be sure, are important in terms of assigning chronological dates to archaeological contexts and examining standardization diachronically, and artifacts with these traits may prove to add to the conclusions presented in this study later. Because graywares with intricate designs are relatively rare compared to more utilitarian vessels, several different excavation contexts were sampled, each of which is described in detail in this chapter. In the following sections, I explain the terminology, methods of data collection utilized, sampled archaeological contexts, and analytical techniques employed throughout this thesis.

### **3.2 CERAMIC TERMINOLOGY**

Throughout this study, I primarily use terminology defined by Rice (1987) regarding characteristics of ceramic vessels. First, an *attribute* is a feature or characteristic of style, form,

or technology that forms the basis for analysis and categorization, both qualitative and quantitative in nature. Examples of attributes in this study include vessel form and plastic decoration location. When discussing categorical data, I refer to *attribute states*, or the value or score of a particular artifact with respect to a particular attribute or any of several alternative values. For example, the attribute states for the plastic decoration location attribute are “interior,” “exterior,” “rim,” and “base.”

### 3.2.1 *Ceramic Attributes*

The goal of the ceramic analysis in this study was to examine stylistic and iconographic variation in the attributes of Chacahua phase decorated graywares. Vital to investigating differences in style and iconography is the understanding that variability (and diversity) may be viewed from multiple perspectives. While the physical nature of an iconographic symbol or sign may be the most explicit locus demonstrating stylistic variability, it is not the only one. Differences in stylistic traits—variations in vessel form that do not affect the way a vessel *functions*—give insight into variation as well. The following are terms used to categorize and analyze ceramic data in the sample:

Vessel Form: The qualitative categorization of the general shape of a vessel. The evaluation of the vessel form incorporates several different attributes, including the general orientation of the vessel’s walls and connection between wall and base. Examples of vessel forms include “conical bowl,” “semispherical bowl,” “plate,” and “jar.”

Vessel Rim Diameter: The quantitative measure of the diameter of a vessel’s rim. After determining the correct orientation of a sherd, the rim diameter was determined by using a

standard rim diameter chart (cf. Rice 1987:233). Rim measurements were read on the exterior of the rim of each vessel, therefore record the maximum diameter of each vessel.

Wall Form: The qualitative categorization of the shape and orientation of the wall of a vessel. Examples of the shape of a vessel's wall include, "incurving," "outcurving," "outleaning," and "vertical." The orientation of a vessel is based on whether the walls of a vessel converge or diverge. For instance, if a tangent line was drawn to intersect with a vessel's wall on opposite sides at the rim, the orientation distinction is based upon whether or not these two lines will eventually intersect. The shape and orientation categorizations are combined to make terms such as "outcurving divergent" and "incurving convergent."

Wall Thickness: The quantitative measure of the width of a vessel's wall at the widest point to ensure standard measurements. Wall thickness was measured using calipers at points generally between 3 and 5 cm below the rim.

Rim Form: The qualitative categorization of the shape of a vessel's rim. Rim forms consist of attribute states such as "outcurving," "direct," "everted," and "inverted."

Rim Width: The qualitative categorization of the thickness and shape of a vessel's rim. Examples of rim widths include "unthickened," "bolstered," and "exterior thickened."

Surface Treatment: The qualitative categorization of methods used by potters to finish the surfaces of vessels. In many instances, more than one type of surface treatment appears on the same sherd. Interior and exterior surface treatments were evaluated independently in this thesis. Examples of surface treatments include "burnished," "scraped," "slipped," and "wiped."

Lip Form: The qualitative categorization of the shape of a vessel's lip. The "lip" refers to the mouth of a vessel. Examples of lip forms include "rounded" and "tapered."

Plastic Decoration: Refers to the various techniques used to etch designs and decorations into the surface of a vessel. Plastic decorations may be “incised,” “excised,” “scratched,” etc.

Plastic Decoration Width: The quantitative measure of the width of designs etched into the surface of a vessel. The values recorded refer to the interval of measurements between etchings of the greatest width to the smallest width.

Plastic Decoration Depth: Similar to plastic decoration width, only this attribute refers to the depth of decorative etchings.

### 3.3 DATA COLLECTION METHODOLOGY

Data was collected over a one month period during the summer of 2010 at the INAH archaeology laboratory at the Ex-Convento de Cuilapan, Oaxaca, Mexico. A total of 457 sherds, partial vessels, and full vessels were included in a non-random sample taken from a number of excavations in the lower Verde dating from 1986-2009. Ceramic collections from individual excavations were spread out on examination tables in order to separate coarse brown wares, fine brown wares, and gray wares (see Joyce 1991 for a more detailed description of Chacahua phase ceramic typology). During the Terminal Formative, grayware vessels were, with few exceptions, the only types of vessels that were decorated; coarse and fine brown wares were utilitarian vessels typically used for cooking and storage, although some were serving vessels and cache vessels (Joyce 1991). Decorations were typically carved into vessels using various incision and excision techniques.

To assure for a good balance between quantitative and qualitative analysis, data were collected in a way that would facilitate both analytical paths. Several categories of quantitative data were collected in order to explore vessel form and function, focusing on how finely

decorated graywares were used. First, I examined each sherd to ensure its characteristics matched those of typical Chacahua phase graywares. For example, Chacahua phase graywares typically were fired at a lower temperature than graywares from the earlier Miniyua phase and tend to be more highly burnished (Joyce 1991). I also leaned heavily on the expertise of Arthur Joyce and Sarah Barber, both of whom have many years of experience with the lower Verde ceramic chronology, in cases when the date of a sherd was difficult to determine.

Once I determined a sherd dated to the Chacahua phase, I recorded the orientation, vessel forms, and wall forms. I judged the decorative finishing of each sherd based on several qualitative categories (i.e. scraped, wiped, burnished, etc.) I recorded the physical location of each decoration and measured the width and depth of incisions (if present) using calipers or a small, flexible ruler. Vessel diameters were recorded using a standard vessel diameter chart, measuring the exterior diameter of the vessel at all times. The wall thickness of each vessel was recorded using calipers, measuring at the thickest point present on the sherd.

Once processed and recorded, each sherd or vessel was photographed. I took at least one snapshot of every vessel and took several if the vessel form or decoration were unique in some way. Joyce, Barber, and Workinger had drawn several of the sampled sherds during their ceramic analyses, so it was not necessary to draw every sherd. Unique graywares were drawn on graph paper at a 1:1 (cm) scale. Data were recorded in a Microsoft Excel spreadsheet to make room for notes and other observations and then transferred into a relational database created using Microsoft Access. In the relational database, data were entered using numerical codes to facilitate rapid calculations and filtering. For instance, within the category “Vessel Form,” the

numerical code “1” corresponds to the attribute state “conical,” “2” corresponds to “semispherical,” and so on.

### 3.4 ARCHAEOLOGICAL CONTEXTS

In addition to evaluating patterns of symbolic messaging, this thesis discusses regional variability in stylistic traits and iconographic motifs of elaborately decorated graywares from sites throughout the lower Verde. Keeping in mind that elaborately decorated grayware sherds are relatively rare, the aim of attaining a regional perspective also required data to be sampled from several sites and contexts. In total, artifacts from 17 sites in the lower Verde make up the Chacahua phase grayware sample (Table 2). The majority of artifacts come from excavated contexts at Río Viejo and Yugué—two of the most extensively studied sites in the region. A sizeable percentage of the sample also comes from sites with smaller ceramic samples, including Cerro de la Cruz, Cerro de la Virgen, Barra Quebrada, and San Francisco de Arriba, as well as sites catalogued during a regional survey.



Table 2: The Chacahua phase grayware assemblage

Site	No. of Artifacts	% of Total
Cerro de la Cruz	46	10.13%
Río Viejo	178	39.21%
Charco Redondo	2	0.44%
La Boquilla	1	0.22%
Coyuche	1	0.22%
Barra Quebrada	49	10.79%
Algondera	1	0.22%
Piedra San Vicente	1	0.22%
Camino Charquito el Guayaba	1	0.22%
Loma Manatíal	1	0.22%
La Cacica	1	0.22%
La Concha	1	0.22%
Loma de los Huesos	3	0.66%
Minizundo	4	0.88%
San Francisco de Arriba	42	9.25%
Cerro de la Virgen	15	3.30%
Yugüe	106	23.35%
Unknown	3	0.66%
<b>Total</b>	<b>457</b>	<b>100.00%</b>

### 3.4.1 Barra Quebrada

Initially reported by Brockington (1974) in his survey of archaeological sites on the Pacific coast from 1969-1971, Barra Quebrada (RV-2) is named for the periodic floods of water from a nearby lagoon. The site is small in area—occupying less than 20 ha—and is located 2 km to the east of the Río Verde on a patch of land separating the Laguna de Chacahua from the ocean. Winter and Joyce (1987) carried out excavations at Barra Quebrada in 1986 to understand the occupational history of the site, which inhabitants occupied as early as the Late

Formative Period. Five locales were excavated including three test pits—*Hoyos* (Holes) 1, 2, and 3—and two “stratigraphic” pits—*Pozos* (Pits) A and B. The locations for *Pozos* A and B were chosen based on their relatively high elevations, ideal for determining an occupational sequence for the site. *Pozos* A and B were excavated in 20 cm arbitrary levels, and *Hoyos* 1, 2, and 3 were excavated according to changes in cultural and sedimentary patterns.

*Pozo A* – Sampled graywares from *Pozo A* were found in levels 8 (1.6-1.8 m below surface) and 12-16 (2.2-3.2 m below surface). The lower levels (12-16) likely date to the Terminal Formative Period. In level 13, excavators detected a feature (*Elemento 4*) consisting of a circular area containing domestic refuse. This feature, likely a small domestic midden, contained ceramic sherds (including grayware serving vessels), burned earth, and shells. In addition, some of the vessels appeared to contain fragments of shell.

*Pozo B* – Sampled graywares from *Pozo B* were found in levels 12-16 (2.7-3.6 m below surface) and level 18 (3.9-4.2 m below surface). These levels were likely contemporary with the Terminal Formative Period, but it is unclear if all date to the Chacahua phase based on the ceramics available. A feature (*Elemento 7*) was detected at 3.6 m below the surface containing a deposit of compacted earth filled with domestic refuse, sherds, shells, and fragments of carbon. Vessels from *Elemento 7* likely date to the Chacahua phase, based on vessel forms and iconography present.

*Hoyos 1, 2, and 3* – These three stratigraphic pits accounted for a small percentage of the sample from Barra Quebrada. *Hoyo 1* was an excavation of an artificial mound. Six artifacts were included from levels 3 and 5 (approximately 2.8 – 4 m below surface), indicating it may have been used or occupied during the Chacahua phase. *Hoyo 2*, a 1m x 1m excavation unit at the

foot of a mound 30 to the north of *Hoyo* 1, and *Hoyo* 3, a 1.5m x 1m excavation unit on the slope of a mound on the eastern side of the site, accounted for a total of three artifacts in the sample.

#### 3.4.2 *Cerro de la Cruz*

The site of Cerro de la Cruz is located approximately 4 km west of the Río Verde, less than 2 km to the southwest of Río Viejo. The site was discovered during the RVAP regional survey in 1986 (Winter and Joyce 1987). The site had been bulldozed prior to the survey, exposing dense deposits of ceramics dating to the Late and Terminal Formative Periods (Joyce 1991:95). Joyce stated that the height of habitation at Cerro de la Cruz occurred during the Minizundo phase, occupation continued into the Miniyua and Chacahua phases, and population declined by the Coyuche phase.

During the preliminary survey period, a “rescue mission” was undertaken to collect obsidian, ceramics and other surface finds before they were destroyed by erosion or further use of the area for construction fill (Joyce 1991:96). As a result, a wealth of finely crafted, although fragmented, Chacahua phase graywares comes from Cerro de la Cruz. The majority of graywares sampled from Cerro de la Cruz (28 out of 46) come from surface collections. The remaining artifacts were found in contexts suggesting Chacahua phase occupation or construction fill contexts postdating the Chacahua phase.

#### 3.4.3 *Yugüe*

The site of Yugüe is located 4 km southeast of Río Viejo, one of a group of settlements on the eastern bank of the Río Verde. Excavations at Yugüe (Barber 2005) indicate the site was a “cosmopolitan” community during the Terminal Formative, occupying a third-order

designation in the settlement hierarchy for the period. During the Proyecto Río Verde 2003 (PRV03), Barber conducted block excavations on Substructures 1 and 2; both were public contexts at the top of the Yugüe platform, a single massive earthen mound 300 m long and 200 m wide. The excavation of Substructure 1, coded “Operation 1,” intended to identify practices that elaborated elite and community identities by recovering public architecture, ritual deposits and middens (Barber 2005:150). Excavations at Substructure 2, coded “Operation 2,” aimed to examine the practices carried out on this public structure that facilitated elite identity.

Operation 1 – Inhabitants of Yugüe carried out a variety of activities and practices on Substructure 1 during the Chacahua phase. The majority (41%) of decorated graywares from Operation 1 come from a large sheet midden, Feature 42 (F42), deposited in the upper strata of Substructure 1. Given its public location, large proportion of gray ware bowls, the numerous amount of “lightly used” vessels, and the outstanding preservation of the ceramics, Barber (2005:180-81) argues that the F42 midden was likely deposited in the wake of a public ritual feasting event. Other artifacts from Operation 1 were found below the sheet midden and in surrounding occupational and fill contexts dating to the Chacahua phase.

Operation 2 – Excavations at Operation 2 indicate that Substructure 2 was an exclusive, public structure dating to the Chacahua phase. Barber (2005:202-205) encountered significantly lower artifact densities at Substructure 2 in comparison to contexts found on Substructure 1, indicating access to this area may have been tied to status distinctions. Sampled graywares from Operation 2 all came from a vessel cache (F4) situated near the center of Substructure 2. F4 consisted of a several artifacts including a coarse brownware cooking jar, grayware sherds, shell, earspools, a

figurine, and burned earth, many of which were symbols of high status. Barber suggests that F4 may have been an exclusive, private deposit interred by elite individuals.

#### 3.4.5 *San Francisco de Arriba*

Excavations at San Francisco de Arriba, a piedmont site located 10 km to the east of Cerro de la Virgen on the extreme eastern extent of the valley, were carried out by Workinger (2002) over a three year period from 1997-1999. The purpose of the study was to address the Zapotec imperial conquest model during the Terminal Formative period. Based on the presence of fine gray ware ceramics (argued to have been an indicator of Monte Albán influence) at coastal sites as well as the reading of the conquest slabs of Building J at Monte Albán, Marcus and Flannery (1996) argued that Monte Albán extended its sphere of influence through militaristic campaigns into the Cuicatlan Canada, the Mixteca, and as far south as the Pacific coast of Oaxaca. At San Francisco de Arriba, Workinger excavated a ridgeline (Ridgeline 2) showing definite signs of occupation based on surface survey to investigate whether or not it was used for defensive purposes. Piedmont spurs like Ridgeline 2 were occupied during times of conflict in the Valley of Oaxaca (Blanton et al. 1996). In addition to excavations at Ridgeline 2, the main acropolis and adjacent structures were excavated to test for evidence of Zapotec administrative structures and other symbols of the imperial center as well as the absence or presence of major economic reorganization.

While few signs of Zapotec influence were found during Workinger's research, several late Terminal Formative contexts were discovered. Although the site likely experienced a drop in population during the transition between the Late and Terminal Formative Periods, San Francisco de Arriba continued to occupy a second-order ranking in the valley settlement

hierarchy during the Chacahua phase. Sampled graywares from the site come from excavations carried out by Workinger in 1999 on Ridgeline 2 and the Acropolis. Graywares included in the sample come from occupational fill contexts inside a retention wall at Ridgeline 2 (Operation 99A) as well as construction fill and occupational contexts from structures excavated on the acropolis (Operations 99E and 99F). In addition, finely decorated graywares from a ceramic vessel cache (99F-F36) dating to the Chacahua phase were included in the sample.

#### *3.4.6 Cerro de la Virgen*

Located in the piedmont on the northeast edge of the valley, Cerro de la Virgen is located east of the Río Verde, 12 km to the east of Río Viejo, and 10 km to the west of San Francisco de Arriba. Survey data indicates that Cerro de la Virgen increased considerably in size during the Terminal Formative Period, growing from two small 3 ha locations during the Miniyua phase to a large 60 ha site by the Chacahua phase (Joyce 2010). The site occupies a second-order rank in the settlement hierarchy for the Chacahua phase. Occupational terraces were built along the hillside and dotted with stone architectural features, indicating the terraces were residential. Soil on the hillside was dry and likely could not support extensive agriculture, although residents of Cerro de la Virgen likely farmed the surrounding flood and coastal plains.

Barber (2005) excavated an elite residence on Terrace 1 to examine elite domestic activities. The majority of sampled graywares from Cerro de la Virgen come from a small domestic midden (F37) pertaining to the construction or occupation of a substructure in this domestic setting, Terrace 1-sub2. Barber describes F37 to be similar in composition to domestic middens known from the Miniyua phase. Proportions of vessel paste frequencies were quite

different from the contemporary F42 midden at Yugüe, indicating the activities surrounding its deposit may have been fundamentally different.

### 3.4.7 *Río Viejo*

Excavations at the Terminal Formative regional political center of Río Viejo began in 1988 during the RVFP. Since then, over 20 years of research indicates that Río Viejo became the most powerful political center in the valley sometime at the beginning of the Miniyua phase and then again during the Late Classic Yuta Tiyoo phase. Large construction projects requiring communal labor, including residential and “mixed-use” platforms, were built at Río Viejo (as well as at other secondary political centers in the valley) during the Terminal Formative, the most impressive of which is the Mound 1 acropolis (Barber 2005; Workinger 2002; Joyce 2008; Levine et al. 2004). Sampled graywares from Río Viejo account for the lion’s share of artifacts (178 of 457) in the Chacahua phase grayware sample and come from several different archaeological contexts listed below.

RV88 Operation D – This operation consisted of a 4m x 1m test unit placed in conjunction with other similarly sized units to explore the Formative Period extent of the eastern area of the site. Sampled graywares from Operation D come from a 35cm thick deposit of ceramics found dating to the Chacahua phase. Based on sherd weights and the lack of other items such as shell, bone, ash, and charred plant remains, Joyce (1991:385-86) interprets this deposit to represent a ceramic dumping ground rather than a domestic midden.

RV95 Operation B – This operation was a 1m x 1m test unit excavated on the west arm of Mound 2 at Río Viejo. Artifacts included in the sample from this context were likely redeposited as part of a large construction fill episode during the Late Classic Period; although it is possible

that they could have been part of an offering for a burial dating to the late Terminal Formative or Early Classic Periods. It is not clear if this burial (RV-B21) was intentionally placed there or if its contents were accidentally interred there during later construction episodes.

RV95 Operation C - This operation was a 1m x 1m test unit excavated on the southeast side of Mound 4 at Río Viejo. On top of several layers of naturally deposited sediments (dating to the Late Formative and early Terminal Formative periods), a dense series of alternating trash middens and construction layers were found all dating to the Chacahua phase. It is likely that these middens were domestic in nature, given the preservation of artifacts found.

RV95 Operations D, F, G – Graywares from these operations came primarily from fill contexts.

RV09 Operation D – This operation was a 4m x 4m test unit placed on the southwestern edge of the Mound 1 acropolis in order to explore the construction sequence of the area leading into the patio hundido. Graywares sampled from this excavation come from a concentration of sherds underlying a burial (B57-I66). The ceramics of this deposit, dating predominantly to the Chacahua phase, may have been associated with the burial, the Chacahua phase construction in the area, or both.

RV09 Operations A and F – Graywares from these operations came primarily from fill contexts.

#### 3.4.8 *Surface Survey Contexts*

The remaining artifacts included in the Chacahua phase grayware sample come from the 1988 regional settlement survey completed during the RVFP. The analytical value of these graywares is naturally lower than those excavated in controlled, primary contexts; however, I elected to include them in the sample to track various motifs across the valley. They also add to the overall understanding of Chacahua phase vessel forms for serving wares, particularly those



with elaborately decorated interiors and exteriors. All 17 sites sampled accounted for at least one sherd found during these surface surveys. Only three sherds in the sample lacked any provenience.

#### *3.4.9 Discussion of Archaeological Contexts*

The archaeological contexts sampled for this thesis (see Table 3) provide a variety of perspectives from which we can interpret how ideologies were constructed and spread through ceramic iconography. First, the diversity in modes of ceramic deposition (i.e. ceramic dumps, domestic middens, ceremonial middens, and vessel caches) of sampled contexts provides insight into the varied use of grayware serving vessels during the Chacahua phase. Second, the range of sites sampled throughout the region provides a wider scope to analyze the importance of specific icons, laying the foundation for broader analyses of regional political interaction. In particular, by analyzing artifacts from contexts indicative of elite-sponsored rituals, such as feasting or caching events, we may glean certain notions about what particular icons signified to Chatinos.

Table 3: Sites and Associated Contexts Sampled (P=primary context; S=secondary context)

Site	Project	Op(s)	Context(s)*	Description
Cerro de la Cruz	RV86	S	S	Surface collection
	RV88	A	S	LF Architecture with LTF Occupation
Río Viejo	RV09	A, D, F	P, S	LTF-EC sherd dump, LTF-EC burial, LC burial w/ redeposited LTF ceramics
	RV88	D1, D2	P	LTF Domestic Middens
	RV95	B, C, D, E, F, G	P, S	LTF Burial, LTF Architecture, LTF Occupational Debris, LC w/ LTF Fill, LTF Construction/Occupation
	RV86	S	S	Surface Collection
Charco Redondo	RV09		P/S	Multiple Burials
	RV86	S	S	Surface Collection
La Boquilla	RV86	S	S	Surface Collection
Coyuche	RV86	S	S	Surface Collection
Barra Quebrada	RV86	A, B		LTF
Algondera	RV86	S	S	Surface Collection
Piedra San Vicente	RV86	S	S	Surface Collection
Camino Charquito el Guayaba	RV86	S	S	Surface Collection
Loma Manatíal	RV86	S	S	Surface Collection
La Cacica	RV86	S	S	Surface Collection
La Concha	RV86	S	S	Surface Collection
Loma de los Huesos	RV86	S	S	Surface Collection
Minizundo	RV86	S	S	Surface Collection
San Francisco de Arriba	PASFA	A, E, F, G, I	P/S	LTF Cache, LTF Occupational Debris, LTF Fill
Yugüe	RV0A	B		LTF
	RV86	S	S	Surface Collection
	PRV03		P	Two LTF Middens
Cerro de la Virgen	RV86	S	S	Surface Collection
	PRV03		P	LTF Domestic Midden

\*S=secondary context; P=primary context

### 3.5 QUALITATIVE ANALYSIS METHODOLOGY

After I classified graywares according to their stylistic traits, motifs were examined according to the category in Peircean semiotics under which they fell (e.g. symbol, icon, and

index) and preliminarily described. First, icons were identified according to the more obvious physical links they shared with objects or concepts from the real world (i.e. representations of animals, structures, people, plants, and so on). These icons were compared to similar Oaxacan iconographic representations (the lower Verde, Mixteca Alta, and Valley of Oaxaca) as well as other areas of Mesoamerica in order to aid particular lines of reasoning in approaching symbolic identification and meaning. I extended this analogous examination to temporal periods both predating and postdating the Chacahua phase, as both distinctions add to the interpretations of iconographic motifs in different ways.

### 3.6 QUANTITATIVE ANALYSIS METHODOLOGY

As many scholars have stated, quantitative reasoning is essential to archaeological study (Aldenderfer 1987; Baxter 2003; Shennan 1997). By quantifying archaeological data, categories of analysis are easier to compare, contrast, and relate to one another. First, simple statistical measures relating to the polity-wide grayware assemblage were completed to examine patterns in grayware manufacturing from a regional perspective. This not only provides a basic level of interpretation of the role of graywares in ritual and everyday activities in the lower Verde, but it also sets expected values or proportions of ceramic attributes from which we can test assemblages from individual sites or types of contexts (i.e. ceremonial, domestic, etc.). Proportions of particular motifs and vessel styles were compiled to determine if there was a suite of icons that represented a particular Chatino worldview.

To explore patterns in regional interaction, specifically regarding the use and/or spread of particular stylistic traits and iconographic motifs, I turn to data analysis methodologies that employ the concept of *diversity*. Diversity indices, or calculations of diversity, measure the form

taken by a set of data rather than explicitly offering an interpretation of meaning. Diversity analyses became popular during the early 1980s because of their ability to summarize variability in an archaeological assemblage (cf. Conkey 1980; DeBoer and Moore 1983; Kintigh 1984). According to Kintigh (1989), the concept of diversity is related to the number of classes present in an assemblage (richness) and the uniformity of the distribution of relative frequencies in each class (evenness). It is generally used to describe variation in a nominal variable, such as “grayware vessel form” or “iconographic motif” or other classificatory variables. To better explain the benefits (and deficiencies) of using diversity indices, the concepts that make up the analytical measure must be clarified.

First, the concept of richness, or the wealth or variety of species (or, more pertinent to this study, stylistic forms or iconographic motifs) in a collection provides the starting point for measuring differences and similarities in a collection (Bobrowsky and Ball 1989). In her study of archaeological diversity, Conkey (1980) uses the richness statistic to analyze the distribution of decorative motifs on engraved bone artifacts from Lower Magdalanian hunter-gatherer sites in Cantabrian Spain. Conkey (1980:609-10) indicates that because of the larger range of decorative motifs (38) compared to other sites (the next highest range was from the site of Cueto de la Mina with 27), the site of Altamira was a “place in which affiliated groups and individuals came together.” However, as Rindos (1989) demonstrates, richness measures like the former are often greatly affected by sample size. With very small samples, the effect of sample size is quite great. For example, a sample size of four items can have no less than one class and no greater than four. Kintigh (1989:26) further elaborates that because of the nature of archaeological samples, which are “imposed on us by the agents responsible for the archaeological record,” sample sizes

often vary widely. As a result, sample sizes are hardly ever equivalent or even comparative among separate collections. For instance, returning to Conkey's example, the site of Altamira accounted for 152 total design elements on bone artifacts, more than double the number of total design elements represented at the next "richest" site, Cueto de la Mina (69). Thus, as Kintigh (1989) notes, it is imperative we know that if sample-size effects were removed, Altamira would still have a greater richness than Cueto de la Mina and other contemporary sites. In this thesis, I follow the methodology employed by Kintigh in his re-evaluation of Conkey's Lower Magdalenian data.

To approach the effect of sample-size, measures of *relative* richness must be used in favor of simple differences in item or species frequencies. Kintigh argues that one way to obtain a measure of relative richness is to develop an expectation for richness that is based on the sample size. First, the probability distribution of all items (whether they are species, design motifs, etc.) in the *entire* assemblage (from all sites) were made. Then, a large number of simulations of every possible sample size (from the smallest to the largest possible) were run in reference to these probabilities. For this thesis, the simulation task was done by generating a number of discrete random variables equal to the sample size being simulated. The proportions of each motif or stylistic trait were then matched up with this random variable according the relative proportion the motif is expected to be encountered on a vessel. A histogram of the results for the simulation of each sample size is made and the mean, standard deviation and confidence intervals are calculated and plotted on a graph in conjunction with the original richness values. For each sample size, 500 simulations were run. For the Lower Magdalenian site data, Kintigh notes that the richness score for Altamira's design assemblage is well above the

expected richness based on the simulations, supporting Conkey's original assessment that Altamira was an aggregation site. I expected to see diversity scores higher than those recorded by Conkey because this thesis explores urban centers and settlements with presumably larger populations than sites visited by hunter-gatherers during aggregation activities. I also expected to find larger diversity scores (both richness and evenness) for Río Viejo than those for neighboring sites. A larger diversity score indicates a wider range of motifs present. I interpret this distinction as symbolizing a site in which ideas aggregate, or an "ideological aggregation site."

## **CHAPTER 4: FORMAL ANALYSIS OF CERAMICS, ICONS, AND GEOGRAPHIC DISTRIBUTION**

### **4.1 INTRODUCTION**

This chapter presents the qualitative and quantitative analyses of artifacts in the Chacahua phase iconographic grayware sample. I begin by describing the general characteristics of vessels and other artifacts, focusing on the way in which vessel form influences the visibility of plastic decorations. Next, I provide a detailed analysis of the common decorative themes and the iconographic motifs that stand out on Chacahua phase graywares. Wherever possible, I link icons to similar decorations on vessels and other artifacts from regions and cultures surrounding coastal Oaxaca. Finally, I apply statistical measures of diversity and association to describe patterns in the grayware assemblage from various perspectives.

In the initial ceramic typology for the region, Joyce (1991) demonstrates that serving vessels with gray paste initially appeared during the Miniyua phase. During this period, potters in the lower Verde continued to make the coarse and fine brownwares that dominated the ceramic corpus of the preceding Minizundo phase. Local potters occasionally covered Minizundo and Miniyua phase fine brownwares with a black graphite slip that may have been an attempt to imitate grayware vessels from neighboring regions (i.e., the Valley of Oaxaca). It was during the Miniyua phase that local grayware production began. By the Chacahua phase, graywares completely replaced fine brownwares as the predominant paste type for serving vessels. Chatinos continued to use coarse brownwares for utilitarian cooking and storage purposes as well as the occasional ceremonial vessel. By the Late Classic Yuta Tiyoo phase, orangewares replaced graywares as the preferred paste type for serving vessels.

## 4.2 DECORATED GRAYWARE VESSEL FORMS

This section concentrates on drawing out patterns relating to decorated grayware vessel types and forms. The overwhelming majority of vessel types with complicated plastic decorations were serving bowls. Bowls account for 91.9% of the artifacts included in the sample, followed by jars (2.6%) and ollitas (1.1%). Bowls were broken up into categories according to their basic form (Figures 5 and 6). Over 80% of all serving bowls in the sample were conical or semispherical. Chatinos did not decorate comales—flat ceramic platforms used for cooking tortillas—during the Chacahua phase, so I exclude them from discussion here. The category, “Other” consists of ceramic eccentrics, which will be discussed as they pertain to particular arguments or lines of reasoning throughout the next two chapters.

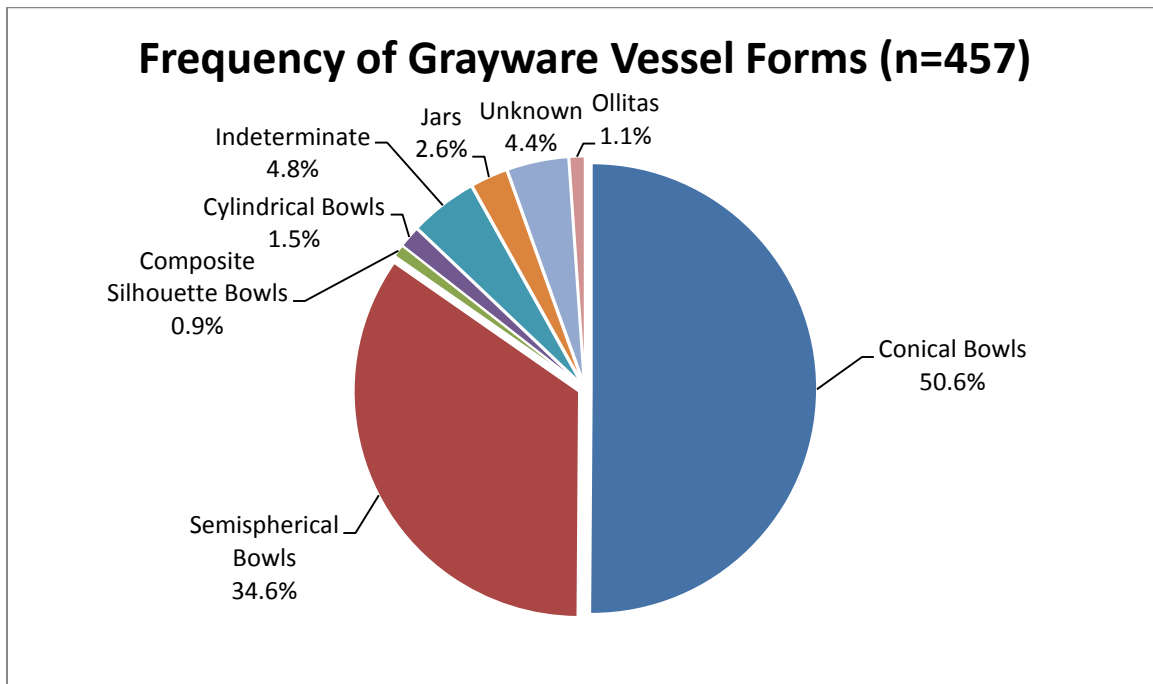


Figure 5: Frequency of Grayware Vessel Forms



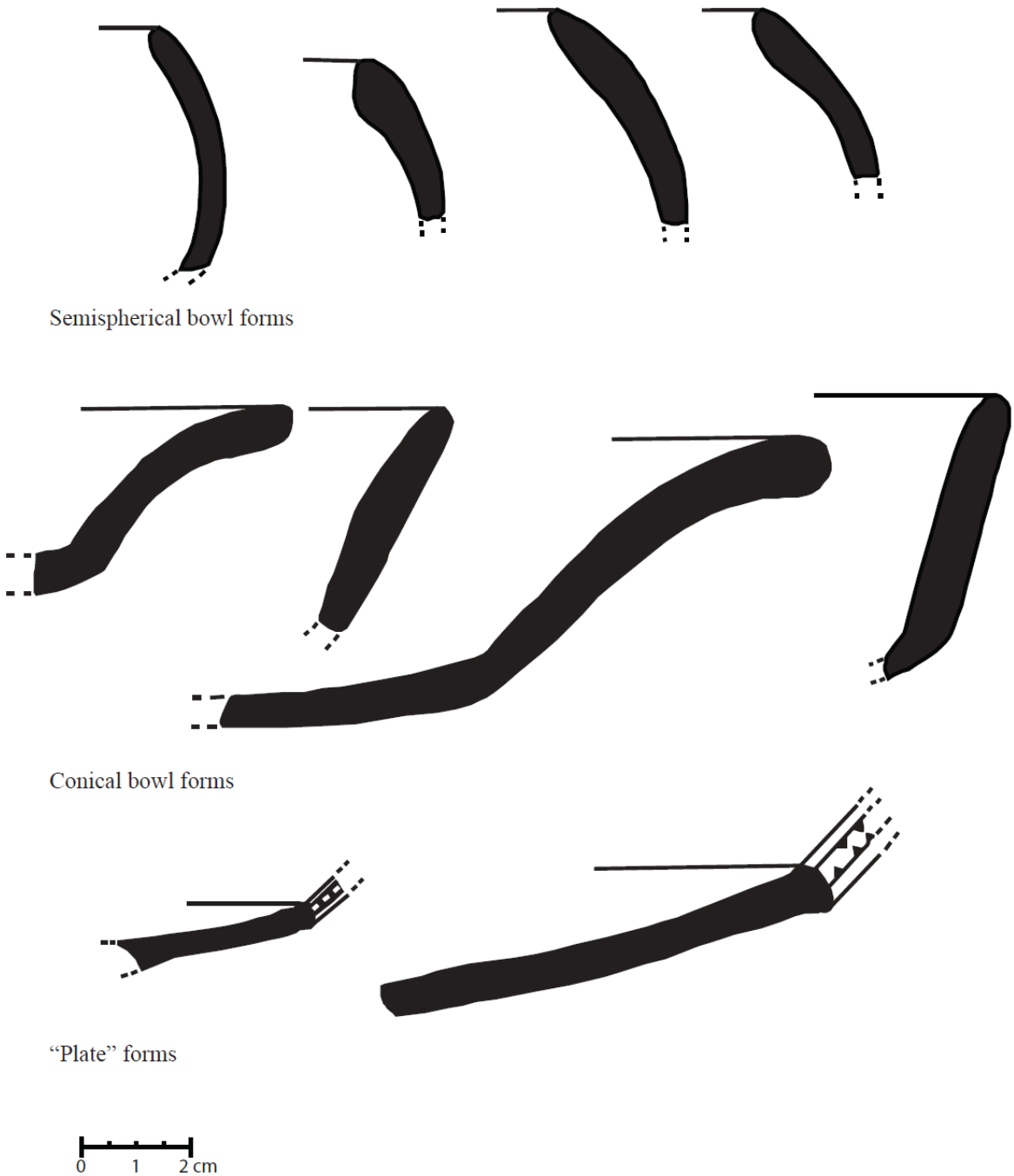


Figure 6: Grayware Vessel Forms (drawings by J. Brzezinski)

#### 4.2.1 *Conical Bowls*

Conical bowls dominate the sample of Chacahua phase graywares, accounting for 47.5% of all artifacts. Chatinos typically made grayware conical bowls with flat bases and outleaning or outcurving walls. Potters typically carved decorations into the interior or exterior walls, though they also decorated inverted and everted rims, attached modeled appliqués to the walls, and combed designs into the bases. The average wall thickness of conical bowls in the sample was 9.45 mm. Rice (1987) notes the wall thicknesses of serving vessels tends to be thick enough not to break from frequent usage but thin enough to prevent extremely heavy weights (especially with full loads of solid food or liquid). A wall thickness of 9.45 mm would have presumably met these two criteria, given the fine paste texture used for graywares.

Decorations tended to occupy positions on the exterior of conical bowls (Figure 7). The visibility of decorations depended on the shape of the vessel. For instance, highly divergent conical bowls tended to have decorations on the inside of the vessel. The likelihood of encountering a decoration on the exterior of a conical bowl increased as the angle between the base and wall decreased from 180° (extremely divergent walls) to 90° (parallel walls).

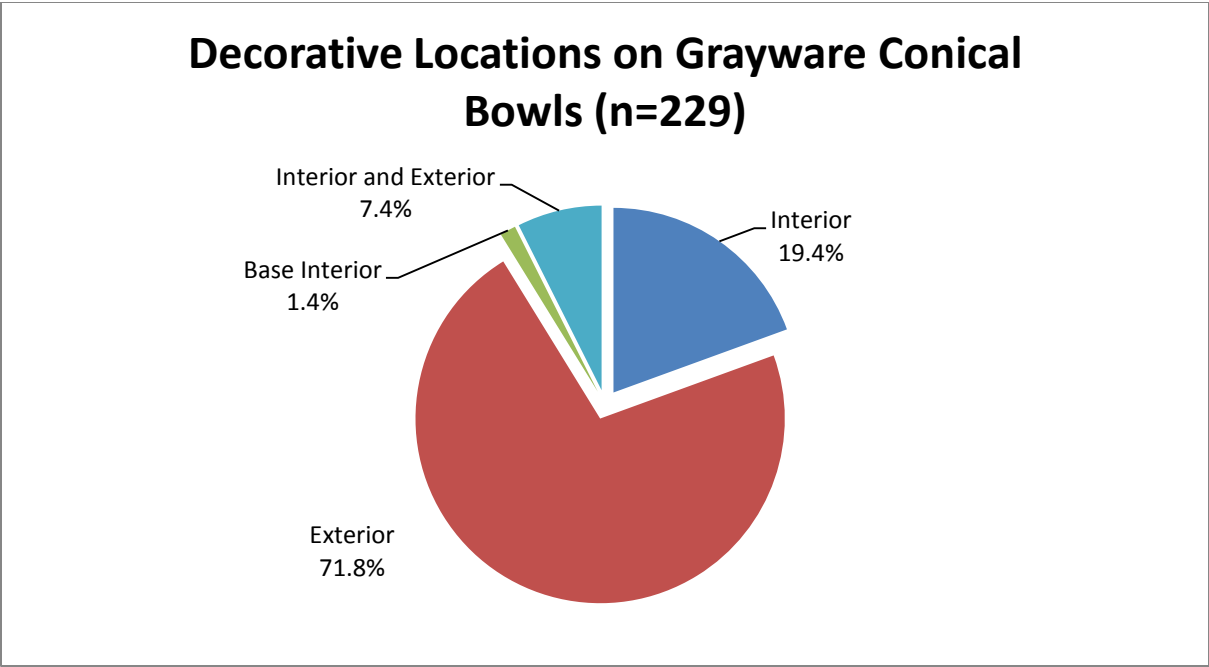


Figure 7: Decorative Locations on Grayware Conical Bowls

4.2.2 *Semispherical Bowls*

Semispherical bowls were the second-most common bowl form. Semispherical bowls have rounded bases that gradually transition into incurving walls without a significant change in wall angle. Rim forms observed were direct (no change in angle or thickness from wall), everted, and inverted; rim thicknesses were mostly unthickened, but a few were interior or exterior thickened. On average, semispherical bowls tended to be smaller than conical bowls. The mean diameter for semispherical bowls was 15.6 cm, less than 60% the size of the mean diameter of conical bowls (27.4 cm). Vessels of this form accounted for 34.6% of the sample. Chatinos frequently decorated these vessels with complicated designs, sometimes covering more than half of the available surface area of the vessel. In all, 139 semispherical bowls were incised on the exterior, accounting for 88.5% of vessels recorded in this category (Figure 8).

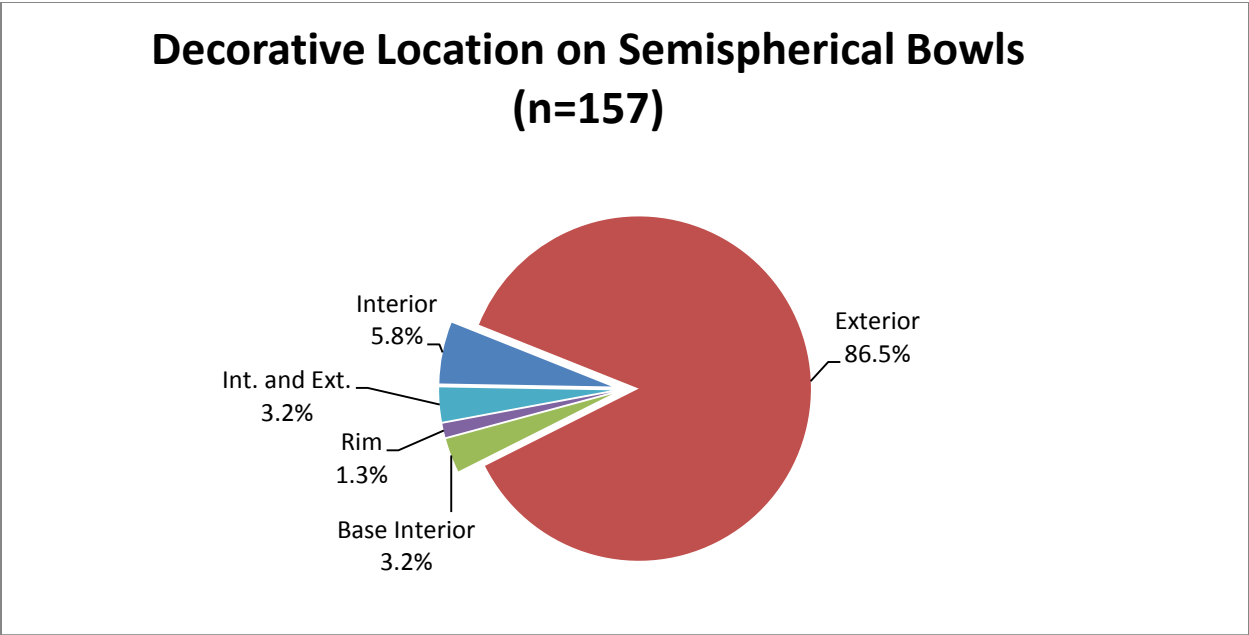


Figure 8: Decorative Location on Semispherical Bowls

#### 4.2.3 Plates

In the ceramic typology for the lower Verde, plates are placed in the “bowl” category because it is difficult to distinguish the threshold for what constitutes a bowl as opposed to a plate. Thus, plates are defined as extremely divergent bowls. I separate plates from the “bowl” category for this section because it is likely that Chatinos used plate-like vessels differently than other serving bowls. First, given their highly divergent walls (dividing line was base to wall angles greater than 160°), plates would have held far less food than a conical bowl with walls that were less divergent in angle. Second, plates would not have been able to hold liquids, further constricting the types of foods or other items they may have served. Alternatively, Lesure (1998) suggests that similar vessel forms found in collections from Paso de la Amada, Chiapas, Mexico, are actually lids for *tecomates*, or convergent, bowl-like vessels with restricted openings. *Tecomates* are rare during the Chacahua phase However, the vessels that Lesure

describes are plain in decoration and rare, whereas incised plates from the lower Verde are elaborately decorated on the interior surface, possibly indicating that Chatinos primarily used them for activities in which the interior surface was exposed.

In total, 20 of 229 sampled conical bowls were “plates,” accounting for 8.7% of all conical bowls and 4.4% of all artifacts in the sample. The distribution of plate diameters indicates there may have been at least two standard plate sizes preferred by Chatinos. Plate diameters appear to cluster around two values, 15 and 30 cm (Figure 9). Compared to graywares on average, the mean wall thickness of the smaller grouping of plates was thin, averaging 5.2 mm in width. It is likely that Chatinos used these small, thin-walled plates, which resemble modern tea saucers, for delicate dry foods that were light in weight. There appears to have been a level of standardization in the decoration of small plates. Potters carved designs into the interior (upper surface) of the plate within approximately 3 cm of the rim. None of the small plates exhibited similar design motif, suggesting that plates may have been a medium on which Chatinos presented and shared special icons. Several different decorations adorned the lips of small plates, including grooved lines and punctations. Potters typically carved the larger plates with less complicated decorations but exhibited a number of stylistic variants. Occasionally, the rims of large plates were inverted and carved with decorations. One very elaborate and complicated illustration (likely a scene of some kind) from Río Viejo (RV95-Op C) was one of the most intricately designed vessels in the entire sample.

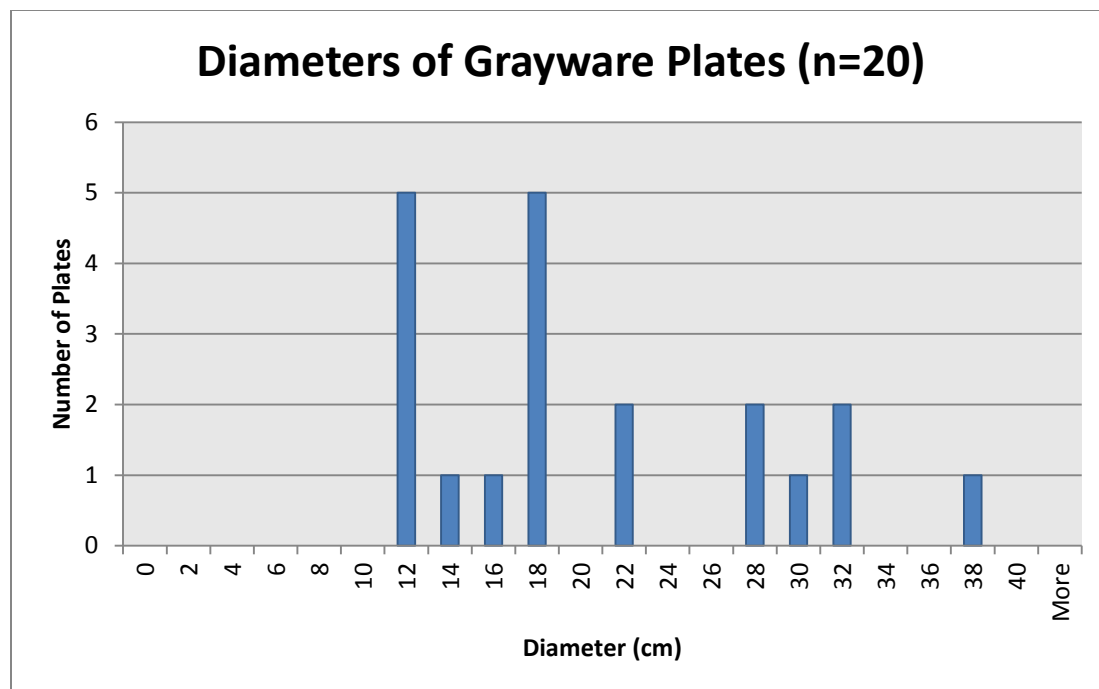


Figure 9: Diameters of Grayware Plates

#### 4.2.4 Jars

Jars occurred infrequently in the Chacahua phase grayware sample but accounted for the second highest frequency of vessel types (2.6%). I cannot give a confident size estimate or range of sizes because of the fragmentary nature of most of the jar fragments included in the sample. However, it appears that jars of all types and sizes were decorated with iconography.

Decorations tended to be simple in structure, depicting abstract curvilinear designs and certain iconographic motifs, including the “crab claw” motif. Decorations occurred on the bodies, necks, and rims of jars.

#### 4.2.5 Burnishing

Joyce (1991) notes that Chatino potters made a large percentage of Chacahua phase graywares with finely burnished walls and bases. Burnishing refers to the polished appearance

potters gave to their ceramics, which functioned not only to give ceramic wares a fancy appearance, but also conveniently provided a smooth surface to which foods would not stick as easily (Rice 1988:138). To burnish a grayware, Chatinos would polish the vessel walls with a smooth stone when the vessel was leather-hard (air-dried). After the desired walls, rim, and base were burnished, potters carved designs into the hardened clay, indicated by the smudging of clay inclusions that often appears near carved decorations. A sizable majority of vessels in the Chacahua phase grayware sample were recorded as burnished in some way (Table 4). Potters utilized a number of different methods to treat the surfaces of their grayware pots, including burnishing after smoothing or wiping the hardened clay. If a vessel was burnished, typically it was burnished on both the interior and exterior. Un-burnished surfaces were wiped, smoothed, or scraped, and a noticeable proportion of vessels surfaces were eroded to the point that determining surface treatment was not possible.

Table 4: Grayware Surface Treatments

<b>Interior Surface Treatment</b>			<b>Exterior Surface Treatment</b>		
	Number	Frequency		Number	Frequency
Burnished	305	66.7%	Burnished	347	75.9%
Not Burnished	79	17.3%	Not Burnished	31	6.8%
Eroded	73	16.0%	Eroded	79	17.3%
<b>TOTAL</b>	<b>457</b>	<b>100.0%</b>	<b>TOTAL</b>	<b>457</b>	<b>100.0%</b>

#### 4.2.6 *Summary*

It is clear that the majority of graywares with plastic decorations were serving bowls. More than 90% of vessels with carved iconography were bowls, indicating that the primary locus of iconographic display—and communication—was on the walls of these vessel types. Chatino potters seemed to favor the exterior of vessels as the canvas for their decorations, particularly

when decorating semispherical bowls and conical bowls with walls that were not highly divergent. If potters made a highly divergent wall bowl, the icon was typically placed on the inside for optimum viewing potential. Potters burnished the walls of the majority of vessels on both the interior and exterior, further indicating that graywares were meant to be seen and were labor-intensive to make.

#### 4.3 DECORATIVE MOTIFS

In this section, I present the results of the iconographic portion of the ceramic analysis. Over 50 different design motifs were observed and recorded on graywares; the frequencies of which are listed below (Table 5). First, I identify the most common design motifs displayed on the graywares. Wherever possible, I compare these data to qualitative analyses of iconography from other regions of ancient Oaxaca. I attempt to limit these cross-cultural analogies to ceramic iconography from periods contemporaneous with the Chacahua phase, although artistic media such as sculptures and public architecture may also aid in making interpretations. Finally, I pay special attention to the ways in which Chatinos presented each icon or decorative theme on graywares.



Table 5: Frequency of Iconographic Motifs

Motif	No.	Freq.	Motif	No.	Freq.
Rectilinear	58	6.60%	Anthropo-zoomorphic	1	0.10%
Curvilinear	51	5.80%	Bifurcated Tongue (?)	1	0.10%
Upper Framing Line	194	21.90%	Spirals	28	3.20%
Two Upper Framing Lines	55	6.20%	Architecture	2	0.20%
Vertical Line	12	1.40%	Notches under Rim	7	0.80%
Two Vertical Lines	9	1.00%	Notches on Rim	6	0.70%
Three Vertical Lines	9	1.00%	Notches around Base	2	0.20%
Lower Framing Line	61	6.90%	Basal Punctation	1	0.10%
Two Lower Framing Lines	10	1.10%	Diagonal Lines	7	0.80%
Vertically-Aligned Horizontal Ticks	9	1.00%	Patterned Rectangles	10	1.10%
Coupled Sets of Diagonal Lines	25	2.80%	Crosshatch	7	0.80%
Simple Step Fret	12	1.40%	Heart (?)	1	0.10%
Complex Step Fret	4	0.50%	Waves	3	0.30%
Volute	18	2.00%	Stamp Box	2	0.20%
Feathers	3	0.30%	Fork Glyph (?)	1	0.10%
Arch Type 1	21	2.40%	Diagonal Lines in Triangle	3	0.30%
Arch Type 2	5	0.60%	Basket	3	0.30%
Arch Type 3	15	1.70%	Grouped Rectangles	8	0.90%
Arch Type 4	3	0.30%	Rim Punctations	1	0.10%
Trefoil Type 1	38	4.30%	Wall Punctations	8	0.90%
Trefoil Type 2	8	0.90%	Rays	1	0.10%
Trefoil Type 3	13	1.50%	Crab Claw	24	2.70%
Lazy-S	67	7.60%	Hook Curve	9	1.00%
Alternate S-Curves	7	0.80%	Pair of Hook Curves	19	2.10%
Paired Lazy-S	5	0.60%	Curly Q	2	0.20%
Fancy S-Curve	1	0.10%	Arrow	1	0.10%
Zoomorphic	8	0.90%	Eye (?)	1	0.10%
Anthropomorphic	5	0.60%	<b>TOTAL</b>	<b>884</b>	<b>100.00%</b>

#### 4.3.1 *Trefoil*

One of the defining iconographic motifs of the Chacahua phase is the trefoil icon (Figure 10). The trefoil is present at over half of the sites accounting for artifacts in the Chacahua phase grayware sample and appears on 14% of all graywares sampled. The tripartite structure of the icon makes it easily recognizable. Although there is a significant amount of variation in its form, the trefoil consists of two main parts: the outer, “tripartite” component, and the inner, “linear” component. Chatino potters likely made the design utilizing one of two methods. In the first method, the potter incised a narrow line using an implement with a point approximately 1-2mm in diameter to produce the outline of the outer platform, similar to drawing a picture in the sand at the beach. These outer lines ranged from .5mm to 2.5mm in width. In the second method, potters excised portions of the ceramic paste, creating the design in relief. Occasionally, potters utilized both methods to create the icon. Little evidence for standardization in the design of the icon exists. For example, potters created the “steps” that give the icon its tripartite character in a variety of ways. Designs with one step were most common, although some examples had five or more.



a.



b.



c.

Figure 10: Trefoil imagery on grayware conical bowls: (a.) Type 1 from Yugué, (b) Type 2 from Río Viejo, (c) Type 3 from Río Viejo

There is also some variability in the design of the inner component. I documented three variants of the inner component and designated them Types “1,” “2,” and “3” (Figure 10: a, b, and c, respectively). Type 1 displayed a single line with a curl, sometimes accompanied by an additional curled line or straight line. Type 2 exhibited two parallel, vertical lines without curls. Finally, Type 3 consisted of a continuous line or set of lines forming a “U” or “V” shape. Potters

likely made the inner component designs by making an incision using an implement similar to the first method described above, likely with a sharpened wooden stick, stone, or bone tool.

Clarity and visibility of the trefoil was vital to potters who inscribed this icon into the walls of grayware vessels. For example, of the 23 semispherical bowls in the sample exhibiting a carved trefoil, only one design was present on the interior of the pot, which may not have been visible by people other than the individual using the vessel. Similarly, the location of the trefoil icon on conical bowls depended on the base-to-wall angle of the pot. Of the 36 conical bowls with a trefoil icon, 17 contained an intact base and wall. Within those 17 vessels, the placement of the trefoil icon followed a similar pattern: if the base-to-wall angle was greater than approximately 60°, the trefoil glyph was present on the exterior of the vessel. Conversely, if the base-to-wall angle was less than 60°, the trefoil was present on the interior of the vessel. In both cases, the choice of the position of the trefoil motif depended on the location that would give maximum visibility (Table 6).

Table 6: Decorative location of trefoil icon (all types) on grayware bowls

<b>Bowl Forms</b>	<b>Exterior Decoration</b>	<b>Interior Decoration</b>	<b>Total</b>
Conical	11	22	33
Semispherical/Comp. Silhouette	17	1	19
Cylindrical	4	0	4
Plates	0	3	3
Indeterminate Form	1	0	1
<b>Total</b>	33	26	59

#### 4.3.2 *Volutes*

The volute icon is a pervasive motif in ancient Mesoamerican iconography and is present on Chacahua phase graywares from the lower Verde. Volutes are characterized by a horizontal line or band that ends in a curl turning either upwards or downwards. Fancy variants of the design exhibit an outlined band and curl, sometimes accompanied by an inner accent line and hash marks, whereas other designs were simple incised lines forming a continuous line and curl. In total, 18 of 457 (3.9%) graywares displayed volute iconography. Two were small ollitas from a cache at San Francisco de Arriba (99F-F36) and the remaining 16 graywares were serving bowls from sites around the lower Verde valley. The site accounting for the greatest number of vessels with this icon was Río Viejo (37.5%). Volutes predominantly appeared on semispherical and conical bowls, although one cylindrical bowl contained a volute design (Figure 11). The majority of volutes appeared on semispherical bowls (mean diameter, 18.5 cm) that were, on average, 16.2% larger than an average semispherical bowl.

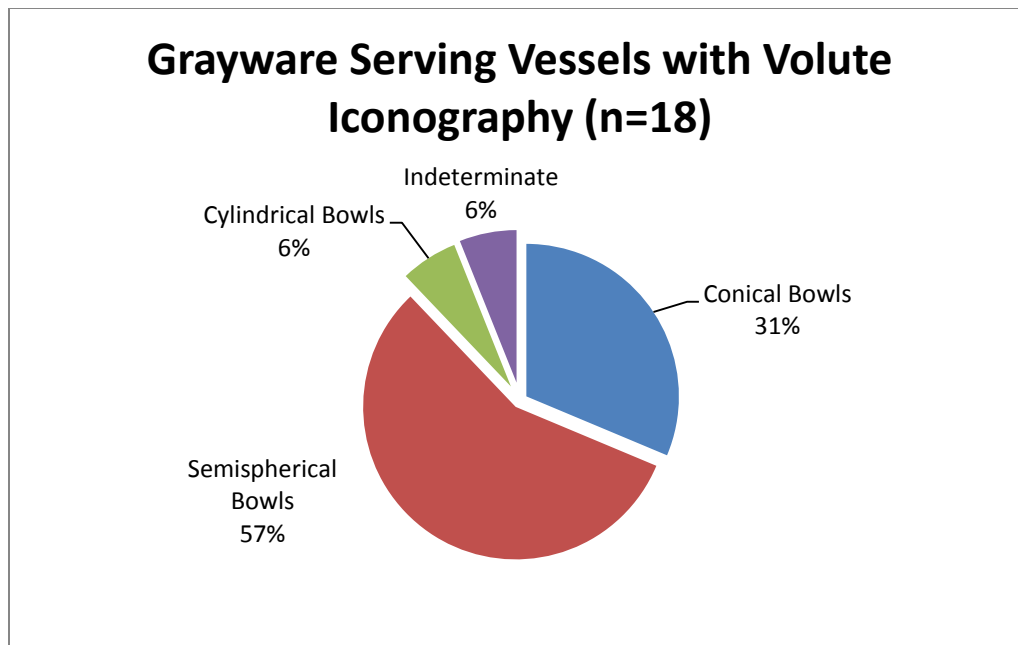


Figure 11: Graywares with volute icons

#### 4.3.3 Step Frets

The step fret designs on Chacahua phase graywares vary from simple to complex. The simple step fret (Type 1) appeared on 12 vessels (2.6%) and consisted of a rectilinear zigzag line extending down from the upper part of the vessel (Figure 12). Interestingly, all instances of the design run diagonally down and to the left, however it is unclear whether or not this indicates any level of standardization across the lower Verde. All examples of the simple step fret are associated with a single incised framing line extending around the exterior of the vessel, usually 2-3 cm below the rim. The design originates just under the line, indicated by a shallower depression of the incision that gradually becomes deeper as the design extends downward. No distinct pattern emerged from the distribution of vessels with simple step frets, although half of the vessels were conical bowls with exterior decorations.

Complex step frets (Type 2) appeared less frequently (less than 1% of all graywares). This design consists of an outlined set of two to three steps with an inner accent line. All examples of the complex step fret were found on semispherical bowls and were associated with spirals. Twenty-four instances of spiral designs were identified on vessels lacking the complex step fret. I associate these spiral designs tentatively with the complex step fret motif, as it is not quite clear what role they may have played in the construction of more complicated motifs or iconographic conventions. It is also worthy of note that the spirals share physical characteristics with the inner component of the Trefoil Type 1.

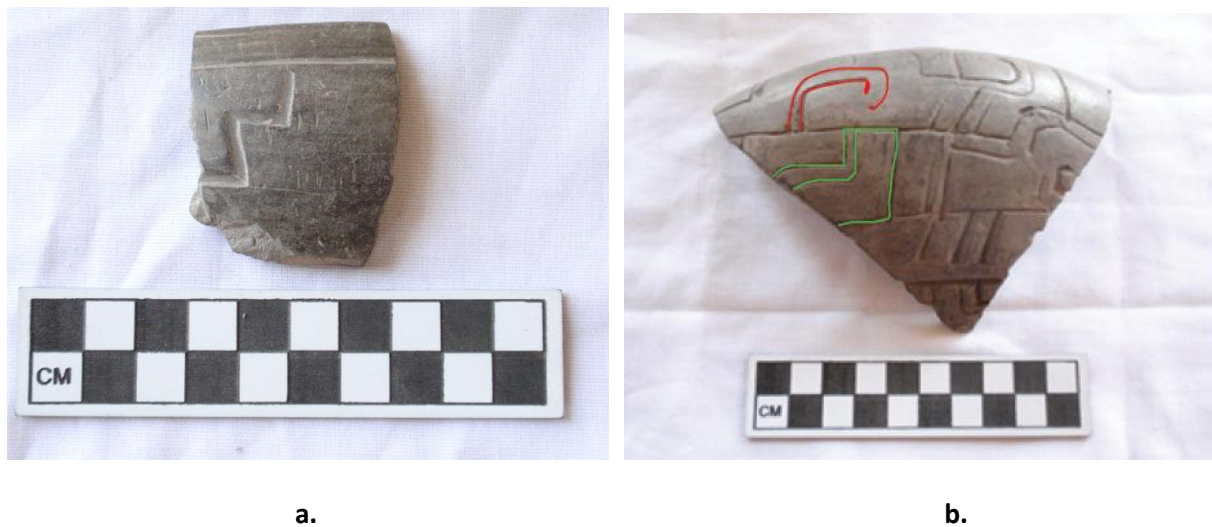


Figure 12: (a) Semispherical bowl with step fret motif; (b) complex step fret motif (green) with spirals (red)

#### 4.3.4 *Rectilinear and Curvilinear Arches*

Chatinos decorated a sizable proportion of graywares (9.6%) with arch designs in rectilinear and curvilinear shapes. I recognized four general types of arch designs, each of which had variants (Figures 12 and 14). Type 1 consisted of a simple rectilinear or curvilinear arch or set of arches oriented with the open side facing down toward the bottom of the vessel. Type 2

consisted of curvilinear arches with the open side facing up toward the vessel's opening. Type 3 consisted of designs similar to those in Type 1, only Type 3 arches also displayed one or two small lines extending down from the center of the arch and were oriented with the open side facing either up or down. Finally, Type 4 consisted of curvilinear, downward-facing arches with a singular punctuation (dot) underneath the arch. The majority of vessels with arch imagery were conical bowls (54.5%), followed by semispherical bowls (29.5%), cylindrical bowls (9.1%), jars (4.5%), and plates (2.2%) (see Table 7). Potters predominantly decorated vessels with arches on the exterior walls (Figure 13). Interestingly, Type 4 was only found at Barra Quebrada and only carved into highly stylized everted or outleaning rims. However, the vessels adorned with the Type 4 Arch motif may date to the early part of the Chacahua phase or even to a later period of the Miniyua phase (Barber 2010, personal communication).

Table 7: Grayware vessel forms with arch imagery

Arch Motif	Bowls				Jars	TOTAL
	Conical	Semisph.	Cylind.	Plate		
Type 1	13	5	0	1	2	21
Type 2	3	0	2	0	0	5
Type 3	8	5	2	0	0	15
Type 4	0	3	0	0	0	3
<b>TOTAL</b>	24	13	4	1	2	44



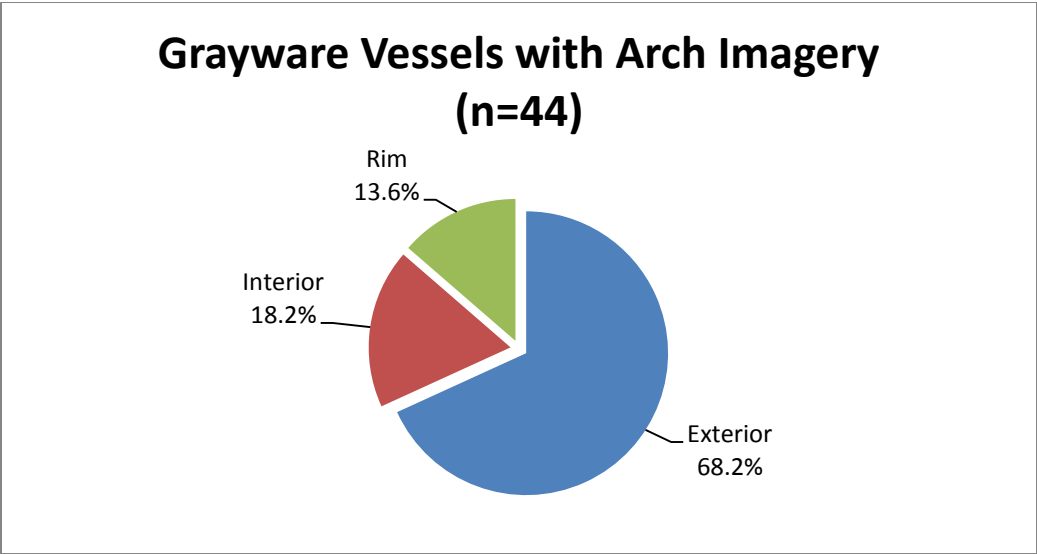


Figure 13: Decorative location of arch imagery on graywares

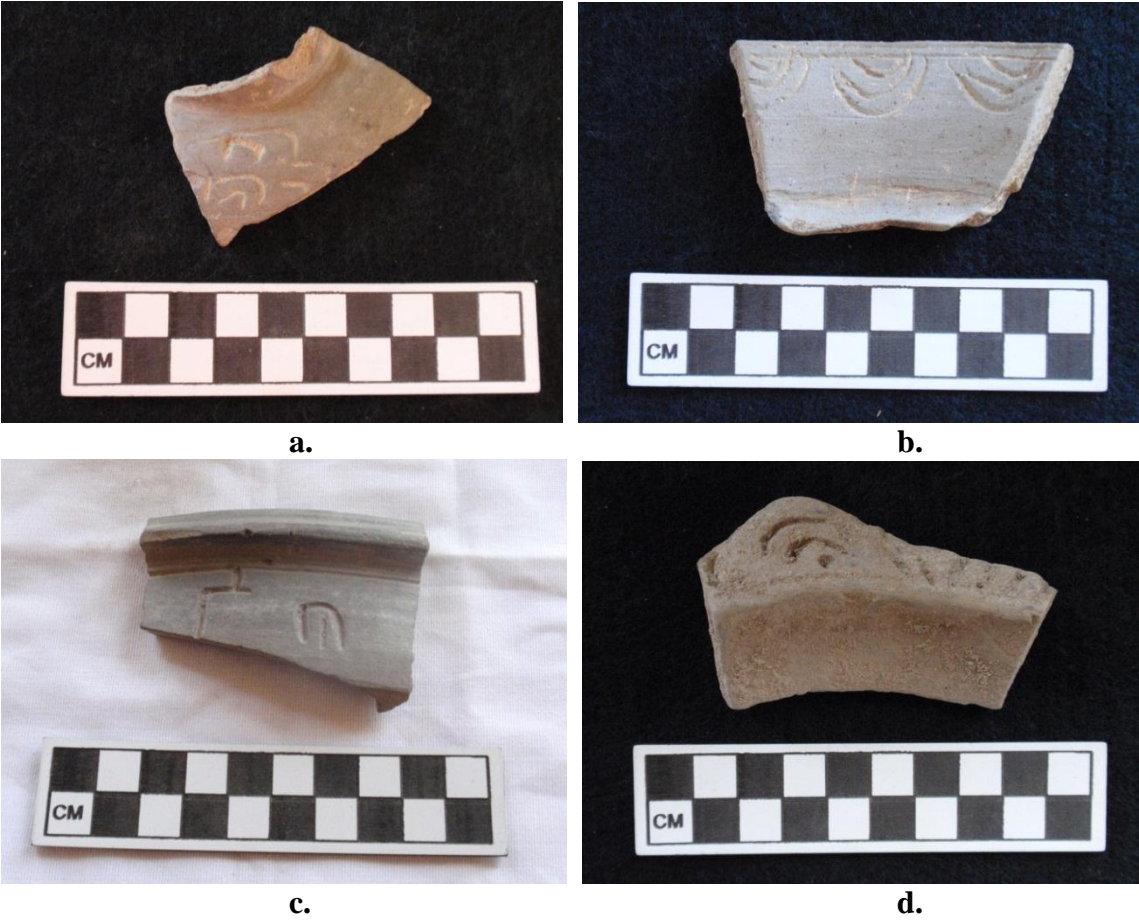


Figure 14: Arch imagery on Chacahua phase graywares: (a) Type 1, (b) Type 2, (c) Type 3, (d) Type 4

#### 4.3.5 *Lazy “S”*

The Lazy “S” motif, appearing in the form of the letter “S” turned on its side horizontally, represents one of the most common motifs in the entire assemblage (Figure 15). Lazy “S” designs appear on 67 of the 457 graywares, or 14.7% of the total sample. The motif appears almost exclusively on conical bowls (91%), with a small percentage occurring on semispherical bowls (6%) and bowls of indeterminate form (3%). The placement of the icon was uniform across the valley, as 100% of the manifestations of this motif occurred on the exterior of vessels. Several of the larger vessel fragments, particularly those with a significant portion of their bases preserved, demonstrated that the motif appeared on large outleaning or outcurving conical bowls with tetrapod basal supports. The average size of vessels with the Lazy “S” motif was 32.4 cm, a large value when compared to the distributions of vessels with other common iconographic motifs.



Figure 15: Conical Grayware Bowl with Lazy “S” Motif on Exterior

#### 4.3.6 *Hook Curves*

Hook curve designs—characterized by their rounded ends and long tails—resemble shepherds’ canes or long fishhooks (Figure 16). The designs are always oriented horizontally in

the same plane as the vessel orifice and can be found alone or in pairs. The motif is similar in basic appearance to the volute design, although hook curves lack the interior accent lines and outlined structure of volutes. In addition, hook curves never appear in association with anthropomorphic designs. Instead, they often appear inside a frame made by one or two upper framing lines and one lower framing line, without any other discernable icons. The motifs (both single and double hook curves) occurred on 6.1% of sampled graywares, and all but one design (96.4%) occurred on the exterior of the vessel.



Figure 16: Hook Curve motif on semispherical bowl from Yugüe

#### 4.3.7 “Crab Claw”

The “Crab Claw” motif appears on a total of 22 graywares, or 4.8% of the sample. Potters carved this motif using an implement with three to four sharpened points, possibly a carved wooden tool, group of sharpened sticks, or a brush with coarse bristles (Figure 17). The average diameter of vessels with the crab claw motif was 16.6 cm, a smaller value than most iconographic graywares, likely caused by large proportion of semispherical bowls displaying the icon. The majority of crab claw designs occur on semispherical bowls (71%), with a smaller proportion occurring on conical (19%) and cylindrical (10%) bowls.



Figure 17: “Crab Claw” motif on Semispherical bowl from Río Viejo

#### 4.3.8 *Architecture*

Only two sampled graywares have decorations with architectural characteristics, but the complexity of the designs on the artifacts warrants special attention (Figure 18). The architectural elements of the designs come in the form of stepped pyramids or structures excised within a panel formed by two incised lines. The first example, a beautifully carved conical bowl from a domestic midden at Río Viejo (RV95-Op C), displays a series of stepped structures (probably pyramids) with linear incisions or pairs of incisions. One structure, however, contained a curvilinear “blob-like” design on its interior that, as of yet, cannot be identified. Emanating from this unknown structure is a design that shares characteristics with the greca and spirals that make up complex step fret designs similar to grayware vessels from the Valley of Oaxaca (Caso et al. 1967). Alternatively, the design may share characteristics with volute imagery, particularly the pairs of hash marks below the horizontal band of the design that also appear on many volute examples. The other example comes from Cerro de la Cruz and displays two step pyramids (of nearly identical form to the former example) on a small, thin-walled plate.



a.



b.

Figure 18: Architectural motifs on: (a) conical bowl from Río Viejo (b) small plate from Yugué

#### 4.3.9 Zoomorphic

The use of animal imagery is ubiquitous in precolumbian Mesoamerican art. During the Chacahua phase in the lower Verde, however, the use of animal imagery may have been restricted. Distinctive zoomorphic characteristics appear on only eight (.03%) of the 457 artifacts in the Chacahua phase grayware sample (Table 8). The nature of each artifact indicates

that Chatino potters used animal imagery on only the fanciest vessels. For instance, an ollita from a Chacahua phase vessel cache at San Francisco de Arriba displays an elaborately carved bird associated with volutes. Archaeologists rarely find ollitas, but when found they are often interred as part of a larger offering in a cache or burial. Carved basal supports dating to the Chacahua phase are also quite rare, as potters typically used conical basal supports. Zoomorphic icons are discussed in more detail in Chapter 5.

Table 8: Artifacts with Animal Imagery

Site	Artifact Type	Animal Depicted
Río Viejo	Applique	Monkey?
Río Viejo	Applique	Feline?
Río Viejo	Carved Basal Support	Bird (or Bird-Snake?)
Yugüe	Incised Jar	Bird
Yugüe	Carved Basal Support	Bird
Yugüe	Semispherical Bowl	<i>Xicani</i> (mask)
San Francisco de Arriba	Ollita	Bird
Charco Redondo	Semispherical Bowl	Deer

#### 4.3.10 Feathers

Bird feathers were one of the highest valued commodities among ancient Mesoamerican cultures, often distributed to elites to mark their elevated status (Blanton and Feinman 1984). Chatinos also carved depictions of feathers into graywares during the Chacahua phase. Only three graywares definitively depicting feathers were observed in the sample, a mere .3% of the total. This may indicate that, like vessels carved with zoomorphic imagery, distribution and use of feather iconography was limited and perhaps restricted. All examples occur on small, thin-walled plates with diameters under 15 cm (Figure 19).



Figure 19: Grayware plate with feather imagery from Río Viejo

#### 4.3.11 Anthropomorphic

Sampled graywares decorated with human characteristics occurred less frequently than graywares carved with zoomorphic imagery. All instances were observed on the interior of highly divergent conical bowls, except for one example from Río Viejo, which occurred on a small, elaborately carved plate (see Section 4.2.3 for description of this vessel type) and another example from Yugué, which occurred on a semispherical bowl. Although the number of anthropomorphic design motifs is quite small (less than 1% of sample,  $n=4$ ), it appears that Chatinos were not attempting to depict *specific* individuals on graywares during the Chacahua phase (Figure 20).



**a.**



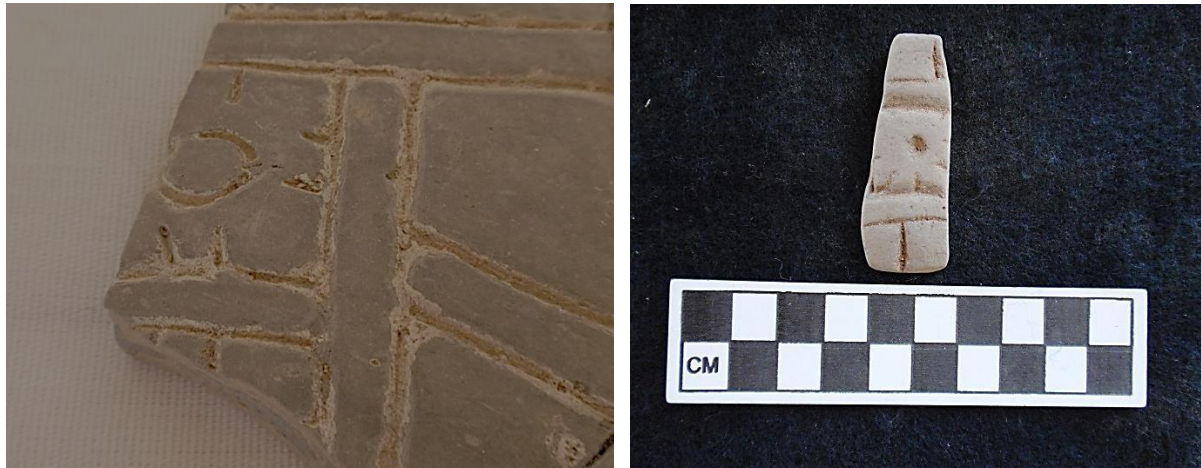
**b.**

Figure 20: Graywares with anthropomorphic designs from Cerro de la Cruz, a.) skulls b.)human face in profile

#### 4.3.12 *Stamp Box*

Although it appears on only two graywares (.2%), the stamp box icon looks fundamentally different from any other icon in the assemblage (Figure 21). The basic structure of the icon is an incised square outlining a circle, which was either impressed or carved. Surrounding the circle are various lines or tick marks, all of which are incised and appear to be oriented above, below, and to the left and right of the circle. The icon appears on a large jar from Yugiue and an eroded vessel (indeterminate form) from San Francisco de Arriba.





**a.**

**b.**

Figure 21: (a) Jar with stamp box motif from Yugüe, (b) Vessel (indeterminate) with stamp box from San Francisco de Arriba

#### 4.3.13 *Grouped Rectangles*

Rectangular designs appeared in variously organized groups and patterns on eight (.9%) of the graywares (Figure 22). The rectangles were most often oriented vertically, lining up in a row from rim to the base on six semispherical bowls. One grayware fragment displayed a series of excised rectangles inside a rounded outline on a vessel of indeterminate form. Finally, one small, thin-walled plate was carved with concentric bands of squares running within 3 cm of the rim. Of bowls for which vessel form could be assigned, all designs occurred on the exterior of semispherical bowls except for the small plate, which was carved on its interior.



**a.**



**b.**



**c.**

Figure 22: (a) Vertically aligned rectangles, (b) Rectangles inside enclosure, (c) Rectangles in circle

#### 4.3.14 Summary

A wide array of icons appears on pottery during the Chacahua phase. Chatino potters not only constructed vessels for serving foods, but also made art. I argue that some of the icons described in the preceding sections were meant to connote specific concepts that were important during this period; these ideas will be elaborated in the next chapter. Clearly, some icons occurred more frequently than others did, which may signify particular levels of popularity or

relevance to Chatinos who would have viewed them. In the next section, I examine the motif distribution among several sites in the lower Verde, eliciting patterns in the diversity of icons at each site.

#### 4.4 ICONOGRAPHIC PATTERNING IN THE LOWER VERDE

To observe general patterns in the ceramic iconography of the Chacahua phase, I employ statistical measures of diversity to analyze data from the grayware sample. On the most basic level, diversity analyses address research problems involving the comparison of two or more sets of related data, particularly questions referring to the variability expressed by one of three properties—*richness*, *evenness*, and *heterogeneity* (McCartney and Glass 1990). In this section, I describe the specific methodologies used to carry out each statistical measure and present the results of these analyses as they pertain to the Chacahua phase grayware sample. Each statistical measure has specific applications and limitations (see Chapter 3), so it is important to keep these advantages or disadvantages in mind when examining sets of data.

Table 9: Design Motifs (Richness) on Graywares by Site

MOTIF	BQ	CC	VR*	RV	SF	YG	TOTAL
Rectilinear	1	11	1	24	2	17	58
Curvilinear	1	5	3	20	3	18	51
Upper Framing Line	21	22	5	64	17	55	194
Two Upper Framing Lines	5	6	3	32	2	5	55
Vertical Line	1	1	0	5	1	4	12
Two Vertical Lines	0	1	1	5	0	2	9
Three Vertical Lines	0	1	1	5	0	2	9
Lower Framing Line	9	8	1	25	5	10	61
Two Lower Framing Lines	1	1	1	4	0	3	10
Vertically-Aligned Horizontal Ticks	0	3	0	2	0	3	9
Coupled Sets of Diagonal Lines	0	4	11	0	8		25
Step Fret	1	3	0	4	1	3	12
Volute	1	1	1	5	2	6	18
Bifurcated Tongue	0	0	0	0	0	1	1
Feathers	0	1	0	2	0	0	3

Arch Type 1	2	3	1	8	3	3	21
Trefoil Type 1	5	2	1	11	5	9	38
Rays	0	0	0	0	0	0	1
Crab Claw	3	1	0	17	0	3	24
Hook Curves	1	1	0	5	0	1	9
Pair of Hook Curves	2	2	0	5	1	9	19
Curly Q	0	1	0	1	0	0	2
S-Curves	22	1	0	33	3	7	67
Alternative S-Curves	0	1	0	3	0	3	7
Woven Basket	0	2	0	0	1	0	3
Grouped Rectangles	0	1	0	2	2	2	8
Zoomorphic	0	0	0	3	1	2	6
Anthropomorphic	0	2	0	1	0	2	5
Anthropo-zoomorphic	0	0	0	0	0	1	1
Xicalcolihqui Spirals	0	4	2	9	5	8	28
Architecture	0	1	0	1	0	0	2
Notches below Rim	1	1	0	3	1	1	7
Notches on Rim	0	0	1	4	0	1	6
Notches around Base	0	0	0	2	0	0	2
Basal Punctuation	0	0	0	1	0	0	1
Diagonal Lines	0	0	1	1	1	4	7
Bandera	2	3	0	2	1	1	10
Crosshatch	1	0	0	4	1	1	7
Heart Glyph	0	0	0	1	0	0	1
Waves	0	0	0	1	0	2	3
Stamp Box	0	0	0	0	1	1	2
Fork Glyph (?)	0	0	0	1	0	0	1
Diagonal Lines in Triangle	1	0	0	1	1	0	4
Paired S-Curves	0	2	0	2	1	0	5
Stylized Cloud	0	0	0	1	0	0	1
Rim Punctations	0	0	0	1	0	0	1
Wall Punctations	0	0	1	4	0	2	8
Arch Type 2	0	1	0	4	0	0	5
Arch Type 3	3	2	0	2	0	5	15
Arch Type 4	3	0	0	0	0	0	3
Trefoil Type 2	3	1	0	1	0	2	8
Trefoil Type 3	0	1	1	7	4	0	13
Complex Step Fret	0	2	1	1	0	0	4
Arrow	0	1	0	0	0	0	1
RE Glyph (?)	0	0	0	0	0	1	1
S (Richness)	22	36	18	46	25	36	
<b>TOTAL</b>	90	104	37	340	73	200	884

Problems of sample size are perhaps the greatest obstacles one must overcome to use measures of diversity effectively to interpret archaeological data. The issue is often two-fold. First, biologists and ecologists dealing with very large population sizes originally developed many of the equations used to calculate diversity. Statistically, measures of diversity reach their peak level of performance when the population of a variable is infinite (Bobrowsky and Ball 1984). For biologists, this is typically not a problem because the processes of reproduction in, say, an animal or plant species provide replacement of the species at a measurable rate. Archaeologists, on the other hand, must deal with finite population sizes and subsequently must approximate individual category probabilities. Although many scholars have debated the issue of what an adequate sample size might look like (Bobrowsky and Ball 1989; Kintigh 1984, 1989; McCartney and Glass 1990; Rice 1984), none proffers an actual value. Second, archaeologists often compare assemblages from different intra-site or inter-site contexts to explore patterns in material culture. More often than not, sample sizes between assemblages vary, sometimes considerably. Thus, it is essential for a researcher to know that the variation observed and quantified through diversity statistics is the result of cultural processes rather than a factor of sample size.

To approach this problem, Kintigh (1989) suggests employing measures of relative diversity, examining the difference between an observed value and an expected value for a given sample size. For example, Río Viejo accounted for over four times as many artifacts as San Francisco de Arriba and 42% more motifs than the site with the next highest total, Yuguë. Following Kintigh's reinterpretation of Conkey's Magdalenian data, I used Microsoft Excel® to carry out Monte Carlo simulations, generating expected values of richness for a given range of

sample sizes. The expected values essentially predict the motif richness for all sites in the lower Verde based on aggregate probabilities of individual motifs carved on the sampled graywares.

To carry out this statistical analysis, I assigned each motif a number from 1 to 54 and calculated the probability ( $p_i$ ) that each motif may be randomly selected from the total pool of motifs in the grayware assemblage (884 total motifs) (see Table). Motif probabilities met two criteria: first,  $0 \leq p_i \leq 1$  for all  $i$ , and second, all probabilities ( $p_1 + p_2 + \dots + p_k$ ) cumulatively added up to 1. Next, I assigned each motif a range of values in a cumulative frequency distribution (each probability value adds upon the previous value from 0 to 1) and arranged them in a table. For example, if hypothetical motifs 1, 2, and 3 accounted for 12%, 10%, and 15% ( $p_1 = .12$ ,  $p_2 = .10$ , and  $p_3 = .15$ ) respectively, then the value ranges assigned to them would look something like this:

- $0 < \text{Motif 1} \leq .12$  (Motif 1 accounts for all values less than or equal to .12)
- $.12 < \text{Motif 2} \leq .22$  (Motif 2 accounts for all values greater than .12 and less than or equal to .22)
- $.22 < \text{Motif 3} \leq .37$  (Motif 3 accounts for all values greater than .22 and less than or equal to .37)

The table formed from the cumulative frequencies of motif probabilities is essentially the “heart” of the simulation procedure.

In the next step, I simulated motif assemblages based on the aggregate motif probabilities assembled in a cumulative frequency table based on the rules described above. To simulate the theoretical assemblages, I used the random number generator function (RAND) in Microsoft Excel®. The RAND function randomly generates a number greater than 0 and less than 1, functioning along the same lines as a random number table. I matched the numbers generated from this function to the range of values (and the appropriate Motif type) within which they fell.

For instance, if a particular random number generated by the RAND function were .0556733, then it would fall within the range of Motif 1 described in the former example. I repeated this process until the number of motif simulations needed to complete one theoretical sample was reached. For example, to obtain a theoretical sample of 20, I generated 20 random numbers, all of which fell within certain motif probability ranges, recording the appropriate motif number in the adjacent column. Naturally, the simulations generated motif types with larger probabilities more often than motif types with smaller probabilities, so it was common to see some motif types multiple times within one sample.

The goal of the simulations is to quantify the amount of diversity (in this case, *richness*) to be expected in a theoretical sample of a given size. Again, richness is the number of different motifs observed within a given population of objects (in this case, *motifs*). To obtain an expected value of richness, I tallied the total number of different motifs for each trial of a given sample size. McCartney and Glass (1990) note that it is necessary to find the mean of a simulated set of samples, as it is an estimate of the true expected diversity for a given sample size. This estimate is unbiased because it is randomly simulated and the standard error is usually low as long as a sufficient number of trials are run. McCartney and Glass, following Kintigh (1984), suggest runs of 500 trials for each sample size. Therefore, the process of randomly generating a series of numbers, matching those numbers to certain motif types based on cumulative probability ranges, and tallying the number of different motifs generated for the trial was replicated 500 times for each sample size, producing a normal distribution of richness values for each sample size.

Next, I calculated the mean richness and standard deviation of the 500 trials simulated for each sample size. Mean richness values were plotted on a graph as the dependent variable, and

simulated sample size values were plotted as the independent variable. In addition, a 95% confidence interval was plotted based on the standard deviation of the mean richness for each simulated sample size. As a rule, approximately 95% of values within a population are considered to exist within two standard deviations of the mean. Therefore, the upper confidence interval plots values that are two standard deviations greater than the mean for each simulated sample, and the lower confidence interval plots values that are two standard deviations less than the sample mean.

It is in the methodology described above that I diverge slightly from the methodology employed by Kintigh. Kintigh rounds the mean richness values and confidence intervals to the nearest integer value because he argues that richness values increase or decrease in steps of 1.0. I argue that, although this methodology takes into consideration the integral nature of the richness statistic, it masks the effectiveness of calculating the mean richness of a simulated sample by incorporating unnecessary amounts of additional error. It is clear that the method used in this thesis results in an approximation of the sample mean, so fractional values need not be rejected. Additionally, Kintigh calculates the confidence interval for Conkey's Magdalanian diversity data by tabulating the cumulative frequencies of each simulated sample mean by determining the number of values between which approximately 80% of the trials fell. Thus, approximately 10% of the expected values were below the lower tail and 10% were above the upper tail (Kintigh 1989: Fig 4.8). I argue that the methodology elaborated by McCartney and Glass (1990) and used in this thesis, illustrates a more statistically sound methodology for accepting or rejecting a null hypothesis.



For this section of the study, the null hypothesis states that all observed samples (or, the assemblages from Río Viejo, Barra Quebrada, Cerro de la Cruz, San Francisco de Arriba, and Yugüe) were derived from the same population. In other words, rejecting the null hypothesis would indicate that the assemblages of sites in the lower Verde were sufficiently diverse to suggest that access to pottery with certain motifs or icons was not uniform. To determine whether the null hypothesis is accepted or rejected, I turn to the data presented in the graphs below. Following McCartney and Glass (1990), I interpret a value above the middle line (simulated mean richness) to indicate a greater than expected richness and a value below the middle line to indicate less than expected richness (Figure 23). Values above the upper confidence interval line exhibit a substantially greater than expected richness and values below the lower confidence interval line exhibit a substantially lower than expected richness. I consider any values outside the 95% confidence interval to be statistically significant.

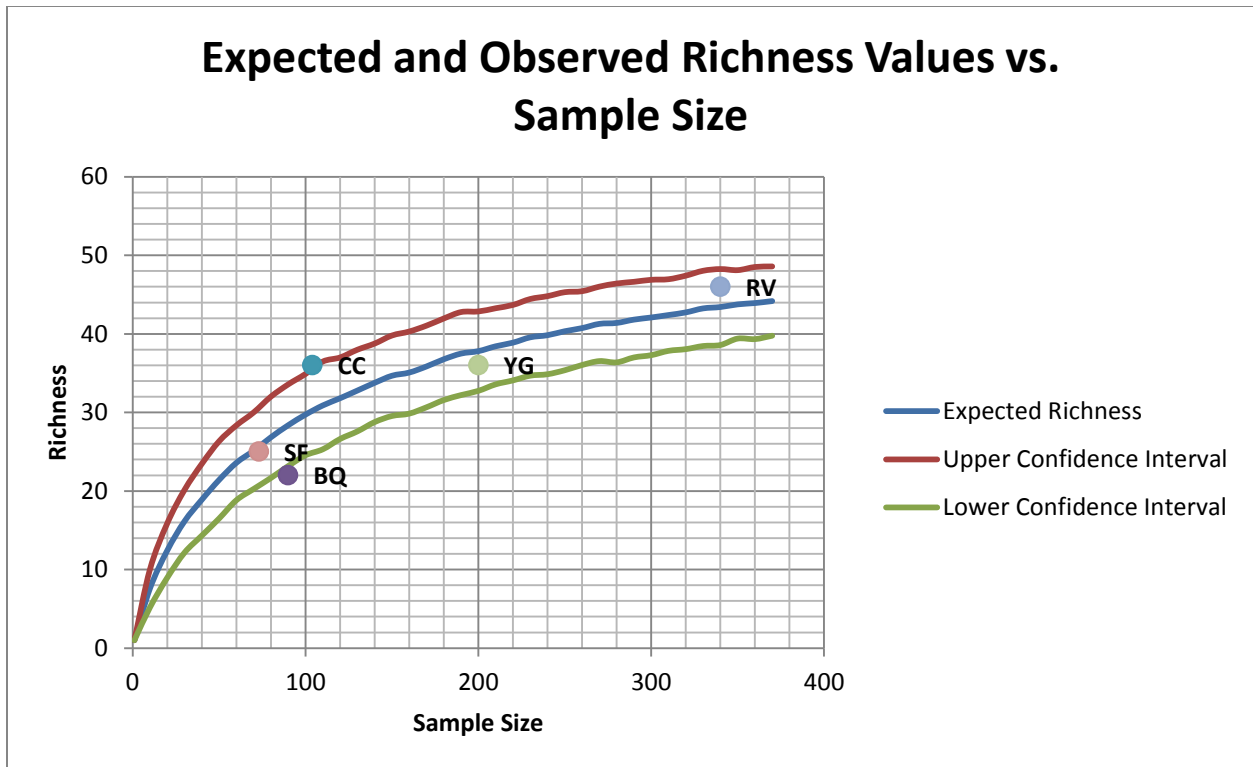


Figure 23: Observed and Expected Diversity in the lower Verde

As expected, the observed richness of the Río Viejo assemblage was greater than the expected richness for a sample size of 340 motifs. However, the value fell within the confidence interval band. This may indicate that the richness of motifs in the Río Viejo assemblage is not substantially larger than the expected value, and therefore not statistically significant ( $p = 0.05$ ). The observed richness at Cerro de la Cruz, however, was substantially greater than the expected value for a sample size of 106 motifs. All other sites exhibited a richness value below expectations, including secondary center, San Francisco de Arriba, and tertiary center, Yuguë. Finally, motif richness for the Barra Quebrada assemblage was substantially lower than expected at a sample size of 90 motifs; this was also statistically significant ( $p = 0.05$ ).

Analyses of motif richness need not be limited to site-to-site comparisons. Comparing the richness of motifs on different vessel forms may shed light on the way Chatinos used iconography to spread ideologies. Motif richness values in the assemblages of conical, semispherical, and cylindrical bowls were plotted using the same methodology as the preceding example to determine if certain types of vessels were used differently to communicate ideas. First, the richness of conical bowl motifs (42) fell substantially below the expected value for a sample size of 428. Richness of cylindrical bowl motifs (19) also fell below the expected value for a sample size of 47 but was within the confidence interval (Figure 24). Finally, the richness in motifs on semispherical/composite silhouette bowls (42) was slightly above the expected richness, although this value was also within the confidence interval. All values for observed richness fell within the confidence interval, suggesting a level of standardization existed in the placement and distribution of unique design motifs on various forms of pottery in the lower Verde.

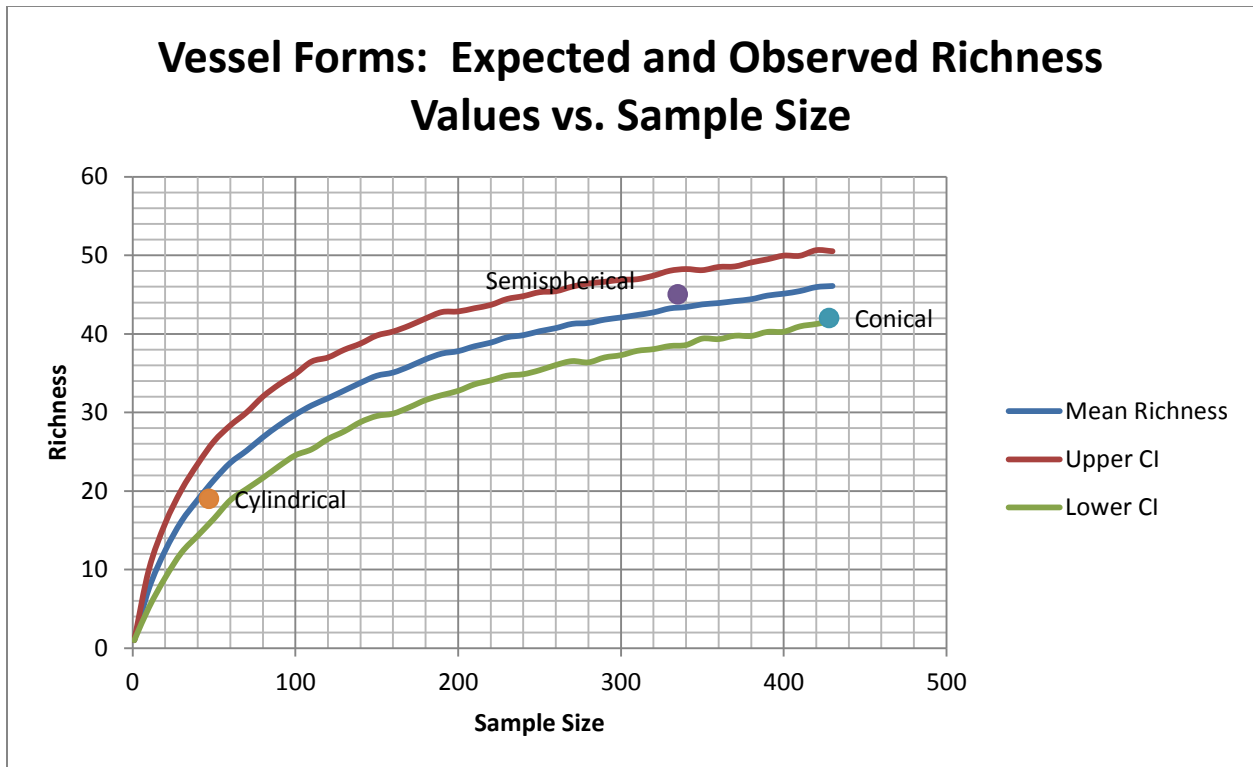


Figure 24: Expected and Observed Richness Values vs. Sample Size

To examine the heterogeneity of motifs between lower Verde sites, I calculated the Simpson index ( $H$ ) and Shannon index ( $H^1$ ) for the five sites included in the analyses above. The Simpson index defines the probability that a *different* motif is encountered when selecting a motif at random. Therefore, assemblages with small  $H$  values are more diverse than assemblages with larger  $H$  values are. The Shannon index is a particularly useful gauge of diversity in an assemblage because it takes into account both richness and evenness ( $E$ ). For example, the value of the index increases with every additional unique category (motif) or by having a greater evenness among categories (motifs). For this study, the greatest  $H^1$  value belonged to the assemblage from Río Viejo (3.08), indicating the greatest amount of diversity per individual artifact (Table 10). Because sample size partly influences  $H^1$ , it is necessary to demonstrate that

sample size is not the only factor at work. The motif distribution from Río Viejo has an evenness value of .51, the lowest value of any site mentioned above. Therefore, motifs from Río Viejo spread less evenly among the categories than the assemblages from the other sites are, in effect *decreasing*  $H^1$ . The sites with the next highest grouping of  $H^1$  values were Cerro de la Cruz (3.07) and Yugüe (2.82). Some of the most elaborate imagery on Chacahua phase graywares comes from Cerro de la Cruz and Yugüe, both of which are located closer in distance to Río Viejo than the remaining two sites, San Francisco de Arriba and Barra Quebrada, both of which have smaller  $H^1$  values. The Simpson index (H) followed a similar pattern. The sites accounting for the lowest H values (lowest probability that two random motifs selected would fall into the same category) were Cerro de la Cruz and Río Viejo. San Francisco de Arriba and Yugüe accounted for the next highest set of H values, and Barra Quebrada accounted for the highest value (.129), nearly double the value for Cerro de la Cruz (.069).

Table 10: Diversity calculations for grayware assemblages

Site	$H^1$	H	E	Motifs per Object
Barra Quebrada	2.44	.129	0.54	1.84
Cerro de la Cruz	3.07	.069	0.66	2.26
Río Viejo	3.08	.072	0.53	1.91
San Francisco de Arriba	2.78	.081	0.65	1.83
Yugüe	2.89	.101	0.54	1.89

With this pattern in mind, I plotted the  $H^1$  and H values and distance (Figures 25 and 26) from Río Viejo for every site to determine whether the variables correlated. The variables  $H^1$  and distance have a strong negative correlation, producing a correlation coefficient ( $R^2$ ) of .7308, a p-value of  $p \leq .08$ , and a regression equation of  $y = -.028x + 3.076$ . I interpret this strong

negative correlation to indicate that as distance away from Río Viejo increases, the diversity of iconographic motifs at sites in the lower Verde decreased. This may indicate that people at Río Viejo (including people of high status) were disseminating ideas for iconographic decorative motifs on graywares, if not the graywares themselves, during the Chacahua phase. Less of a correlation existed between the variables H and distance. Regression analysis produced the following linear equation and correlation coefficient:  $y = 0.0018x + 0.0761$ ;  $R^2 = 0.3394$ , and  $p \leq .288$ .

Table 11: Distance from Río Viejo vs. Diversity Indices

<b>Site</b>	<b>Distance from RV (km)</b>	<b>Shannon Index (<math>H^1</math>)</b>	<b>Simpson Index (H)</b>
Río Viejo	0	3.08	.072
Cerro de la Cruz	2	3.07	.069
Yugüe	5	2.89	.101
Barra Quebrada	16	2.44	.129
San Francisco de Arriba	17	2.78	.081

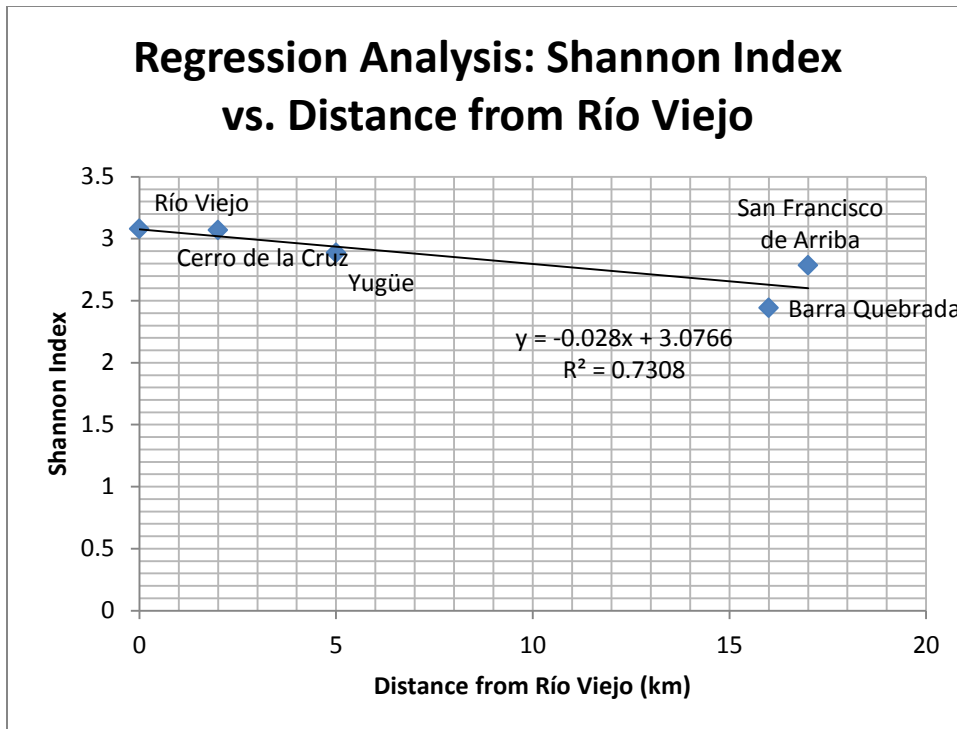


Figure 25: Regression Analysis: Shannon Index vs. Distance from Río Viejo

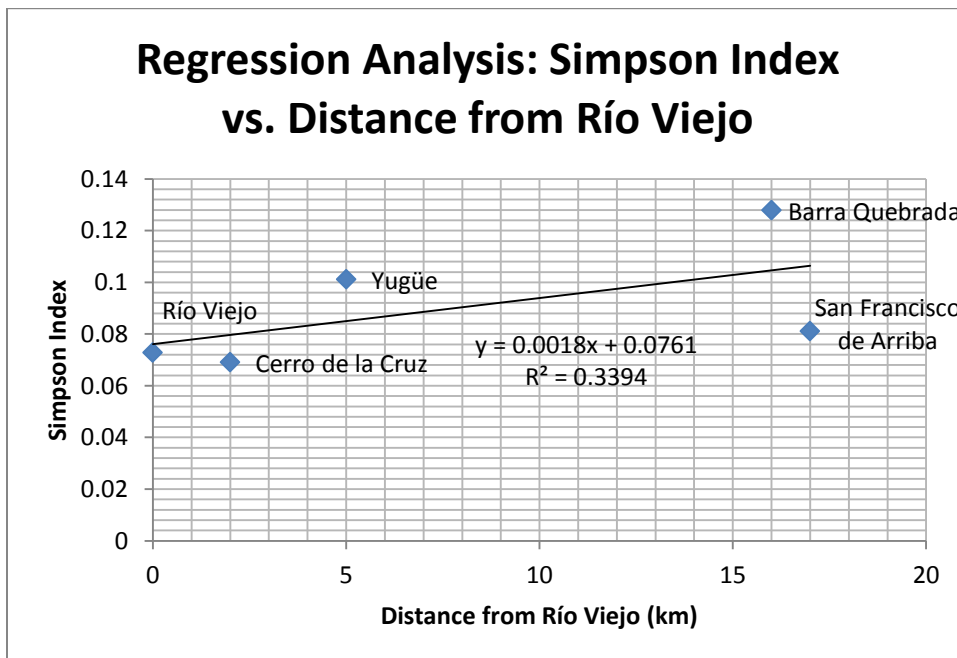


Figure 26: Regression Analysis: Simpson Index vs. Distance from Río Viejo

#### 4.5 SUMMARY

The data and analysis presented in this chapter reinforce Joyce's (1991) argument that Chatinos predominantly used graywares as serving vessels during the Chacahua phase. Graywares were elaborately decorated, highly burnished, portable, and the appropriate size for use in events where food was shared. The sample only includes vessels and sherds with elaborate plastic decorations (i.e. decorations more complex than simple framing lines), thus we can begin to piece together the purpose and meaning of the ceramic iconography. First, icons incised into grayware bowls were meant to be seen. While they would not have been as visible as some ancient art, such as the architectural stucco masks found at Caracol, Belize, or the carved *danzantes* from Building L-sub at Monte Albán, ceramic icons from the lower Verde were indeed placed in positions that would have been easily seen by those included in the ritual activities during which the vessels were consumed. Chatino potters frequently carved the icons on the exterior of most vessels and on the interior of highly divergent conical bowls. Second, almost 90% of vessels included in the sample were bowls, further indicating their intended use in ritual activities such as feasting and caching events.

Given the critiques of using diversity indices to measure diversity in an archaeological sample (see Bobrowski and Ball 1989), conclusions made here must be weighed tentatively. However, certain patterns begin to emerge in the archaeological data. First, I interpret a greater amount of diversity in iconographic motifs to signify an environment in which a great deal of communication was occurring via ceramic decorations. The sites with the greatest amount of diversity, according to calculations of  $H$  and  $H^1$ , were Río Viejo and the smaller site of Cerro de la Cruz. The diversity in motif types appears to decrease with respect to distance from Río



Viejo. While the diversity of motifs does not appear to be standardized among sites in the lower Verde, there does appear to be a level of standardization in the diversity of grayware vessel forms on which motifs were found. The richness of motifs on conical, semispherical, and cylindrical wall bowls all fell within the 95% confidence interval for expected motif frequencies in the valley. This may indicate that there was no restriction to the number of motifs that could appear on any given vessel type. I make some preliminary interpretations of the types of ideas certain motifs may have signified to Chatinos in the next chapter, keeping in mind that graywares recovered from various sites in the lower Verde were found in different types of contexts.

## CHAPTER 5: ICONOGRAPHIC INTERPRETATIONS

### 5.1 INTRODUCTION

In the preceding chapters, I have argued that during the late Terminal Formative Period Chatinos used pottery, particularly fancy serving vessels, as a medium to communicate ideas through symbolic representations of important ideological concepts. These symbolic representations materialized as iconographic plastic decorations carved on graywares, which ranged from complex portrayals of animals, people, buildings and objects to simple, abstract designs. In this chapter, I offer interpretations of the most common icons, as well as interpretations of unique imagery found on graywares. Recently, scholars have used ethnohistoric documents and indigenous codices to interpret iconography from the coast of Oaxaca (see Forde 2006; Jennings 2010). However, the deep distance in time between the Chacahua phase and the earliest indigenous texts and ethnographies prevent using these sources with confidence to identify particular. Therefore, this study relies on interpretations of ceramic iconography from other areas of ancient Oaxaca, particularly Zapotec material culture from the Valley of Oaxaca.

### 5.2 VEGETATION

The tripartite structure of the lower Verde trefoil motif appears to be part of a broad Mesoamerican iconographic tradition of representing vegetation in art (Figure 27). The depiction of agricultural themes in the iconography of precolumbian cultures is a pan-Mesoamerican tradition (Lesure 2004; Schele and Freidel 1990; Taube 1996, 2000). Maize was perhaps the most important crop in Mesoamerican subsistence strategies because it was relatively simple to grow and maintain, could be ground into flour to make a wide array of foods, and was

easily stored for future consumption in the event farmers generated surpluses (Bellwood 2006). Maize agriculture was widely adopted by Mesoamerican peoples early in the Formative Period during which the Olmec culture of the Gulf Coast of Mexico thrived.

While scholars continue to debate the level of influence the Olmec had on developing complex societies in Mesoamerica (Blomster 2002), it is clear that Olmec culture was at the heart of numerous rituals, beliefs and worldviews considered today to be pan-Mesoamerican. In fact, the Olmec developed an elaborate system of belief and ritual surrounding maize early in the Formative Period (Taube 1996). Taube argues that Olmec God II, a deity that appears in iconography carved on jadeite celts from numerous Olmec sites, is in fact the Olmec Maize God. Figure 26 shows two jadeite celts from the Gulf Coast decorated with the bust of the Olmec Maize God in profile. The detail that perhaps sticks out the most in these depictions is the cob of corn growing out of the cleft of the Maize God's head. Taube argues that the entire head of God II is an ear of maize (Taube 1996); alternatively, Joyce Marcus (1989) has argued that the cleft in God II's head represents the earth from which maize grows.



Figure 27: Various depictions of the Trefoil motif in the Chacahua phase grayware sample.

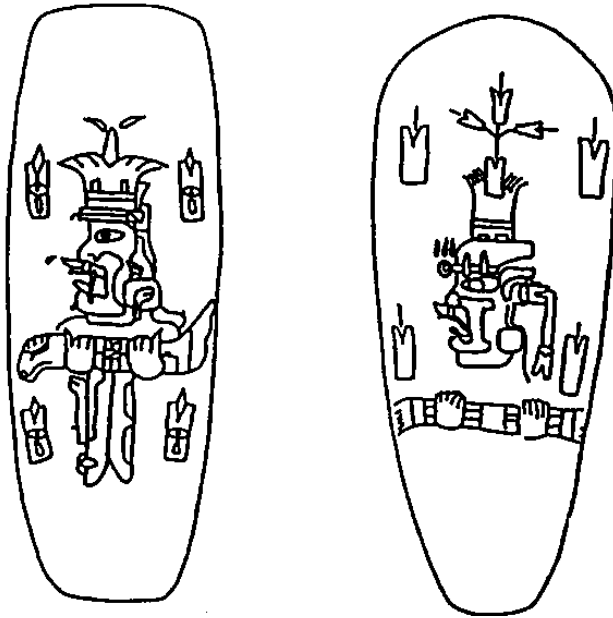


Figure 28: Depictions of the Olmec Maize God carved onto jadeite celts from Arroyo Pesquero (notice the budding maize plant atop the Maize God's head).



Figure 29: Olmec Motif 89 (drawing by Karl Taube (1996) after Joralemon 1971).

While interpretations of some of the semantic details regarding the Olmec Maize God remain elusive, the structure of the maize imagery on Olmec celts may be a precursor to

vegetation imagery from later Mesoamerican cultures, including the Terminal Formative Chatino from the lower Verde. First, the section of the design depicting a cob emerging from the cleft in the Olmec Maize God's head is often represented by a trefoil maize ear (Joralemon 1971). Taube (1996) argues that the trefoil is, in fact, a sprouting ear of maize. Chatino potters may have structured their trefoil (what I call the "outer component" of the lower Verde trefoil motif in Chapter 4) to represent a similar concept concerning the germination of ears of maize. The basic structure of the Chatino trefoil motif, the hill-like platform with three "lobes," mirrors the Olmec trefoil maize ear. Joralemon (1971:32-33) identified several motifs he preliminarily identified as representing maize. In particular, motif 89 (Figure 29) displays a tripartite structure similarly to the Chatino trefoil. However, Chatinos did not stylize the trefoil design to mirror the physical appearance of a budding ear of maize to the extent that the Olmec did.

Similar trefoil designs associated with maize iconography are indigenous to other regions of Mesoamerica, including the Valley of Oaxaca and the lowland Maya area. Contact between the Zapotec of highland Oaxaca and the Chatino of the Pacific coast existed during the Terminal Formative Period, although scholars have debated the extent of this contact for some time (Marcus and Flannery 1996; Joyce 1991; Workinger 2002; Zeitlin and Joyce 1999). Zapotec iconography from the Formative and Classic Periods shares similar morphological characteristics with iconographic motifs from the lower Verde, particularly the Chatino trefoil.

Because the Chatino and Zapotec languages diverged relatively recently in antiquity (Joyce 2010), I highlight several similar iconographic conventions between the two cultures in order to identify icons. Trefoils appear in several Zapotec calendrical glyphs from highland Oaxaca. In addition, Urcid (1993) identifies several calendrical glyphs found on the Pacific

coast Oaxaca, most of which date to the Classic Period, that share similar characteristics to Zapotec calendrical glyphs. Urcid and Winter (2003) describe two calendrical glyphs, Glyph J, Glyph M which contain trefoil imagery (Figure 30). Caso and Bernal (1952:20) identify Glyph J as the physical depiction of the maize plant and Glyph M as part of an iconographic complex depicting lightning. Glyph M is often highlighted by “vegetable elements or small versions of the Maize glyph,” highlighting the connection between agricultural themes and climatic phenomena (Urcid and Winter 2003). While the trefoil appears in various contexts in Zapotec iconography, it is provocative that all concepts deal in some way with agricultural fertility.

Zapotec effigy vessels—elaborately carved and detailed vessels with anthropomorphic sculptures—often displayed imagery depicting rituals associated with the agricultural cycle of maize (Sellen 2002). Traditionally, scholars have argued that effigy vessels from the Valley of Oaxaca represent a complex of Zapotec deities, but recent interpretations suggest they depict royal ancestors impersonating supernatural beings (Boos 1966; Caso and Bernal 1952; Marcus and Flannery 1996). Sellen (2002), in his analysis of imagery on an elaborately carved open-ended cylinder and an effigy vessel from the Royal Ontario Museum, identifies the deity being impersonated in the representations as Cociyo, the commander of the forces of lightning, rain and thunder. Cociyo, the “storm god,” was the vital force of agricultural fertility, responsible for casting lightning bolts through the sky, splitting apart clouds and allowing rain to fall (Marcus and Flannery 1996). The individuals impersonating Cociyo hold in their hands forms of maize plants, presumably at various stages of maturation in the cycle of the plant’s growth. Instances of maize plant glyphs are present on the headdresses of effigy vessels of Cociyo (Sellen 2007:240-246) (Figure 31). Three stages corresponding to the growth cycle of maize occupy

portions of the headdress of the Cociyo impersonator. The first part of the cycle represents a maize kernel that has germinated and revealed a shoot. The second phase shows the maize plant as it has flowered, producing “spikelets.” Finally, the third stage represents a fully-grown maize cob.

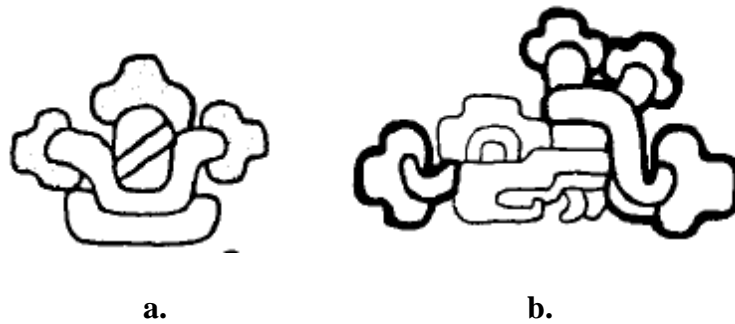


Figure 30: Zapotec Calendrical Glyphs (Urcid and Winter 2003): (a) Glyph J, depicting a maize plant, (b) Glyph M, with associated vegetable or maize elements

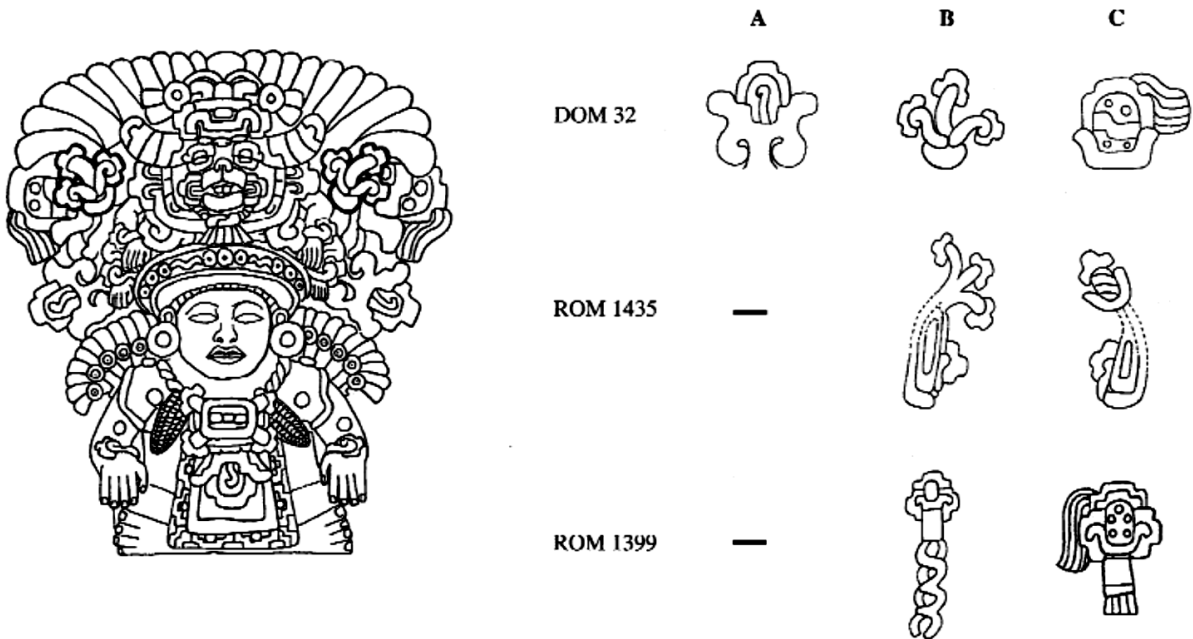


Figure 31: Comparison of the representation of a young maize plant on Zapotec effigy vessels (pictured on left, Dolores Olmeda Museum (DOM), Cat. 32; drawings by Adam Sellen)

Chatino potters may have been making similar statements about agricultural fertility during the Chacahua phase. As an iconic sign, the maize glyph resembles its referential object in a physical manner. As early as one week after it emerges from the ground, a growing maize plant sprouts its first leaves. Four weeks after the first sprout escapes the ground, the plant establishes a strong root system and as many as eight leaves emerge. It is during this period—the vegetative stages—that the maize plant is the most vulnerable to consumption by pests and elements of the environment (see Staller et al. 2009). The inner components of the trefoil motif Type 1, particularly the hook-like line resemble a growing maize stalk with a leaf hanging to the side after it has emerged. The shorter, straight lines that appear in some forms of the icon (Type 2) may represent “spikelets” that grow during the initial reproductive stages of the maize growth cycle, although this connection is tentative at best. Zapotec effigy vessels also depict fully developed maize cobs enclosed in trefoils in the headdresses of several Cociyo impersonators. I argue that the “U-shaped” inner component of trefoil motif Type 3 found on Chacahua phase graywares may represent a fully-grown maize cob. The u-shaped inner component is, on average, over twice as long as it is wide. This elongated shape is consistent with the shape of a typical maize cob and suggests the sign is iconic in nature, although the Type 3 variant of the Trefoil motif lacks the additional stylized designs found on maize glyphs of Zapotec effigy vessels.

### 5.3 CLIMATIC PHENOMENA

Recent research indicates that Formative Period (Preclassic in the Maya area) populations across Mesoamerica depicted concepts relating to climatic phenomena on public media such as carved stone monuments and decorated architecture and on ritual objects interred with burials



and caches. Several distinctive iconographic motifs from the lower Verde may represent concepts relating to climatic phenomena. In this section, I discuss the major climatic themes Chatinos depicted on graywares, including the step fret, the arch, and the lazy-S motifs.

The step fret motif is simple in structure but carries significant cosmological implications. In the Valley of Oaxaca, the design (an iconic sign) is most commonly associated with Cociyo, likely representing the real world manifestation of the deity as lightning shooting through the sky (Caso et al. 1967). Zapotecs elaborately displayed iconographic art linking Cociyo and ancestor veneration in the Valley of Oaxaca during the Monte Albán II and III periods (roughly equivalent to the Chacahua and Coyuche phases in the lower Verde chronology) on tomb lintels and murals as well as ceramic sculptures. Lightning designs symbolizing Cociyo also appeared on the exterior of serving vessels during this period, although these designs were not nearly as elaborate as the sculpted ceramic urns and effigy vessels discussed by Caso and colleagues (1967). Elson and Sherman (2007) argue that elites at Monte Albán and neighboring secondary and tertiary centers exchanged decorated crema (cream-paste) vessels with incised lightning motifs. Potters at Monte Albán produced these vessels initially and they were part of a complex gift-giving network between hinterland sites and the political center. These networks were part of an attempt by Monte Albán elites to integrate elites from secondary and tertiary sites into the regional sociopolitical hierarchy. Later in the Terminal Formative, it appears that local elites from hinterland sites began to mimic crema vessels with lightning motifs (Figure 32). The existence of imitation vessels with lightning motifs at highland valley sites underscores the importance of this motif and its possible links to the celestial realm in the Valley of Oaxaca.

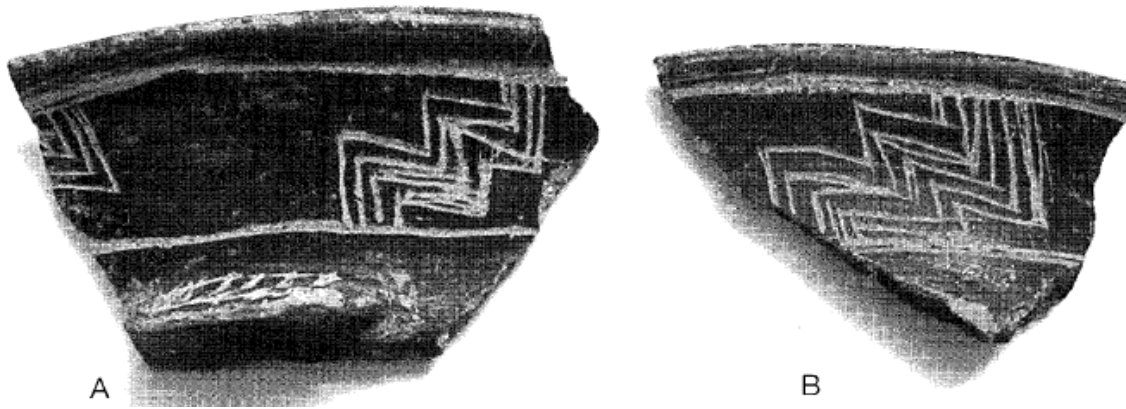


Figure 32: Crema-wares from the Valley of Oaxaca (Cerro Tilcajete) with Step Fret Iconography (from Elson and Sherman 2007:fig. 3).



Figure 33: Graywares from the lower Verde with Step Fret Iconography.

Cloud and rain imagery appear in the iconography of many ancient Mesoamerican cultures, including the Chatino (Figure 34). Symbolizing forces of nature in art is a pan-Mesoamerican tradition dating as far back as the earliest artistic expressions of the Olmec (Taube 2009). In his famous iconographic breakdown, Miguel Covarrubias (1946) was the first to attribute the origin of the well-known gods of rain—the Aztec Tlaloc, the Maya Chaac, and the Zapotec Cociyo—to an Olmec predecessor. Imagery depicting the Olmec Rain God exists on monumental stelae, jadeite and ceramic figurines, effigy vessels, and carved shell. Olmec artists

commonly adorned effigy vessels of the Rain God with “S-form” motifs, a common iconic sign associated with rain deities (Taube 2009:27). The motif, more commonly known in the lower Verde literature as the “lazy S” motif (Joyce 1991), appears on a large proportion of graywares in the Chacahua phase sample and likely depicts clouds as well. Zapotec and Maya artists also used “S-form” or “lazy S” imagery to symbolize clouds; the motif often appeared with raindrop imagery associated with Cociyo and in the headdress imagery of Chaac, the Maya god of rain (Sellen 2007:12; Taube 2009:29). Spiral imagery also appears to be associated with the God of Rain, particularly Cociyo and Chaac (Taube 2009:28-29). Several motifs depicting spirals appear on Chacahua phase graywares, however none provide clear-cut evidence that would suggest an association with climatic phenomena.

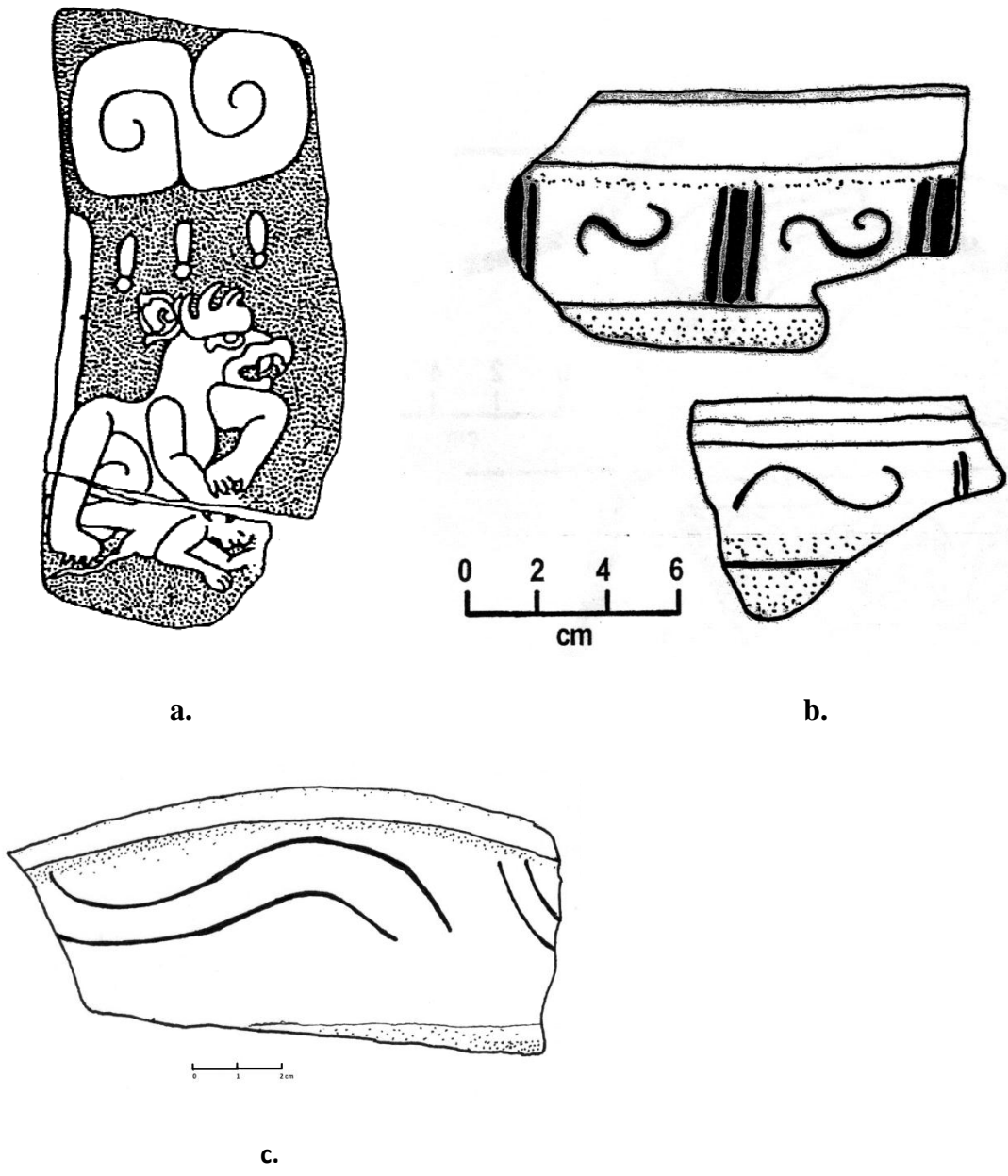


Figure 34: Cloud Imagery: (a) Relief carving from Chalcatzingo (Taube 1996:Fig.24e); (b) possible cloud imagery on Miniyua phase composite silhouette graywares from Río Viejo (Levine 2004:Fig.4-10); (c) Lazy-S motif on Chacahua phase grayware conical bowl

In addition to lightning and cloud imagery, several icons identified in the grayware sample may be associated with rain, particularly the arch motif in its four variants. Arches are

quite common in Mesoamerican iconography, symbolizing a diverse array of concepts. Caso et al. (1967:231, Figure 205 b-c) briefly discuss arch designs that appear on cylindrical and conical bowls with tripod or tetrapod supports (type C-12), noting that the designs are commonly associated with *xicalcolihqui* motifs, a Nahuatl term commonly translated as “step fret” or “greca” (Caso et al. 1967). Arches also appear in the headbands and headdresses of several Zapotec deities depicted in effigy vessels and braziers, particularly Cociyo and Xipe Totec, both of which are often associated with agricultural fertility (Caso and Bernal 1952). While admittedly tenuous, this association further suggests Chatinos emphasized climatic themes within grayware decorations during the Chacahua phase.

#### 5.4 COMPLEX ICONOGRAPHIC THEMES

In addition to the simple designs portraying agricultural and climatic themes described above, Chatinos also decorated graywares with complex iconographic images. Complex iconographic images may consist of icons that appear infrequently in the archaeological record, have more than two icons in the same image, or simply contain an elaborate design (the latter characteristic is admittedly subjective). Potters depicted various concepts with complicated designs including animals, people, architecture, and speech scrolls using similar decorative techniques as those described for maize- or climatic-themed icons. In this section, I analyze the prevalent complex themes, discuss cross-cultural iconographic connections, and offer interpretive meanings wherever possible.

#### 5.4.1 Zoomorphic Icons

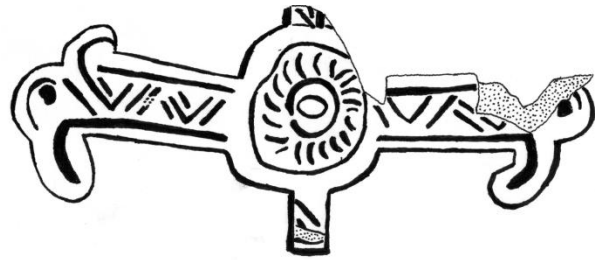
Animal imagery appeared on some of the fanciest vessel forms, including modeled vessel appliques, carved basal supports, decorated semispherical bowls, and an elaborately carved ollita. There was no indication of a preference in the representation of one animal species over another, although the small sample of animal images does not lend itself to that type of analysis. All species that could be identified were land mammals or birds; no marine species were definitively recorded. One of two<sup>2</sup> Chacahua phase semispherical bowls with animal imagery came from Charco Redondo and displayed an interesting zoomorphic motif. Potters carved a circular design into the exterior of the vessel with four elements projecting out of the top, bottom and sides of the circle. It is unclear what the top and bottom extensions signify, if anything, but the figures on the left and right appear to be the heads and necks of two deer (Figure 35). Two deer species are native to Mesoamerica, the white-tailed deer (*Odocoileus americana*) and the brocket deer (*Mazama americana*); the white-tailed deer appears to have had a more prominent role in Mesoamerican subsistence strategies and in the celestial realm (Miller and Taube 1993).

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<sup>2</sup> The second is the face pot from Yugüe, which is discussed in section 5.4.2



a.



b.

Figure 35: (a) Semispherical bowl with incised zoomorphic motif from Charco Redondo (photo by Michelle Butler); (b) Rollout of zoomorphic design (drawing by J. Brzezinski)

Bird imagery—a prevalent iconographic theme in nearly every region of the precolumbian New World—appears quite often in Mesoamerican art, underscoring the important role the animal played in the animistic religions of precolumbian peoples (Figure 36). In the Valley of Oaxaca, Zapotecs hunted several bird species for their feathers and also captured and sacrificed birds as part of ritual offerings (Marcus and Flannery 1994). Perhaps the most researched bird figure in Mesoamerican iconographic complexes is the Principle Bird Deity of the late Preclassic and Classic period Maya. Characterized by its “long-lipped,” down-turned beak, the Principle Bird Deity first appeared in the late Preclassic Period on carved monuments at the sites of Izapa, Kaminaljuyu, and other highland Maya sites along the Pacific coast of Guatemala (Bardawil 1976:196). Taube (1987:5) suggests the deity was associated epigraphically with human sacrifice and Maya kings’ accession of power in the Classic period,

although his interpretations of the icon's role during the Preclassic are vague. The figure also appears atop renderings of the Maya World Tree during the Classic Period.

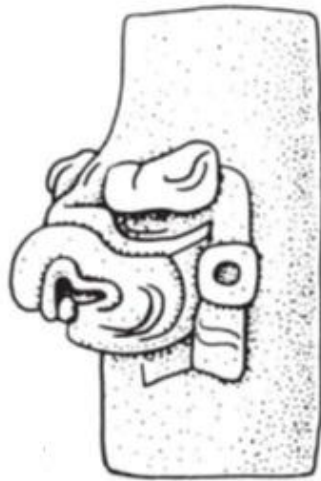
Despite the lack of epigraphic evidence toward the meaning of the Principle Bird Deity in the Maya Preclassic, the presence of a similar icon in Formative period highland Mexico may emphasize the deity's geographic reach. Caso and Bernal (1952:344) argue that the Principle Bird Deity is identical to a figure found on Formative and Classic Period Zapotec urns. They name this figure, *El Ave de Pico Ancho*, or "bird with the wide beak," and suggest the figure may be modeled after the king vulture. The vulture figures widely in Mesoamerican mythology; the bird's eating habits, scavenging and consuming deceased animals, give them a natural connection to the world of the dead (Benson 1997). For instance, an Early Classic cache found at Tikal contains the remains of four king vultures in the shape of a cosmogram (Pohl 1983). In addition, ancient Mesoamericans may have associated vultures with agriculture, as they often circled burning milpa fields looking for animals encumbered by the fire and smoke. Caso and Bernal (1952) note that a "trilobate element" on the top of the beak of the *Ave de Pico Ancho* resembles a similar element atop the beak of the Principle Bird Deity. This decoration may represent the carbuncle that sits atop the beak of the king vulture, standing erect when the bird is excited (Taube 1987). Bardawil, without mention of the connection to Zapotec icons, notes "a triple scroll" element on the beak of the Principle Bird Deity, which may represent a similar idea.

Formative Chatino peoples of the lower Verde may have had a similar deity to the Zapotec *Ave de Pico Ancho* and Maya Principle Bird Deity. Bird imagery appears on two rare Chacahua phase ceramic forms—an incised ceramic basal support and an elaborately carved *ollita* (Figure 34). The carved *ollita* was found in an extensive vessel cache at San Francisco de



Arriba. The bird depicted on the San Francisco de Arriba *ollita* (Workinger 2002) shares two particularly striking characteristics with the Zapotec and Maya figures. First, the long, down-turned, upper lip element of the beak resembles Zapotec and highland Maya forms. Second, the bird figure appears to have a similar spiral-shaped carbuncle element above the beak.

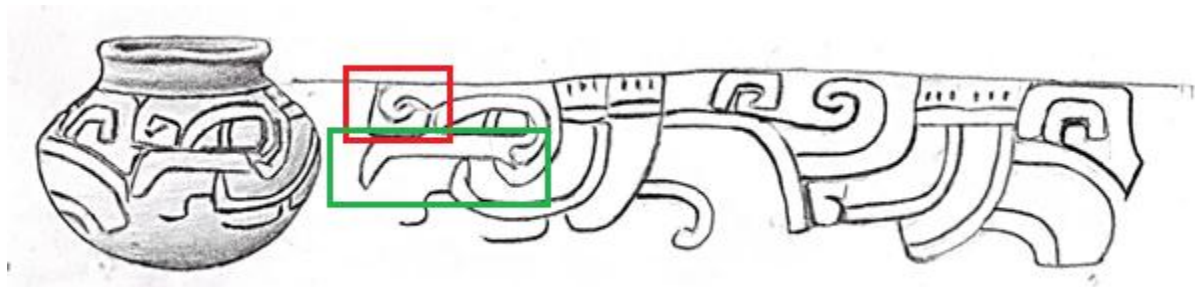
The other lower Verde bird icon detected in the Chacahua phase grayware sample was found on a carved basal support from Yugüe. The bird figure in the Yugüe example is not quite as explicit; however, certain shared features emerge when the rollout is analyzed. First, the down-turned upper beak element appears again, although in the Yugüe example, the beak is much wider. This link may serve to cement the relationship to the wide-beaked figures of highland Mexico and Guatemala and the lower Verde. The carbuncle element, if it is depicted at all, is not as pronounced, nor does it share the same structure as the San Francisco de Arriba example.



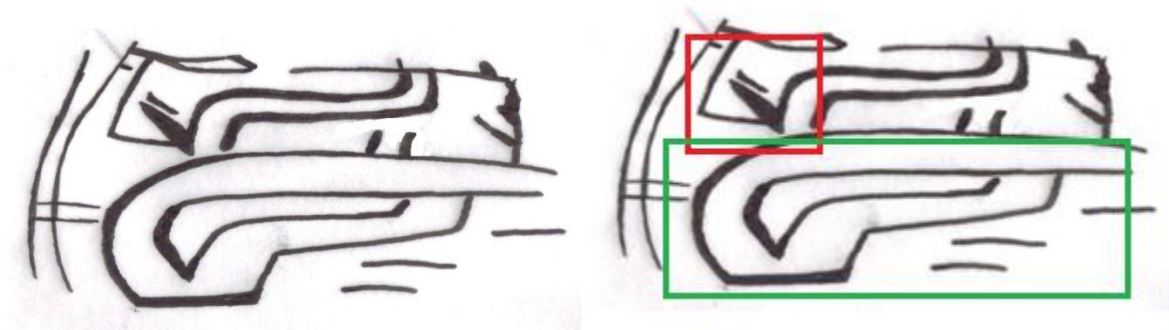
a.



b.



c.



d.

Figure 36: (a) El Ave de Pico Ancho on vessel from Monte Albán (redrawn from Caso and Bernal 1952); (b) Principle Bird Deity in depiction of vessel on Izapa Stela 18 (drawing by Karl Taube); (c) Bird figure incised on small grayware ollita from San Francisco de Arriba (carbuncle outlined in red, beak in green); (d) Rollout drawing of tetrapod support from Yuguie (carbuncle in red, beak in green)

In addition to animal figures, Chacahua phase Chatinos depicted feathers in various forms. While few precolumbian artifacts with feather work still exist in the new world (most that do derive from the dry soils of Peru) painted murals, sculpture, and decorated ceramics indicate feathers were an essential part of ritual clothing, particularly for those asserting elite status. Feather imagery appeared on several vessel forms in the grayware sample including the interior of small, thin-walled plates as well as the exterior of conical and semispherical bowls (Figure 37). The depiction of feathers in the lower Verde appears to be similar to the way Classic period Zapotec artists depicted feather headdresses on effigy vessels of various gods.

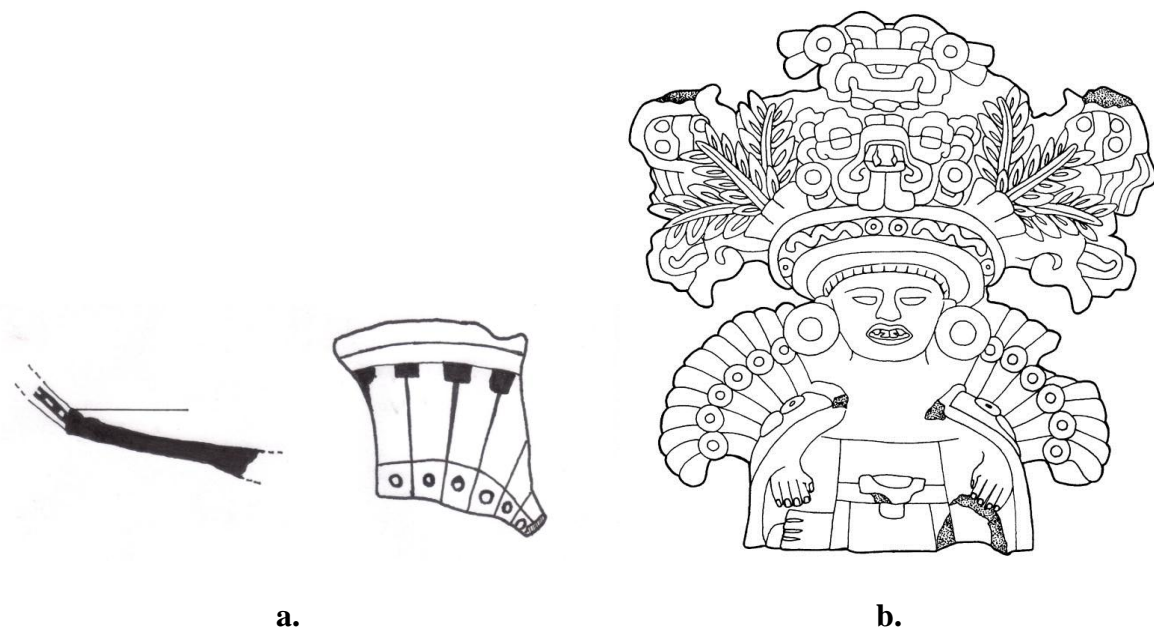


Figure 37: Feather imagery: (a) Chacahua phase thin-wall bowl from Yuguë (drawing by J. Brzezinski; (b) Classic period Zapotec effigy vessel of Cociyo (drawing by A. Sellen)

#### 5.4.2 *Anthropomorphic Icons*

Chacahua phase iconography lacks a sizeable proportion of examples depicting people or anthropomorphic characteristics. While Chatinos often represented the human form in small ceramic figurines, whistles and vessel appliques (see Hepp 2006), Chacahua phase

anthropomorphic designs are extremely rare on other artistic media such as ceramic vessels, carved stone monuments, and decorated architecture. In fact, in over 25 years of research in the region, archaeologists have not found a single carved stone monument on the coast of Oaxaca dating to the Formative Period (Urcid and Joyce 2001). In the Chacahua phase grayware sample, four grayware bowls exhibit carved designs with human-like characteristics, some more explicit than others.

Two highly divergent conical bowls with anthropomorphic icons come from surface survey collections at Cerro de la Cruz. The first example is a large, highly divergent, thick-walled conical bowl (plate) with skull designs carved within a panel in the interior of the vessel (Figure 38). The artist carved the skulls in profile, facing to the left; this pattern appears to repeat around the entire interior of the vessel. Initially, I identified this iconic sign as a skull because of the orientation of two elements in the design—the single “dot” in the upper left area and the six boxes stacked in columns of two in the lower left area of the design. I interpret the “dot” to be the skull’s eye and the stacked boxes to be teeth. On the far right side of the icon, a two-sided “hook” juts out and to the left. It is unclear what this element represents, if anything; however, it may represent the external occipital protuberance of the skull. This skull motif shares similar characteristics with an elaborately carved bone flute discovered by Barber (2005) (Figure 39).



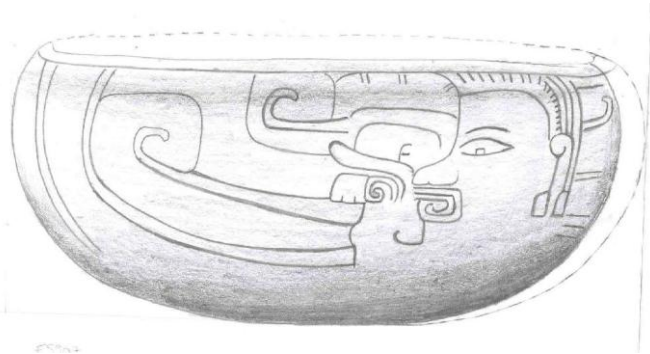
a.



b.



c.



d.

Figure 38: Grayware vessels with anthropomorphic images

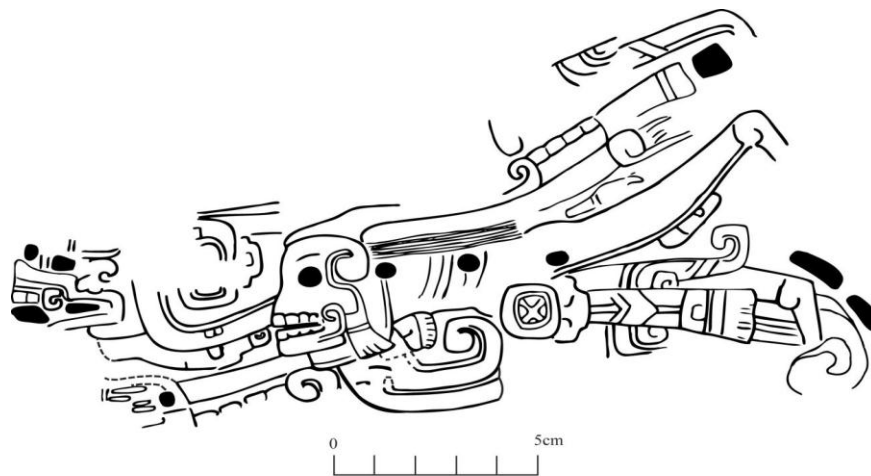


Figure 39: Rollout of the Yugüe Flute (Barber and Olvera n.d.; drawing by J. Cruz, L. Johnson, and W. Bayuk).

The second conical bowl with anthropomorphic characteristics from Cerro de la Cruz depicts a human face in profile, facing to the left. The vessel is a conical bowl with a highly divergent wall, although not nearly as divergent as the preceding bowl with skull icons, with the design carved on the interior. The upper framing line, a design element that appears on over 25% of graywares in the sample, acts as the anterior portion of the head. The artist carved a teardrop-shaped eye approximately 1.2 cm below the framing line with an overlaying eyebrow. The shape of the eye conforms to typical outline eye designs from Oaxaca and the Maya area. A small, thin-walled plate from Río Viejo may also exhibit anthropomorphic imagery. The outline of a human arm and hand with four fingers the left side of the plate, but the incomplete nature of the vessel fragment (vessel is less than 25% complete) makes this interpretation tentative at best. Considering that small, thin-walled plates were a medium on which Chatinos depicted a wide variety of icons, it is conceivable that anthropomorphic imagery was a part of that corpus.

Finally, one of the most elaborately decorated grayware bowls from the Chacahua phase comes from Yugué Op2-F4. The vessel is more than 50% complete, a rarity for Chacahua phase iconographic graywares. On the exterior of this semispherical bowl, the artist depicts a human face, presumably a male, drawn in profile facing to the left. The man has short hair and wears an ear spool in his left ear, which may indicate his elite status (Barber 2005:203-4). A long volute extends from the figure's mouth, coupled with as many as three smaller volutes closer to his face. A small design appears to the left of the smaller volutes, which may be the figure's right hand drawn to depict him gripping an object, possibly a flute or whistle. Above and to the left of the figure's face is a complicated set of designs that may represent an animal effigy mask (Barber 2010, personal communication). The species identification of the animal remains

elusive; however, the upturned, volute-like design may indeed represent the proboscis of a mythical bird.

Alternatively, the mask might denote a meaning similar to the headdresses depicted in Zapotec effigy vessels, many of which depict the *Xicani*. The *Xicani* was a mythical creature most often depicted in highland Mexican cultures with the body of a turtle and the head of a long-snouted lizard, the earliest known examples of which date to the Monte Albán II period (Urcid 2005). A pair of flying *Xicani* figures adorns the entrance of a Terminal Classic tomb on the North Platform at Monte Albán, possibly indicating the Zapotec *Xicani* was involved in contact with the divine world. In addition, a Late Classic *Xicani* emerges from the headdress of several effigy vessels from the Valley of Oaxaca (Figure 40). A Late Preclassic Maya version of this icon appears on a carved shell found at La Lagunita, Guatemala, plainly identified by its serpent head and turtle body (Brady and Prufer 2005).



Figure 40: Zapotec effigy vessels with *Xicani* headdresses (unknown provenience)

#### 5.4.3 *Volutes and Wind*

The volute icon is a pervasive motif in ancient Mesoamerican iconography and is present on Chacahua phase graywares from the lower Verde. In many highland Mexican cultures, the volute, or “speech scroll,” often symbolizes the divine status of an elite person’s spoken words (Cowgill 1997). In fact, even the breath of a person of high status was in some sense sacred, and in some accounts thought to be “flowery” (Taube 2001). In the codices of the Aztecs and Mixtecs, volutes emanating from the mouths of individuals indicated their elite status. During the Chacahua phase, volutes appeared both in conjunction with anthropomorphic figures (see section 5.3.2), often emanating directly from the figure’s mouth, or abstractly with numerous



other icons (Figure 41). For instance, two or three vertical lines often accompany the straight section of the icon leading to the curl. It is unclear what these lines signified, although they may serve to emphasize the projection of the volute.

Other Chacahua phase icons share characteristics with volutes, particularly the hook curve motif described in Chapter 4. The hook curve motif exhibits a downward-facing curl that transitions into a long tail, similar in basic structure to the volute (Figure 42). However, it is not clear what these symbols signify. I suggest a tentative connection interpretatively to the volute motif, as both icons always run horizontally, although it is unlikely that the two icons represent the same concept. Chatino artists often depicted the hook curve motif multiple times around the entire exterior of a conical or semispherical bowl. In this sense, the motif may indicate an ongoing or perpetuating phenomenon such as wind. The prevalence of climatic themes on iconographic graywares described in section 5.2 supports this connection, but the possibility of the repetition of the icon as merely a stylistic preference is equally conceivable.



Figure 41: Volute icons on Chacahua phase graywares



Figure 42: Hook curve icons on Chacahua phase graywares

#### 5.4.4 Architecture

Recently, scholars have paid increasing attention to the connection between the way Mesoamerican peoples constructed landscapes and their ideas of the organization of the cosmos (M. Smith 2005). Citing iconographic, linguistic, and archaeological evidence, Schele and Freidel (1986) argue that some Mesoamerican cultures considered certain structures the locus of the world's creation. In the Valley of Oaxaca, the spatial organization of architecture (and the iconography that accompanies it) at the Main Plaza of Monte Albán suggests the site was founded as a cosmogram, representing the Zapotec version of the cosmos (Joyce 2000). The Main Plaza acted as an *axis mundi* or a point of communication between the worlds of humans and the supernatural (Joyce 2004). While sites in the lower Verde may not convey the same grandiosity as Monte Albán, monumental architecture was clearly just as important. Large-scale construction projects were carried out at 10 sites during the Terminal Formative period, and public structures like Mound 1 at Río Viejo were the locus of numerous ceremonial activities (Barber and Joyce 2007; Joyce 2010).

Iconography found on Chacahua phase graywares may also indicate the sacred nature of architecture in the lower Verde. Two vessels in the Chacahua phase grayware sample convey architectural themes—an elaborately excised conical bowl from an excavation at Río Viejo (RV95-Op C) and a small excised plate from Cerro de la Cruz. Both vessels exhibit the same main icon, which appears to be a pyramidal structure with two steps. The icon is similar to the trefoil motif—note the resemblance of the long, u-shaped design on the interior of the structure to the inner component of the Trefoil motif Type 3—but differs in some distinct ways. First, the construction of the building icon appears to be more standardized than the construction of the

trefoil, only appearing in forms with two steps, although the limited number of examples may constrain this interpretation; the trefoil, particularly the outer tripartite component, appears in at least a dozen different forms. Second, the building icon contains some design elements that the trefoil icon lacks, namely the small, vertical line at the apex of the structure and the pairs of horizontal lines near the base of the building. Continuing with the interpretation of the base of the building, the u-shaped component may signify a doorway or stairway of some kind, but this interpretation is purely speculative.

While the plate from Cerro de la Cruz solely displays building icons, likely repeating in a circular pattern around the interior of the plate, the conical bowl from Río Viejo appears to depict an architectural scene. Two different interior designs are found inside the stepped buildings. All building icons display the same interior components, a u-shaped design (possibly a stairway or doorway) surrounded by vertical and horizontal hash marks, except for one. The third building from the left lacks hash marks and instead exhibits a design that resembles an outlined letter “P.” While the significance of this icon is still unknown, its meaning may be linked to the icon that appears directly to its right. This icon resembles the “greca” identified on iconographic pottery from the Valley of Oaxaca (Caso et al. 1967), as well as the elaborate carved stone architecture for Valley of Oaxaca sites such as Mitla. Paddock (1985) notes that greca appeared often in the Mixtec codices associated with place names or standing for the concept of a city.

## 5.5 CONCLUSIONS

The ceramic icons of the Chacahua phase indicate a solid connection between the use of grayware serving bowls and notions of agricultural fertility and climatic phenomena. Chatinos

depicted maize in the form of a trefoil motif that appeared in three variants, suggesting the icon may have represented various stages of the life cycle of the plant. While no explicit evidence from the grayware sample indicates icons depicting maize were related to deities, artifacts from other areas Mesoamerica, particularly highland Mexico and the Pacific coast of Guatemala, reflect a strong, pan-Mesoamerican connection between maize and the supernatural world existed as early as the Formative Period. Iconographic themes displaying climatic phenomena, particularly clouds and lightning, underscore the link between agriculture and the supernatural. The complex themes of the Chacahua phase depict an assortment of concepts, including zoomorphic symbols, images of human beings, and representations of architecture, speech, and wind. As I argued in Chapter 4, the distribution of these complex themes was restricted and may have been limited to use by elites. In the next chapter, I discuss the various contexts in which iconographic graywares have been found and what these contexts mean in terms of eliciting what Chacahua phase Chatinos did with these vessels, focusing on evidence for ritual feasting and vessel caching. I then discuss what these contexts may have meant for the spread of an ideology based on communal ideas, particularly notions of fertility brought forth through figured worlds constructed through ritual events.

## CHAPTER 6: DISCUSSION AND CONCLUSIONS

### 6.1 INTRODUCTION

In the preceding chapters, I have examined iconographic decorations incised into grayware serving vessels dating to the late Terminal Formative period Chacahua phase in the lower Río Verde Valley of Pacific coastal Oaxaca, Mexico. Scholars have theorized that during the Terminal Formative, elites at the regional political center of Río Viejo struggled to build a centralized polity that included hinterland populations throughout the lower Verde (Barber and Joyce 2007; Joyce 2010). Research in the lower Verde indicates that a trend toward increasing status inequality also persisted into the Chacahua phase, demonstrated by the presence of mortuary offerings, caches, and domestic monumental architecture at several sites within the valley (Barber 2005; Joyce 1991; Workinger 2002). Underscoring this trend is the tension that existed between people living at the regional center of Río Viejo, particularly elites, and people living in local hinterland communities. It is this tension which likely gave rise to the elaborate iconographic designs carved into Chacahua phase graywares. By eliciting meaning from icons found on grayware serving vessels we can view the extent to which people at Río Viejo may have standardized ideas rooted in a pervasive worldview, conducive to central political control.

In Chapters 4 and 5, I addressed two main questions. First: was there a suite of icons that reflected a worldview Chatinos may have shared during the Chacahua phase? Second: was this worldview part of an ideology promulgated by people at Río Viejo? In the following sections, I argue that a worldview in which agricultural fertility was facilitated by non-human deities was the most common theme depicted on incised graywares. Based on the relative diversity of motif assemblages at five sites occupied during the Chacahua phase—Río Viejo, Yugué, San Francisco

de Arriba, Cerro de la Cruz, and Barra Quebrada—a standardized set of religious beliefs may have been created at Río Viejo, indicated by the “richer” sample of motifs found on graywares from this political center.

## 6.2 ICONOGRAPHIC GRAYWARES AND CHATINO WORLDVIEWS

One of the fundamental tenets of anthropological archaeology is that there is no single, universal way people viewed the world (Sharer and Ashmore 2003). Ancient worldviews—the ways people categorized their social and natural environments—are difficult to synthesize because we cannot speak to our Chacahua phase Chatino subjects directly. However, through symbols, some of the beliefs and views Chatinos held were expressed concretely. Because ancient Mesoamerican religious beliefs and worldviews were intimately connected to institutions of political authority (Joyce and Winter 1996; Miller and Martin 2004; Schele and Freidel 1986), the interpretations of the symbolic representations of these beliefs allow us to view how ideological systems worked. In the lower Verde, the suite of icons found on iconographic grayware serving vessels suggests Chatinos communicated ideas about the celestial realm as well as the central importance of agricultural fertility. The geographic distribution of some icons, particularly the Trefoil motif, likely indicates Chatinos living on both sides of the Río Verde and throughout the valley shared certain religious beliefs. The visible nature of grayware iconography indicates the ideas expressed through these symbols were openly disseminated. However, these icons were not nearly as visible as an entire monumental building or a stucco mask adorning the walls of a structure. The audience seeing and receiving the iconographic messages encoded on graywares would have been more exclusive, possibly constituting people of elite status from various locations in the valley.

### 6.2.1 *Agricultural and Climatic Icons*

During the Chacahua phase, Chatino potters frequently decorated grayware serving vessels with iconographic motifs depicting various agricultural and climatic themes. Of the icons to which I was able to assign a specific meaning (see Chapter 5 for explanation), themes depicting notions of agricultural fertility vastly outnumbered any other theme. More specifically, I could only draw sound interpretations from about 40% (350) of the icons analyzed in Chapter 4; the meanings of other icons remain elusive or may not have a salient meaning (i.e. framing lines). Out of this group, the majority of icons depict agricultural or climatic phenomena. For instance, for every icon recorded in the grayware sample depicting an anthropomorphic or zoomorphic figure, over twenty icons were recorded depicting themes of agricultural fertility.

Icons depicting vegetation (possibly the maize plant) were among the most distinctive Chacahua phase decorations, appearing on smaller, semispherical serving bowls as well as larger, conical serving bowls. Maize was the most important crop in Chatino subsistence strategies (Melmed 2006) and was a crucial aspect of indigenous mythology as well as communal identity (see Chapter 5). In addition to the maize plant, several other iconographic motifs depicted various climatic elements that would have fit into a general ideological theme espousing agricultural fertility. Chatino potters carved step frets, arches, volutes and hook curves, and the “lazy-S” motif into graywares, which likely depicted lightning, water, wind and clouds, respectively. These interpretations must be re-evaluated over time as more Chacahua phase archaeological contexts are excavated, particularly to eliminate any bias of interpretation.

The nature of this suite of icons, which appears to focus on ideas of agricultural fertility, may reflect a pan-Mesoamerican set of core religious beliefs and worldviews. In particular,



these icons may have emphasized the ideological base of a particular aspect of precolumbian religion. In return for the deities' consent to practice agriculture, which caused them great pain, humans were required to sacrifice their bodies to the earth in death. In the Valley of Oaxaca, Zapotec elites may have exploited new, more potent rituals (i.e. human sacrifice and autosacrifice) to petition the gods for fertility during the Late Formative period; in return, commoners offered sacrifices of labor and goods to elites. This relationship of power may have facilitated the founding of the mountaintop ceremonial center of Monte Albán. As of yet, no evidence indicates that human sacrifice was occurring at lower Verde sites during the Formative period. However, the fact that the salient themes of Chacahua phase iconography focus on ideas of agricultural fertility reflects the Chatino worldview.

### 6.2.2 *Even Distribution of Icons*

To designate a worldview as being “shared” by a population, the evidence of which exists on ceramics, the traces of that worldview should be represented ubiquitously throughout the area sampled. The design of this study lends itself to evaluate this idea because 18 sites throughout the lower Verde were sampled, ranging from sites occupying a first-order rung in the settlement hierarchy (e.g. Río Viejo) to a fifth-order designation (e.g. Algodonera). The grayware icons representing a worldview based on ideas of agricultural fertility were found not only at large, highly populated sites with substantial samples of grayware vessels, but also at small sites with small sample sizes. For example, icons signifying vegetation by way of the trefoil motif (all three types) appear at 11 of the 17 sites sampled (65%), including six sites that accounted for five or fewer vessels. Climatic themes were even more widely spread. All major sites with large

sample sizes (see Chapter 4, Table 9) accounted for graywares with each type of major climatic themes (clouds, wind, and lightning).

### 6.2.3 *Iconographic Motif Composition*

The composition of ceramic decorations allows archaeologists to identify certain worldviews communicated by iconographic motifs (Brumfiel 2004). For instance, Vega (1984) demonstrates that vessels from the Basin of Mexico in the Late Postclassic exhibited decorations organized into quadripartite patterns, likely representing the four quarters of the universe. While the fragmentary nature of late Terminal Formative ceramics often precludes analyses of this type, we nonetheless may glean certain notions of ideological interaction from motif composition.

One of the major themes that emerged from the formal ceramic analysis in Chapter 4 was the notion that Chatino potters carved decorations on sections of grayware vessels that were highly visible. For instance, potters carved the majority of semispherical bowl decorations (86.5%) on exterior walls.<sup>3</sup> The position potters chose to display icons on conical bowls depended on the location that was most easily visible. Highly divergent conical bowls (including plates) were decorated on the upper half of the interior walls, a location that would have been visible even if the vessels contained food. Conical bowls with steeper wall angles were decorated predominantly on the exterior and occasionally on the rim. Very few vessels were decorated on the base, further suggesting that icons on grayware serving bowls were intended to be viewed.

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<sup>3</sup> An additional 3.2% were carved on the exterior and interior.

#### 6.2.4 *Temporal Continuity*

Local grayware serving vessels first appeared in the archaeological record in the lower Verde during the Miniyua phase (imported graywares appeared in the preceding Minizundo phase) (Joyce 1991). Abstract geometric designs appeared on grayware bowls and jars, the most elaborate of which potters carved into composite silhouette bowls. Some Miniyua phase decorative motifs may have been part of a long-held Chatino tradition of depicting climatic phenomena on graywares that persisted into the Chacahua phase and possibly into the Early Classic Coyuche phase. Iconographic imagery similar to the lazy-S and step fret motifs I described for the Chacahua phase in Chapter 4 appeared on Miniyua phase composite silhouette bowls. However, as of yet, no evidence exists for the presence of the trefoil motif in the lower Verde before the onset of the Chacahua phase or after the Chacahua phase ended. The institution of the trefoil motif on Chacahua phase graywares may have been part of several changes that occurred during the Chacahua phase.

While the trefoil motif likely conveyed similar ideas of agricultural fertility, the increased emphasis on agriculture, particularly maize, in iconographic depictions may underscore growing tensions between local populations and elites at Río Viejo. As the connections between people at the regional political center and hinterland strengthened, elites at Río Viejo may have attempted to exact larger tributes, likely in the form of labor and food. Because maize was an influential symbol of health and prosperity during precolumbian times (Sandstrom 1997; Schele and Freidel 1986), the proliferation of icons depicting maize during the Chacahua phase may indicate this tension existed. However, evidence indicates that the lower Verde never reached agricultural carrying capacity during the Chacahua phase. Alternatively, the proliferation of the trefoil motif

may also indicate that a particular food staple (maize) was in abundance and Chatinos were emphasizing its importance or simply found the decoration pleasing. With the fall of the Río Viejo polity at the end of the Chacahua phase, it is possible that ideological messages that were being conveyed during the Terminal Formative were no longer necessary or were not as powerful during the Early Classic period.

#### 6.2.5 *Summary*

The analyses of plastic decorations on graywares suggest that Chatinos living in various parts of the lower Río Verde valley shared a common worldview emphasizing agricultural fertility. This worldview may be part of a pan-Mesoamerican religious tradition in which humans and non-human deities shared a mutually beneficial relationship. The positions in which Chatinos placed icons on grayware serving bowls were visible and the depictions were simple, maximizing the potential exposure and understanding of the ideas materialized within the icons. Some of the pervasive themes of the Chacahua phase, particularly climatic themes, existed in the preceding Miniyua phase and may have persisted into the Early Classic Coyuche phase. The appearance of the trefoil motif, perhaps the most recognizable and representative icon of the Chacahua phase, is limited to the late Terminal Formative and found at several sites within the lower Verde; this icon may represent an integrative ideology for the lower Verde.

### 6.3 SCOPE OF ICONOGRAPHIC GRAYWARES: ELITES AND RÍO VIEJO

The second question this thesis addresses addresses the spread of icons and their inherent ideologies throughout the lower Verde. Following over 25 years of research at lower Verde sites by several scholars, I chose to test the hypothesis that people at Río Viejo, probably lead by

people of high status, were attempting to create a more centralized polity during the Chacahua phase by examining the distribution of icons throughout the valley. This brings us to two subsequent questions. Were people at Río Viejo spreading the ideas coded into iconographic graywares? And, can we determine that social standing or status of the people responsible for their dissemination? In the following sub-sections, I argue that, based on several statistical measures of iconographic data compiled for this study, the site of Río Viejo was likely a locus of ideological aggregation.

### *6.3.1 Ideological Aggregation at Río Viejo*

In Chapter 4, I applied statistical measures of diversity to analyze the iconographic richness (total number of different iconographic motifs) of five lower Verde sites —Barra Quebrada, Río Viejo, Yugüe, San Francisco de Arriba, and Cerro de la Cruz. These sites accounted for close to 90% of the sampled graywares, although the sample sizes at each site varied (e.g. 40 vessels [73 icons] at San Francisco de Arriba vs. 178 vessels [340 icons] at Río Viejo). Following Conkey (1980), and subsequently Kintigh (1984) and McCartney and Glass (1990), sites with a greater than expected richness value, compared to a simulated mean richness value based on sample size, were interpreted as indicative of an environment in which a great deal of communication was taking place by way of iconography.

Two sites exhibited a richness value that was higher than expected, given the size of the iconographic sample from each site—Río Viejo and Cerro de la Cruz. Cerro de la Cruz, a small site during the Chacahua phase, was located just 2 km from Río Viejo. Given the size and power of the Río Viejo polity during the Chacahua phase, it is conceivable to argue that Río Viejo elites heavily influenced people at Cerro de la Cruz or were even in control of that site. This

relationship may have given people at Cerro de la Cruz greater access to iconographic graywares than sites of similar size and population further away from Río Viejo. In fact, based on regression analyses of diversity indices (e.g. Shannon index [ $H^1$ ], Simpson index [ $H$ ]), which measure the heterogeneity of a sample, the assemblages of grayware icons appear to become less diverse as distance from Río Viejo increases. Assemblages that are more diverse reflect a greater probability that randomly selected icons will belong to different motif types, suggesting that a greater number of different motifs were present in an assemblage. Again, I interpret greater diversity to indicate an environment in which more communication by way of iconography was taking place.

### 6.3.2 *Ideological Dissemination and Grayware Portability*

Essential to the idea of ideological dissemination is a medium that can transmit ideas effectively. If Río Viejo elites were interested in spreading an ideology, it is likely that word of mouth was not the only way this was carried out. Symbolic objects, such as iconographic graywares, would have been especially efficient for long distance communication between elites or, more broadly, among political allies or social groups. Chatinos would have been able to stack several vessels, particularly divergent wall bowls, on top of each other to be distributed through trade routes. Ideology often becomes materialized within objects and icons, which can be used in performances, ritual attire, mural paintings, and any other activities. Ritual activities aided in the construction of group identity, and portable objects facilitated symbolic communication among individuals, within social groups, and between polities (Demarrais et al. 1996; Hodder 1982).

The average size of the various forms of iconographic graywares in the Chacahua phase sample suggests portability was one of several qualities Chatino potters favored in these serving wares. Semispherical bowls exhibited an average diameter of 15.6 cm, and conical bowls had an average of 27.4 cm. To put these values in perspective, the diameter of a standard soccer ball is approximately 22 cm. Both vessel forms, which accounted for over 85% of all artifacts included in the sample, exhibited wall thicknesses of less than 1 cm, on average. These attributes provided for vessels that were easily transported.

### *6.3.3 Nature of Río Viejo Icons vs. Hinterland*

Several stylistic and iconographic attributes present on vessels from Río Viejo (and Cerro de la Cruz) suggest that graywares consumed by people at the regional political center were more aesthetically complex—and fancier—than were graywares consumed by people at outlying sites. First, icon ratios (number of icons per vessel) of the assemblages from Río Viejo and Cerro de la Cruz—1.94 and 2.12, respectively—were greater than the icon ratios from all other sites. It is certainly plausible that these statistical measures are influenced by the preservation of the archaeological contexts in which they are found (well-preserved contexts often contain larger proportions of vessels exhibiting larger iconographic “canvases”). However, the larger icon ratios from the Río Viejo and Cerro de la Cruz assemblages may also suggest that potters constructing graywares for people in these areas may have been attempting to communicate a more varied set of ideas.

In addition to the higher frequency of distinct icons recorded on each vessel, graywares from Río Viejo also exhibited more stylistic flair than did graywares from outlying sites. On average, vessels from Río Viejo and Cerro de la Cruz were burnished (92.2% of vessels from Río

Viejo and 88.5% of vessels from Cerro de la Cruz). A stylistic attribute Chatinos conceivably would have valued highly, vessel burnishing was a more labor-intensive process. Furthermore, vessels from Río Viejo and Cerro de la Cruz tended to exhibit designs that were excised, another specialized decorative technique.

#### 6.3.4 *Ritual Activities and Elite Sponsorship*

In addition to establishing Río Viejo as the locus of ideological dissemination by way of ceramic icons, I also argue that elites were responsible for the spread of icons. Graywares were a significant part of several ritual activities, including feasting and caching events, which would have served as a forum for “commensal politics” (Dietler 2001:67). Ethnographic and ethnoarchaeological evidence indicate feasting contexts in the archaeological record illuminate situations in which people came together to do more than simply eat (Dietler 2001; DeBoer and Lathrap 1979; Harris 1985; Rosenwig 2007). In the lower Verde, public feasts may have been one of a select range of activities through which political discourse and the construction of community identity took place. Public feasts were events in which people of varying status distinctions convened together, creating a boundary between those included in the activity and those excluded from it, thus actively defining a corporate group. At Yugüe, a Chacahua phase midden (Op 1-Feature 42) located on the large, multi-use platform at the site was likely deposited because of a public feast (Barber 2005) Within this midden, Chatinos deposited a large amount of well-preserved graywares, including large conical serving bowls with tetrapod supports and smaller, elaborately carved semispherical bowls.

Two excavated contexts from the site of Río Viejo suggest feasting was occurring on the domestic level as well. First, a Chacahua phase ceramic dumping ground (RV88 Op. D-F10)



discovered on the eastern extent of the site was comprised of a large amount of iconographic graywares, along with utilitarian coarse, medium and fine brownwares (Joyce 1991:245). The deposit lacked other types of occupational debris, such as charred plant remains, animal bone, and ground stone tools, that would suggest it was a domestic midden. However, the ceramics in the deposit were in good condition, exhibiting very little erosion, suggesting Chatinos may have deposited this large collection over a short period (Joyce 1991), and the presence of ceramic whistles and other musical instruments suggests the deposit contained ceremonial aspects (Barber and Hepp n.d.). The second deposit indicating domestic feasting took place during the late Terminal Formative was discovered within a series of Chacahua phase trash middens on the southeast side of Mound 4 at Río Viejo. Several complexly incised and excised semispherical and conical grayware bowls were found within these alternating trash middens, including an elaborately carved conical bowl with icons that may represent architectural structures.

Building on Hendon's (2003) arguments concerning feasting among the Maya of the Late to Terminal Classic Copan Valley, domestic feasts may have occupied several roles within Chatino society (also see Clarke 2001 for a description of several different types of feasts). Domestic feasts may have facilitated relations of dominance and subordination between social groups by creating situations of both social and economic debt in which one person or group must repay the feast put on by another person or group. In addition, domestic feasts may have served to reinforce social relations that were already in place, particularly relationships of unequal power. By using finely carved iconographic graywares, Chatinos that hosted feasts within their domestic confines may have reinforced their dominant social position by expressing their access to resources and solidifying relationships of power.

Another activity that could have served to mold community identity, in part through its relationship to iconographic graywares, was vessel caching. During the Chacahua phase, Chatinos interred valuable objects, including iconographic graywares, in offerings associated with places that had long histories of meaning to local communities (Barber et al. n.d.). Not every Chacahua phase vessel cache contained a substantial amount of grayware sherds. In fact, Chatinos appear to have preferred using undecorated coarse brownware vessels to make offerings (Barber 2005; Barber et al. n.d.; Workinger 2002). However, the contents of certain Chacahua phase caches indicate that this ritual activity was a forum for the expression of ideas, some of which may have materialized on grayware serving vessels. For example, four small iconographic grayware *ollitas* carved with various intricate designs (see Chapter 5) accompanied a wide range of other materials in the interment of 99F-F36, a cache found within Substructure 1-2 on the San Francisco de Arriba acropolis (Workinger 2002). These artifacts, which included beads and pendants made from crystal and greenstone (raw materials that would have been imported into the lower Verde), were associated with iconographic graywares, indicating the prestige associated with these grayware vessels.

Additionally, the contents of Op2-Feature 4 at Yugüe, a Chacahua phase cache found below an occupational surface within Substructure 2, suggest that graywares with complex iconography were valued. In this cache, fragments of a semispherical grayware vessel with an elaborately carved human figure, likely representing an elite individual wearing a *Xicani* mask, accompanied several other artifacts, including a coarse brownware cooking jar, organic materials, a figurine, and several ceramic earspools. Research indicates that earspools are an

indicator of high status (Hendon 1991), possibly indicating a similar assignation for the elaborate grayware in the cache.

### 6.3.5 *Summary*

In the preceding section, I argued that iconographic grayware serving vessels were powerful objects that could transmit coded messages across long distances. Elites at Río Viejo may have utilized this communicative medium to promote an ideology based on elite access to the divine world. This notion echoes trends witnessed in the Chacahua phase, including the peak of the construction of monumental architecture that suggest a more centralized polity existed during this period. One way elites at Río Viejo may have facilitated this trend in centralization was through the use and consumption of iconographic graywares during important ritual activities such as feasting and caching events. Because these activities were crucial in the construction of communal identity, the messages coded in the walls of graywares became more powerful by linking events to the dominant worldview.

## 6.4 FUTURE RESEARCH

Because this thesis is the first study to examine late Terminal Formative period iconography in the lower Verde, additional studies must be conducted to address certain theoretical issues. First, while the grayware sample includes most available graywares with plastic decorations dating to the Chacahua phase, a larger sample would facilitate further statistical examinations of icon distribution throughout the valley. Large samples of Chacahua phase graywares exist from the sites of Río Viejo and Yugüe, yet we lack congruent samples from other sites in the valley. It will be particularly important in future projects to obtain larger

samples of graywares from second-order sites in the lower Verde settlement hierarchy. In addition, in order to learn more about how status distinctions influenced grayware distribution, we will need to find a greater number of primary contexts with grayware deposits.

We also know very little about the specifics of intra-valley grayware production. Several ceramic sourcing studies have been conducted with the goal of tracking interaction and trade over large distances (i.e. between the Valley of Oaxaca and the lower Río Verde Valley), but no such analyses have been conducted solely within the lower Verde (Joyce et al n.d.). For example, it will be important to determine the location (or locations) of grayware production as well as the clay sources exploited to make graywares. Were graywares made exclusively at Río Viejo and then distributed throughout the valley, or did local potters also produce graywares? Did several sites share a common clay source? If so, who controlled that source and was access to it restricted? Based on the design variability of some icons, particularly the trefoil motif, it is likely that grayware production took place on the local level as well as at the regional political center. Because an intra-valley ceramic sourcing study would need to be very sensitive to subtle differences in clay sources in close proximity, a petrographic analysis of ancient and modern ceramics and clay sources would need to be completed. A study using INAA (Instrumental Neutron Activation Analysis) techniques may not provide the resolution needed to draw conclusions about interaction within the lower Verde polity.

## 6.5 CONCLUSION

The research presented in this thesis has specific applications to the lower Verde literature and broader applications to Mesoamerican archaeology. First, it adds to the general knowledge we have of the social and political environment present in the lower Verde during the

late Terminal Formative, a period of hypothesized political centralization. While the data presented here are somewhat ambiguous as to whether the lower Verde polity was trending toward centralization or decentralization during the late Terminal Formative, I argue that the presence of a shared worldview on a portable medium such as ceramic serving vessels suggests a level of political integration that would extend past the confines of a particular site. Second, it provides a blueprint to address some aspects political and ideological discourse without the luxury of relying on writing or on elaborately carved stone stelae. With additional discoveries in the lower Verde, we will be able to further piece together the political environment of the Chacahua phase, a period of marked political complexity.

## BIBLIOGRAPHY

- Adams, R. M. (2001). Complexity in Ancient States. *Journal of Anthropological Archaeology*, 20(3), 345-60.
- Aldenderfer, M. (1987). *Quantifying Research in Archaeology*. Newbury Park: Sage Publications, Inc.
- Althusser, L. (1984). *Essays on Ideology*. (B. Brewster, & G. Lock, Trans.) London: Verso Books.
- Balkansky, A. K. (1998). Urbanism and Early State Formation in the Huamelulpan. *Latin American Antiquity*, 9(1), 37-67.
- Balkansky, A. K., Perez Rodriguez, V., & Kowalewski, S. A. (2004). Monte Negro and the Urban Revolution in Oaxaca, Mexico. *Latin American Antiquity*, 15(1), 33-60.
- Barber, S. B. (2005). *Identity, Tradition, and Complexity: Negotiating Status and Authority in Pacific Coastal Mexico*. Ph.D. dissertation: University of Colorado at Boulder.
- Barber, S. B., & Hepp, G. (n.d.). Formative Period Musical Instruments in the lower Río Verde Valley. *In Press*.
- Barber, S. B., & Joyce, A. A. (2007). Polity Produced and Community Consumed: Negotiating Political Centralization Through Ritual in the Lower Río Verde Valley, Oaxaca. In E. C. Wells, & K. L. Davis-Salazar, *Mesoamerican Ritual Economy: Archaeological and Ethnological Perspectives*. Boulder: University of Colorado Press.
- Barber, S. B., & Olvera Sanchez, M. (n.d.). A Divine Wind: The Arts of Death and Music in Terminal Formative Oaxaca. *In Press*.
- Bardawil, L. (1976). The Principal Bird Deity in Maya Art: An Iconographic Study of Form and Meaning. In M. Greene Robertson, *The Art, Iconography and Dynastic History of Palenque, Part III* (pp. 195-209). Pebble Beach, CA: Pre-Columbian Art Research and the Robert Louis Stephenson School.
- Baxter, M. (2003). *Statistics in Archaeology*. London: Hodder Arnold.
- Bellwood, P. (2006). *First Farmers: The Origins of Agricultural Societies*. Oxford: Wiley-Blackwell.
- Benson, E. P. (1997). *Birds and Beasts of Ancient Latin America*. Gainesville, FL: University Press of Florida.
- Binford, L. (1962). Archaeology as Anthropology. *American Antiquity*, 217-225.
- Blanton, R. E., Feinman, G. M., Kowalewski, S. A., & Nicholas, L. M. (1999). *Ancient Oaxaca: The Monte Alban State*. Cambridge: Cambridge University Press.

- Blanton, R., & Feinman, G. (1984). The Mesoamerican World System: A Comparative Perspective. *American Anthropologist*, 86, 673-682.
- Boos, F. (1966). *The Ceramic Sculptures of Ancient Oaxaca*. New York: A.S. Barnes.
- Bourdieu, P. (1977). *Outline of a Theory of Practice*. Cambridge: Cambridge University Press.
- Bowbrowsky, P. T., & Ball, B. F. (1989). The Theory and Mechanics of Ecological Diversity in Archaeology. In R. D. Leonard, & G. T. Jones, *Quantifying Diversity in Archaeology*.
- Brady, J. E., & Prufer, K. M. (2005). *In the Maw of the Earth Monster: Mesoamerican Ritual Cave Use*. Austin: University of Texas Press.
- Brockington, D. L. (1974). *The Oaxaca Coast Project Reports*. Nashville: Vanderbilt University Publications in Archaeology 8.
- Brumfiel, E. (1996). *Figurines and the Aztec State: Testing the Effects of Ideological Domination*. (R. P. Wright, Ed.) Philadelphia: University of Pennsylvania Press.
- Brumfiel, E. (2004). Meaning by Design: Ceramics, Feasting, and Figured Worlds in Postclassic Mexico. In J. Hendon, & R. Joyce, *Mesoamerican Archaeology* (pp. 239-261). London: Blackwell Publishing.
- Caso, A., & Bernal, I. (1952). *Urnas de Oaxaca*. Mexico City: Memorias del Instituto Nacional de Antropología e Historia No. 2.
- Caso, A., Bernal, I., & R., A. J. (1967). *La cerámica de Monte Alban*. Mexico City: Memorias del Instituto Nacional de Antropología e Historia No. 13.
- Chase, A. F., & Chase, D. Z. (2008). Que no nos Cuentan los Jeroglíficos?: Arqueología e Historia en Caracol, Belice. *Mayab*, 20, 93-108.
- Conkey, M. W. (1978). Style and information in cultural evolution: toward a predictive model for the Paleolithic. In C. L. Redman, M. J. Berman, E. V. Curtin, W. T. Langhorne, N. M. Versaggi, & J. C. Wanser, *Social Archaeology: Beyond Subsistence and Dating* (pp. 61-85). New York: Academic Press.
- Conkey, M. W. (1980). The Identification of Prehistoric Hunter-Gatherer Aggregation Sites: The Case of Altamira. *Current Anthropology*, 21, 609-630.
- Cordy-Collins, A. (1989). The Iconography of Visionary Experience: A Resolve of the Conflict between Ordinary and Non-Ordinary Reality. In D. C. Tkaczuk, & B. C. Vivian, *Cultures in Conflict: Current Archaeological Perspectives*. Calgary: University of Calgary Archaeological Association.
- Covarrubias, M. (1946). El arte "olmeca" o de la venta. *Cuadernos Americanos*, 28, 153-179.

- Cowgill, G. L. (1997). State and Society at Teotihuacan, Mexico. *Annual Review of Anthropology*, 26, 129-161.
- DeBoer, M. W., & Moore, J. A. (1983). The Measurement and Meaning of Stylistic Diversity. *Nawpa Pacha*, 20, 147-162.
- DeBoer, W. R., & Lathrap, D. W. (1979). The Making and Breaking of Shipibo-Conibo Ceramics. In C. Kramer, *Ethnoarchaeology: Implications of Ethnography for Archaeology* (pp. 102-138). New York: Columbia University Press.
- Demarest, A. A. (1992). Archaeology, Ideology, and Pre-Columbian Cultural Evolution. In A. A. Demarest, & G. W. Conrad, *Ideology and Pre-Columbian Civilizations*. Santa Fe: School of American Research Press.
- Demarest, A. A., & Conrad, G. W. (Eds.). (1992). *Ideology and Pre-Columbian Civilizations*. Santa Fe: School of American Research Press.
- DeMarrais, E., Castillo, L. J., & Earle, T. (1996). Ideology, Materialization, and Power Strategies. *Current Anthropology*, 37(1), 15-31.
- Dietler, M. (2001). Theorizing the Feast: Rituals of Consumption, Commensal Politics, and Power in African Contexts. In M. Dietler, & B. Hayden, *Feasts: Archaeological and Ethnographic Perspectives on Food, Politics, and Power* (pp. 65-114). Washington, DC: Smithsonian Institution Press.
- Earle, T. K. (1997). *How Chiefs Come to Power: The Political Economy in Prehistory*. Stanford: Stanford University Press.
- Elson, C. M., & Sherman, R. J. (2007). Crema Ware and Elite Power at Monte Alban: Ceramic Production and Iconography in the Oaxaca Valley, Mexico. *Journal of Field Archaeology*, 32, 265-282.
- Firth, R. (1966). The Social Framework of Primitive Art. In D. Fraser, *The Many Faces of Primitive Art* (pp. 12-33). Englewood Cliffs: Prentice-Hall.
- Flannery, K. (1972). The Cultural Evolution of Civilizations. *Annual Review of Ecology and Systematics*, 2, 399-426.
- Flannery, K., & Marcus, J. (2003). *The Cloud People: Divergent Evolution of the Zapotec and Mixtec Civilizations*. New York: Percheron Press.
- Forde, J. (2006). *Ideology, Identity, and Icons: A Study of Mixtec Polychrome Pottery from Late Postclassic Yuca Dzaa (Tututepec), Oaxaca, Mexico*. M.A. Thesis: University of Colorado, Boulder.



- Geertz, C. (1966). Religion as a Cultural System. In M. Banton, *Anthropological Approaches to the Study of Religion* (Vol. 3, pp. 1-46). New York: ASA Monographs.
- Giddens, A. (1979). *Central Problems in Social Theory*. London: Macmillan.
- Godelier, M. (1977). *Perspectives in Marxist Archaeology*. Cambridge: Cambridge University Press.
- Harris, M. (1964). *The Nature of Cultural Things*. New York: Random House.
- Hendon, J. A. (1991). Status and Power in Classic Maya Society: An Archaeological Study. *American Anthropologist*, 93, 894-918.
- Hendon, J. A. (2003). Feasting at Home: Community and House Solidarity among the Maya of Southeastern Mesoamerica. In T. L. Bray, *The Archaeology and Politics of Food and Feasting in Early States and Empires* (pp. 203-233). New York: Kluwer Academic/Plenum Publishers.
- Hepp, G. (2007). *Formative Period Ceramic Figurines from the Lower Río Verde Valley, Coastal Oaxaca, Mexico*. Unpublished MA thesis: Florida State University.
- Hill, J. N. (1970). *Broken K Pueblo: Prehistoric Social Organization in the American Southwest*. Tucson: University of Arizona Press.
- Hodder, I. (1982). *Symbols in Action*. Cambridge: Cambridge University Press.
- Hodder, I. (1986). *Reading the Past*. Cambridge: Cambridge University Press.
- Hodder, I. (1989). This is not an article about material culture as text. *Journal of Anthropological Archaeology*, 8, 250-269.
- Hodder, I. (1990). Style as Historical Quality. In M. W. Conkey, & C. A. Hastorf, *The Uses of Style in Archaeology*. Cambridge: University of Cambridge Press.
- Hodder, I., & Hutson, S. (2003). *Reading the Past*. Cambridge: Cambridge University Press.
- Hutson, S. (2002). Built Space and Bad Subjects: Domination and Resistance at Monte Alban, Oaxaca, Mexico. *Journal of Social Archaeology*, 2, 53-80.
- Joralemon, P. D. (1971). A Study of Olmec Iconography. In *Studies in Pre-Columbian Art and Archaeology* 7. Washington, DC: Dumbarton Oaks Research Library and Collection.
- Joyce, A. A. (1991). *Formative period occupation in the lower Río Verde Valley, Oaxaca, Mexico: Interregional interaction and social change*. Ph.D. Dissertation: Rutgers University.
- Joyce, A. A. (2000). The Founding of Monte Alban: Sacred Propositions and Social Practices. In M. A. Dobres, & J. Robb, *Agency in Archaeology* (pp. 71-91). London: Routledge Press.

- Joyce, A. A. (2004). Sacred Space and Social Relations in the Valley of Oaxaca. In J. Hendon, & R. Joyce, *Mesoamerican Archaeology* (pp. 192-216). Oxford: Blackwell Publishing.
- Joyce, A. A. (2006). The Inhabitation of Río Viejo's Acropolis. In E. C. Robertson, J. D. Seibert, D. C. Fernandez, & M. U. Zender, *Space and Spatial Analysis in Archaeology*. Calgary: University of Calgary Press.
- Joyce, A. A. (2010). *Zapotecs, Mixtecs, and Chatinos: The Peoples of Southern Mexico*. Oxford: Blackwell Publishing.
- Joyce, A. A., & Winter, M. (1996). Ideology, Power, and Urban Society in Pre-Hispanic Oaxaca. *Current Anthropology*, 37(1), 33-47.
- Kintigh, K. W. (1984). Measuring Archaeological Diversity by Comparison with Simulated Assemblages. *American Antiquity*, 44-54.
- Kintigh, K. W. (1989). Sample Size, significance, and measures of diversity. In R. Leonard, & G. Jones, *Quantifying Diversity in Archaeology*. Cambridge: University of Cambridge Press.
- Kowalewski, S. A., Balkansky, A. K., Stiver Walsh, L. R., Pluckhahn, T. J., Chamblee, J. F., Perez Rodriguez, V., et al. (2009). *Origins of the Nuu*. Boulder: University of Colorado Press.
- Lesure, R. G. (2004). Shared Art Styles and Long-Distance Contact in Early Mesoamerica. In J. A. Hendon, & R. Joyce, *Mesoamerican Archaeology* (pp. 73-96). Oxford: Blackwell Publishing.
- Levine, M. N., Joyce, A. A., & Goldberg, P. (2004). Earthen Mound Construction at Río Viejo on the Pacific Coast of Oaxaca, Mexico. Montreal: Poster presented at the 69th Annual Meeting of the Society for American Archaeology.
- Mann, M. (1986). *The sources of social power*. London: Cambridge University Press.
- Marcus, J. (1989). Zapotec Chiefdoms and the Nature of Formative Religions. In R. J. Sharer, & D. C. Grove, *Regional Perspectives on the Olmec* (pp. 148-197). Washington, DC: Dumbarton Oaks Research Library and Collection.
- Marcus, J., & Flannery, K. (1994). Ancient Zapotec Ritual and Religion: An Application of the Direct Historical Approach. In C. Renfrew, & E. B. Zubrow, *The Ancient Mind: Elements of Cognitive Archaeology* (pp. 55-74). Cambridge: Cambridge University Press.
- Marcus, J., & Flannery, K. (1996). *Zapotec Civilization: How Urban Society Evolved in Mexico's Oaxaca Valley*. London: Thames and Hudson.
- Marx, K., & Engels, F. (1970 [1846]). *The German Ideology*.

- McCartney, P. H., & Glass, M. F. (1990). Simulation Models and the Interpretation of Archaeological Diversity. *American Antiquity*, 55(3), 521-536.
- Melmed, A. (2006). *Health, Diet, and Behavior in Prehistoric Oaxaca*. M.A. Thesis: San Diego State University.
- Miller, D., & Tilley, C. (Eds.). (1984). *Ideology, Power, and Prehistory*. Cambridge: Cambridge University Press.
- Miller, M. E., & K., T. (1993). *The Gods and Symbols of Ancient Mexico and the Maya: An Illustrated Dictionary of Mesoamerican Religion*. London: Thames and Hudson.
- Miller, M., & Martin, S. (2004). *Courtly Art of the Ancient Maya*. London: Thames and Hudson.
- Monaghan, J. (1995). *The Covenants with Earth and Rain*. Norman: University of Oklahoma Press.
- Paddock, J. (1985). Painted Architecture and Sculpture in Ancient Oaxaca. In E. Hill Boone, *Painted Architecture and Polychrome Monumental Sculpture in Mesoamerica*. Washington, DC: Dumbarton Oaks.
- Panofsky, E. (1955). Iconography and Iconology: An Introduction to the Study of Renaissance Art. In *Meaning in the Visual Arts* (pp. 26-54). Garden City: Doubleday Anchor.
- Parker Pearson, M. (1984). Social change, ideology and the archaeological record. In M. Spriggs, *Marxist perspectives in archaeology* (pp. 59-71). Cambridge: Cambridge University Press.
- Peirce, C. S. (1998). *The Essential Peirce: Selected Philosophical Writings: 1893-1913*. Bloomington: Indiana University Press.
- Pelc, J. (1986). Iconicity, Iconic Signs or Iconic Uses of Signs. In P. Bouissac, M. Herzfeld, & R. Posner, *Iconicity: Essays on the Nature of Culture*. Kilchberg: Braun and Lamparter.
- Pohl, M. (1983). Maya Ritual Faunas. In R. M. Leventhal, & A. L. Kolata, *Civilization in the Ancient Americas: Essays in Honor of Gordon R. Willey* (pp. 55-103). Albuquerque: University of New Mexico Press.
- Preucel, R. W. (2006). *Archaeological Semiotics*. Blackwell Publishing: Oxford.
- Preucel, R. W., & Bauer, A. A. (2001). Archaeological Pragmatics. *Norwegian Archaeological Review*, 34(2), 85-96.
- Renfrew, C. (2004). Towards a Rheory of Material Engagement. In E. DeMarrais, C. Gosden, & C. Renfrew, *Rethinking Materiality: The Engagement of the Mind with the Material World*. Cambridge: McDonald Institute for Archaeological Research.

- Rice, P. (1987). *Pottery Analysis: A Sourcebook*. Chicago: University of Chicago Press.
- Rice, P. (1989). Ceramic diversity, production, and use. In R. D. Leonard, & G. T. Jones, *Quantifying Diversity in Archaeology* (pp. 109-117). Cambridge: Cambridge University Press.
- Rindos, D. (1989). Diversity, Variation, and Selection. In R. D. Leonard, & G. T. Jones, *Quantifying Diversity in Archaeology* (pp. 13-23). Cambridge: Cambridge University Press.
- Rosenswig, R. M. (2007). Beyond identifying elites: Feasting as a means to understand early Middle Formative society on the Pacific Coast of Mexico. *Journal of Anthropological Archaeology*, 1-27.
- Saussure, F. (1983 [1916]). *Course in General Linguistics*. (R. Harris, Trans.) London: Duckworth.
- Schele, L., & Freidel, D. (1990). *A Forest of Kings*. New York: William Morrow.
- Schele, L., & Miller, M. E. (1986). *The Blood of Kings: Dynasty and Ritual in Maya Art*. New York: George Braziller, Inc.
- Sellen, A. T. (2002). Storm-God Impersonators from Ancient Oaxaca. *Ancient Mesoamerica*, 13(1), 2-19.
- Sellen, A. T. (2007). *El Cielo Compartido: Deidades y ancestros en las vasijas efigies zapotecas*. Merida: Universidad Nacional Autonoma de Mexico.
- Shanks, M., & Tilley, C. (1987). *Social Theory and Archaeology*. Cambridge: Polity Press.
- Sharer, R., & Ashmore, W. (2003). *Archaeology: Discovering Our Past*. New York: McGraw-Hill.
- Shennan, S. (1997). *Quantifying Archaeology* (2nd ed.). Iowa City: University of Iowa Press.
- Smith, M. E. (2005). City Size in Late Postclassic Mesoamerica. *Journal of Urban History*, 31, 403-434.
- Spencer, C. S., & Redmond, E. M. (2001). Multilevel Selection and Political Evolution in the Valley of Oaxaca, 500-100 B.C. *Journal of Anthropological Thought*, 20, 195-229.
- Staller, J., Tykot, R., & Benz, B. (2006). *Histories of Maize in Mesoamerica: Multidisciplinary Approaches*. Walnut Creek, CA: Left Coast Press, Inc. .
- Taube, K. (1987). A Representation of the Principal Bird Deity in the Paris Codex. In *Research Reports on Ancient Maya Writing 6*. Washington, DC: Center for Maya Research.
- Taube, K. (1996). The Olmec Maize God: The Face of Corn in Formative Mesoamerica. *Res*, 39-81.
- Taube, K. (2000). Lightning Celts and Corn Fetishes: THE Formative Olmec and the Development of Maize symbolism in Mesoamerica and the American Southwest. In J. E. Clark, & M. E. Pye, *Olmec*

- Art and Archaeology in Mesoamerica* (pp. 297-337). Washington, DC: Studies in the History of Art 58.
- Taube, K. (2001). The Breath of Life: the Symbolism of Wind in Mesoamerica and the American Southwest. In V. M. Fields, & V. Zamudio-Taylor, *The Road to Aztlan: Art from a Mythic Homeland* (pp. 102-123). Los Angeles: Los Angeles County Museum of Art.
- Taube, K. (2009). El dios de la lluvia olmeca. *Arqueologia Mexicana*, 16(96), 26-29.
- Toshihara, K. (2004). Cupisnique Iconography: Ideology and its Manifestations in an Ancient Andean Culture. *Journal of Latin American Lore*, 22(1), 39-83.
- Turner, V. (1967). *A Forest of Symbols: Aspects of Ndembu Ritual*. Ithaca, NY: Cornell University Press.
- Urcid, J. (1993). The Pacific Coast of Oaxaca and Guerrero: The Westernmost Extent of Zapotec Script. *Ancient Mesoamerica*, 4, 141-165.
- Urcid, J. (2005). *The Zapotec Scribal Tradition: Knowledge, Memory, and Society in Ancient Oaxaca*. Coral Gables, FL: Foundation for the Advancement of Mesoamerican Studies, Inc.
- Urcid, J., & Joyce, A. A. (2001). Carved Monuments and Calendrical Names: The Rulers of Río Viejo, Oaxaca. *Ancient Mesoamerica*, 12(2), 199-216.
- Urcid, J., & Winter, M. (2003). Nuevas variantes glificas zapotecas. *Mexicon*, 25(5), 123-128.
- Vega, C. (1984). El Curso del sol en los glifos de la ceramica azteca tardia. *Estudios Cultura Nahuatl*, 125-170.
- White, L. (1959). *The Evolution of Culture: the Development of Civilization to the Fall of Rome*. New York: McGraw-Hill.
- Wiessner, P. (1989). Style and Changing Relations Between the Individual and Society. In I. Hodder, *The Meaning of Things: Material Culture and Symbolic Expression* (pp. 255-260). London: Harper Collins.
- Winter, M. C., & Joyce, A. A. (1987). *Excavaciones de rescate en Cerro de la Cruz, 1986: Un informe preliminar*. Report submitted to INAH.
- Winter, M. C., & Joyce, A. A. (1987). *Excavaciones en Barra Quebrada, 1986: un informe preliminar*. Report submitted to INAH.
- Wobst, M. (1977). Stylistic behavior and information exchange. In C. E. Cleland, *Papers for the Director: Research Essays in Honor of James B. Griffin* (pp. 317-342). Ann Arbor: University of Michigan Museum of Anthropology.

Workinger, A. (2002). *Coastal-Highland Interaction in Prehispanic Oaxaca, Mexico: The Perspective from San Francisco d Arriba*. Ph.D. Dissertation: Vanderbilt University.

Zeitlin, R. N., & Joyce, A. A. (1999). The Zapotec Imperialism Argument: Insights from the Oaxaca Coast. *Current Anthropology*, 40(3), 383-392.