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SYMBOLS AND SOCIOPOLITICAL ORGANIZATION: MESOAMERICAN ICONOGRAPHY IN THE U.S. SOUTHWEST/NORTHWEST MEXICO

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SYMBOLS AND SOCIOPOLITICAL ORGANIZATION: MESOAMERICAN ICONOGRAPHY IN THE U.S. SOUTHWEST/NORTHWEST MEXICO

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF ANTHROPOLOGY

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To Baie.

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Abstract

Research associated with long-distance interaction often focuses on the dominating influence of large complex societies on communities in outlying regions. In contrast, this dissertation explores how intermediate societies with different types of sociopolitical organization locally integrated foreign ideas. As a case study, I examine the interaction between the U.S. Southwest/northwest Mexico (SW/NW) and Mesoamerica by conducting an iconographical analysis of Mesoamerican symbols found on pottery that was produced during the late prehistoric period (A.D. 1200-1450) in the Salado and Casas Grandes regions.

Communities in these two areas were organized in distinctly different ways. Salado sites are widespread across central/southeastern Arizona and southwestern New Mexico and in some cases were organized around dispersed regional centers. Sites in the Casas Grandes region were established around one central, primary site, Paquimé, which served as a ritual and ceremonial center of authority for surrounding communities. While the social and political structure of their societies differed, people living in both the Salado and Casas Grandes regions produced vibrant polychrome pottery using similar iconography, including symbols thought to have originated in Mesoamerica.

Helms (1993) has suggested that goods and knowledge from foreign contexts have been considered by some societies to possess special powers due to their association with distant communities. Following Helms's (1993) theoretical model and the symbolic perspectives developed by Robb (1998), I identify variation in the types and distribution of Mesoamerican symbols associated with communities of varying social hierarchy in

order to determine if the integration of foreign symbols in the Salado and Casas Grandes regions were considered *symbols as girders*, those that worked to promote group solidarity, or *symbols as tokens*, those used by elites to legitimize their authority through their association with sacred foreign knowledge.

Using a revised version of Panofsky's iconographical analysis, I analyzed the decorated surfaces of 639 whole vessels, which were either Salado or Chihuahuan Polychromes with at least regional or site-level provenience. In order to determine if people in the Salado and Casas Grandes regions differentially integrated foreign Mesoamerican symbols into their existing iconographical systems, I examined the distribution of these symbols among sites organized at different levels of social hierarchy, which I labeled more or less hierarchical.

Results from the analysis indicate that elites/leaders at and around Paquimé in the Casas Grandes region used their ties to Mesoamerica as a way to legitimize their authority. By adopting and elaborating Mesoamerican symbols and accumulating exotic goods such as macaws, shell, and copper bells, these leaders signaled their connection to the foreign source of their power (symbols as tokens). In addition, local and foreign symbols were found at both more and less hierarchical sites in this region, also suggesting that these symbols were associated with a common ideology or worldview (symbols as girders). In the Salado region, however, "foreign" iconography was actually found principally to have originated in the SW/NW. These symbols were also distributed equally among more and less hierarchical Salado sites, indicating that the iconography mainly represented an ideology that was a social and existential girder.

Chapter 1: Foreign Symbols and Long-Distance Interaction

The study of long-distance interaction and exchange has been valuable in informing interpretations of interregional relationships, trade, and political hegemony. Many archaeologists have focused on the dominating influence of distant societies and their impact on sociopolitical organization in outlying regions. In contrast, this study works to understand how local communities adopted and adapted foreign traditions and characteristics for their benefit. By examining the ways foreign symbols were used and integrated by local populations, I also demonstrate how the study of iconographical systems among communities of differing social structure can inform our interpretations of sociopolitical organization in societies of intermediate complexity.

This research explores the local integration of foreign iconographic symbols (graphic representations) resulting from long-distance interaction. I take an in-depth look at the relationship between Mesoamerica and the U.S. Southwest/northwest Mexico (SW/NW) as a case study. Many Mesoamerican goods have been found in the SW/NW, including exotic items such as copper bells, macaws, marine shell, iron pyrite mirrors, as well as food items such as chile and cacao. Other aspects of Mesoamerican culture have also been identified in the form of architecture, such as ballcourts, and iconography that appears on ceramics and as rock art.

Too often, foreign goods and ideologies are considered in questions of how Mesoamerican polities influenced SW/NW communities. I take a different approach by comparing and contrasting how people associated with the Salado and Casas Grandes cultural traditions during the late prehistoric period (A.D. 1200-1450) differentially

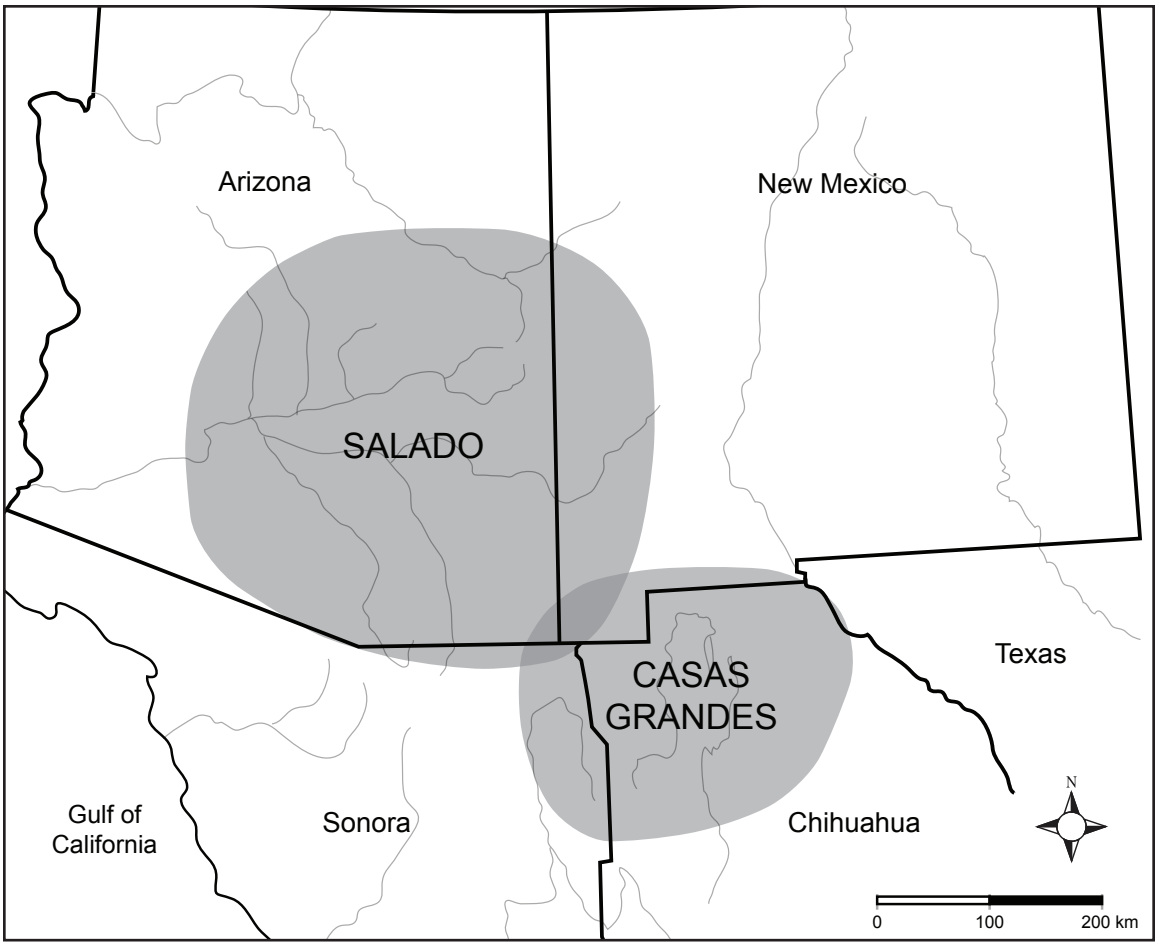


Figure 1.1. Map of the Salado and Casas Grandes regions.

integrated foreign, Mesoamerican iconography into their own local cultures (Figure 1.1).

I principally draw from two theoretical perspectives associated with symbolism and long-distant relationships. In her comprehensive study of the symbolism of Casas Grandes, VanPool (2003b:360-361) suggested that elites at Paquimé gained power through their knowledge of and connection to the "distant spiritual world" associated with Mesoamerica. She referenced the work of Mary Helms (1993), who suggested that the distinction between local and foreign is significant in the way ideas and items are viewed by prehistoric societies. Helms (1993) presented a model of social structure and hierarchical authority based on the dichotomy of "inside" and "outside" worlds and

showed how links to the outside world can work to increase the status, prestige, and power of aspiring and established leaders.

In a review of studies associated with symbolic archaeology, Robb (1998:332) also discussed how other archaeologists have interpreted the use of symbols by leaders and elites to be tokens or badges of authority (i.e., symbols as tokens). He also found that archaeologists have identified some prehistoric symbols to be representative of an existential and ideological structure used by people to organize their cognitive and social worlds (i.e., symbols as girders) (Robb 1998:333).

Drawing from both Helms's (1993) and Robb's (1998) studies, I developed an interpretive model for the outcomes of my analysis. I suspected that if foreign iconography was being used by elites as tokens of power, its distribution will be exclusive to those who held some sort of authority over others within that society. On the other hand, if Mesoamerican iconography was found widely dispersed among populations of varying levels of social hierarchy, it may represent a common religion or worldview and may suggest that it acted as an ideological girder.

Cultural Landscape of the Southwest/Northwest (A.D. 1200-1450)

The late prehistoric period represents a significant time in the cultural history of the SW/NW. The archaeological record suggests that there was widespread reorganization in this region evidenced by aggregation, population growth, and migration (Clark 2001; Haury 1958; Lindsay 1987). Cordell (1997:400) has characterized this period as one of "crystallization," where "many specific forms, designs, symbols, or motifs can be traced to much earlier periods, but in the fourteenth century, they came together in new ways, forming new patterns." She suggested that this crystallization of

elements represents "innovation" for this period of time.

While populations declined in the western and northern parts of the SW/NW (Hohokam, Kayenta, and Mesa Verde regions) during the transition from the twelfth to thirteenth century, others began to experience significant growth and reorganization. This includes communities in the Tonto Basin in east-central Arizona, along the Casas Grandes river in northern Chihuahua, Mexico, along the Rio Grande/Rio Bravo river in New Mexico and along the U.S./Mexico border, and on the Mogollon Rim and in the Mogollon Uplands in southeastern Arizona/southwestern New Mexico (Lekson 2008:136). I focus on three areas in particular – the Tonto Basin in central Arizona, southeastern Arizona/southwestern New Mexico, and northern Chihuahua, Mexico – where new Salado and Casas Grandes communities began to arise and thrive in the thirteenth and fourteenth centuries.

In a preliminary comparison of the Salado and Casas Grandes regions, VanPool et al. (2006) suggested that differences in sociopolitical organization, such as settlement hierarchies, should be considered as evidence supporting the idea that people in these two regions participated in different religious systems (VanPool et al. 2006:242-246). They also emphasized differences in iconography between the Salado and Casas Grandes traditions as representing a schism in ideological continuity.

While VanPool et al. (2006) focused on differences in religious institutions, I examine differences in the integration of foreign iconographic symbols and their relationship to sociopolitical organization. I selected the Salado and Casas Grandes regions for this study because they involved noticeably different systems of organization where people were using similar systems of iconography, including iconographic

symbols that likely derived from Mesoamerica. Salado sites were architecturally and hierarchically diverse, and this system could be described as one of dispersed regional centers. Some Salado sites located in the Tonto Basin and in the San Pedro Valley of central and southeastern Arizona demonstrate a type of community organized around platform mounds that likely facilitated a moderate level of centralized political and ceremonial authority (Clark 2001; Rice 1998, 2000; Simon and Jacobs 2000). For the most part, people associated with the Salado tradition who inhabited southeastern Arizona and southwestern New Mexico lived in smaller, less-centralized communities with less social hierarchy. These patterns of community organization suggest that the Salado region was made up of a series of autonomous, middle-level polities, no one of which was dominant.

The Casas Grandes region, on the other hand, had an obvious center at the site of Paquimé in northern Mexico, which had no peers. Its role as a major polity for smaller surrounding communities is evidenced by its massive size and the large quantities of exotics and public ritual features. Whalen and Minnis (2001:205) have characterized the late prehistoric societies of the Casas Grandes region as achieving an "intermediate level of complexity." They have also suggested that sites surrounding Paquimé participated in this core polity's political and social structure to varying degrees; communities closer to the core were more integrated into the social hierarchy and ideology of the center, whereas those on the periphery were less involved with the sociopolitical system centered at Paquimé (Whalen and Minnis 2001, 2009).

Although sociopolitical organization differed between these regions (dispersed regional centers versus one primary center), people participating in the Salado and Casas

Grandes traditions were using similar iconographical systems at around the same time during the thirteenth and fourteenth centuries. This iconography included common local motifs/designs as well as foreign iconography that likely derived from Mesoamerica. In addition, both regions included communities that could be characterized as *more* or *less* hierarchical. By more hierarchical, I am referring to sites that were associated with some centralized authority and/or participated in a higher level of social stratification. Less hierarchical sites are those that were less centrally organized and more egalitarian in their social structure. To clarify, I do not mean to suggest that all hierarchical communities are also central places, but in this comparison of the Casas Grandes and Salado regions, I found that centrality and hierarchy are characteristics that appear to coexist. The labels "more hierarchical" and "less hierarchical," as defined above, are used as general identifiers for sites specific to the two regions analyzed in this study.

In order to compare more and less hierarchical sites in the Salado and Casas Grandes regions, I analyzed 639 whole vessels with either regional or site-level provenience. These were all Salado Polychromes (also called Roosevelt Red Wares) and Chihuahuan Polychromes associated with the Salado and Casas Grandes regions respectively. The examination of these vessels included an iconographical analysis of their decorated surfaces and the identification of 26 different motifs and their variations (Appendix A). In order to understand how foreign iconographic symbols were integrated into existing, local iconography, I recorded sixteen local motifs commonly depicted on pottery in the SW/NW and also identified ten motifs considered to be Mesoamerican (i.e., foreign). I then compare the distributions of both local and foreign iconography among Casas Grandes and Salado sites and identify patterns indicating variation in how

iconographic symbols were distributed among communities that operated at varying levels of social hierarchy (more hierarchical versus less hierarchical).

Before I began the iconographical analysis, I developed expectations for the results of this study following the theoretical framework of Helms (1993) and Robb (1998):

Expectation 1: For Casas Grandes, I expected to see a widespread distribution of local and Mesoamerican iconographic symbols among both more and less hierarchical sites if these symbols were being used as organizational girders. In contrast, if Mesoamerican iconography was used as a token of power by elites or leaders, it should be concentrated at Paquimé and at communities located close to this core polity. In addition, these foreign iconographic symbols should be less common at outlying, less hierarchical sites.

Expectation 2: For the Salado region, less hierarchical sites in southeastern Arizona and southwestern New Mexico were less centrally and hierarchically organized compared to more hierarchical platform mound sites in the Tonto Basin. If Mesoamerican iconography was spread broadly among both more and less hierarchical sites, it could be identified as a symbolic girder. On the other hand, if Mesoamerican iconographic symbols were found to be concentrated at platform mound sites in the Tonto Basin, these symbols were likely used more as tokens of power by aspiring elites.

The results of the distributional analysis of both local and foreign iconography among the Salado and Casas Grandes regions show that they were broadly distributed among both more and less hierarchical sites, suggesting that they were being used as ideological girders possessed by all members of the society. Although these general patterns of distribution existed, I found that Mesoamerican iconography was slightly

more common at Paquimé and sites around this core polity (i.e., more hierarchical sites), suggesting that foreign ideology expressed symbolically may have also been used as tokens of power/authority by elites at the core of the Casas Grandes region.

In order to explore this variation further, I examined two other lines of evidence to clarify how these foreign iconographic symbols were used by people participating in these two traditions. First, I conducted a preliminary survey of ancestral pottery traditions from which Chihuahuan and Salado Polychromes may have derived. I found that, for the Salado, much of the "Mesoamerican" iconography existed among previous SW/NW traditions, suggesting less direct interaction between Salado and Mesoamerican communities. Second, I compared the distribution of foreign iconography to other "Mesoamerican interaction markers," which Nelson (2006:345) defines as "a variety of archaeological patterns that are reminiscent of Mesoamerican counterparts" including "objects, practices, and styles." These interaction markers can be iconography, rock art, pottery style, shell ornaments, architectural forms, and/or symbolism. A few of these, including macaws, ballcourts, shell and copper items, are explored in more detail and provide multiple lines of evidence that further illustrate the differential use of foreign iconography and ideology by these societies in the SW/NW. In particular, this additional evidence supports the results of the iconographical analysis, which indicates that elites associated with Casas Grandes were using their links to Mesoamerica as a way to legitimize their authority. Furthermore, they show that these symbols were not used as tokens of authority among those inhabiting Salado sites.

Organization of Chapters

The principle questions of this research are how do communities incorporate

foreign symbols into their societies, and what do these patterns suggest in relation to varying systems of sociopolitical organization? In order to address these questions, it is necessary to first provide the relevant theoretical background as it pertains to the archaeological study of symbolism and sociopolitical organization. In Chapter 2, I trace the history of symbolic archaeology and how philosophers and anthropologists have contributed to the theoretical understanding of prehistoric symbols as well as their relationship to political authority. I also present Robb's (1998) categories for symbolic research in archaeology and Helm's (1993) model for how foreign goods/ideas derive value, both of which provide a framework appropriate for the questions at hand. Research dedicated to the role of symbols in political and social organization/hierarchy is reviewed as well.

The third chapter presents a review of the relationship between the SW/NW and Mesoamerica, including the history of the debate on the nature of this long-distance relationship for sites in both the Salado and Casas Grandes regions. In addition, many archaeologists use the term "Mesoamerica" very loosely, and so I address this issue by defining the boundaries of this region. Finally, I present relevant background information on settlement patterns, chronology, and ceramics associated with the Salado and Casas Grandes traditions. I also examine conclusions from previous studies that suggest possible models of political and social organization.

Chapter 4 contains a synthesis of the symbols that have been labeled "Mesoamerican" along with a brief description of their forms and illustrations that depict how they appear throughout the SW/NW. This chapter also reviews some of the possible origins for these symbols.

The methods and description of data are located in Chapter 5, which includes a brief discussion of the work of Erwin Panofsky (1962, 1972[1955]), an art historian who developed methods for determining the meaning of iconography. Because his approach was originally designed to interpret works of art during historical periods, such as Renaissance art, his methods depend on historical records used to gain further insight into meaning. Kubler (1967, 1969, 1970) and Phillips and Brown (1978) recognized that Panofsky's approach would not be directly applicable to archaeology, and so they revised these methods for the analysis of prehistoric iconography. I review these and conclude with my own revisions, which form the foundation for the methods of analysis used in this study. I also provide details on the sources of my data in this chapter, along with the technical methods used to collect and analyze the iconography on the sample of pottery examined.

Chapter 6 presents the results of the iconographical analysis, which took place in two stages. The first involved identifying differences in design layout and motif variation between the pottery types (Salado Polychromes versus Chihuahuan Polychromes). The second stage of analysis compared and contrasted differences in the distribution of iconography among more and less hierarchical sites in both the Salado and Casas Grandes regions.

The interpretations for these results are presented in Chapter 7, where I analyze the patterns resulting from the iconographical analysis in light of two other lines of evidence. The first involves the origins of SW/NW iconography and identifying which design elements may have derived from local rather than foreign contexts. Second, I compare the distribution of iconography to patterns of other Mesoamerican interaction

markers, including ballcourts, macaws, shell, and copper bells.

My concluding remarks in Chapter 8 summarize the results and review models of the structure of sociopolitical organization for the Salado and Casas Grandes regions, making further suggestions that result from this study. I also revisit Haury's (1976) interpretation of the nature of Mesoamerican and SW/NW interaction and discuss how foreign iconography and other markers of interaction in this case are "reflections" of distant places rather than "influences" from distant places.

Chapter 2: Symbols and Sociopolitical Organization

John Robb (1998:341) stated that there is "no specific methodology unique to the archaeology of symbols," but archaeologists have recently made great strides in iconographical and symbolic analysis (c.f. Brown 2007; Houston 2001; Houston et al. 2000; Knight et al. 2001; Mathews and Garber 2004; Palka 2002; Reilly and Garber 2007, Steponaitis and Knight 2004). Others archaeologists have drawn from symbolic studies in sociocultural anthropology during the 1960s and 1970s, as well as the work of the nineteenth century philosopher Charles Sanders Peirce who developed an interpretive system of signs (Cohen 1979; Douglas 1970; Firth 1973; Geertz 1973; Grieder 1975; Hodder 1982b; Nöth 1990; Ortner 1979; Preucel 2006; Turner 1975).

All of these contributions provide a foundation for symbolic inquiry, and this chapter begins with a summary of some important aspects of symbolic theory relevant to this study. I follow this review with a description of symbolic categories defined by Robb (1998) and with Helms's (1993) dichotomy of outside and inside worlds, which provide a framework for the expectations of this study. I then present background information on the relationship between social hierarchy and complexity. Finally, I explore how archaeologists have explained ways in which people in positions of leadership may have used symbols.

From Semiotics to Symbolic Archaeology

Leslie White (1975 [1949]) once stated that "all human behavior consists of, or is dependent upon, the use of symbols. Human behavior is symbolic behavior; symbolic behavior is human behavior. The symbol is the universe of humanity." In this context

and in the discussion that follows, the word "symbol" refers to anything (objects, sounds, actions, images, ideas, etc.) that represent something else.

Philosophers such as Plato and Aristotle first developed the idea that symbols embody a significant element of humankind and human cognition (Nöth 1990:15). Over centuries, numerous thinkers, philosophers, and authors considered different aspects of the nature and meaning of signs and symbols, which eventually influenced semiotics, a field that crosses multiple disciplinary boundaries. Charles Sanders Peirce (1839-1914) has been touted as "America's greatest philosopher" and is credited as the "founder of modern semiotics" (Nöth 1990:39-40). He saw semiotics as a way to view the structure of the universe and considered human cognition and perception of reality to be based on the functional use and organization of *signs*. Signs and symbols are integrated into all aspects of human interaction and existence, and this has captured the attention of scholars from a number of different disciplines. A pansemiotic view of the nature of humans and their universe led to the development of Peirce's detailed categorization of signs which involves a triadic system of categories that include the representamen (the sign itself), the object (what the sign represents), and the interpretant (the source of the meaning of the sign) (Nöth 1990:42-45). Falling within this framework, he developed the classification of signs in regards to how the object and representamen are related as being icons, indexes, or symbols.

Peirce was not alone in his development of a system of signs. Ferdinand de Saussure also contributed to semiotics, but he made an impact principally on the linguistic community. Peirce's contributions are considered to be more generalized, incorporating "language, social practices, and material culture" (Preucel 2006:90).

Peirce's triadic model also incorporates the role of the interpretant into the nature of symbols, which introduces the idea of agency into the production, manipulation, and use of symbols.

The influence of Peirce on American anthropology is evident in the 1970s, at which time there appeared a flurry of publications, some of which included references to his philosophy of semiotics (c.f. Firth 1973). Preucel (2006:67) stated that these "scholars emphasize different aspects of Peirce's writings for different purposes." He also pointed out that this has resulted in the lack of any "coherent approach or school" of semiotics in anthropology, but instead it contributed to the development of symbolic, structural, and cognitive anthropology.

In addition to Peirce and Saussure, early symbolic studies in anthropology derived from the work of Morgan, Tylor, and Frazer, culminating at the point when theories dedicated to symbols began to crystallize (Firth 1973:128-129). This crystallization in symbolic inquiry can be traced to the beginning of the twentieth century with the early work of Boas (1955[1927]) on "primitive art" and Kroeber's 1901 dissertation on decorative symbolism among the Arapaho.

By the 1960s and 1970s, Victor Turner's works had presented themes of ritual and symbolism (Turner 1967, 1974, 1975). Other publications produced in the 1970s addressed various aspects and discussions on symbols such as their role in political organization, social complexity, and power relations between elites and commoners (Cohen 1979; Douglas 1970; Firth 1973; Geertz 1973; Grieder 1975; Ortner 1979; Turner 1975), and these marked the putative development of symbolic anthropology. Firth stated that the 1960s and 1970s represented a time in which theories on symbolic studies began

to solidify. He said that over time "symbolic representation has attained an identity and a dignity lacking before. Symbols have become important, not for what they represent, but for what they themselves are thought to express and communicate" (Firth 1973:166).

Later, Cohen (1979:110) may have foreseen the fate of what had been prematurely categorized as "symbolic anthropology" when he stated that "so far, the different individual contributions in this field do not seem to add up to a *discipline.*" After this point, symbolic anthropology did not make a significant impact as a defined "discipline" within anthropology. Symbolic archaeology had an even shorter life span, being introduced at the beginning of the post-processual critique (Hodder 1982a). It later melded into what would be termed *interpretive archaeology* (Shanks and Hodder 1995; Thomas 2001).

Recently, Preucel (2006) reintroduced Peirce's triadic model of the interpretation of signs into archaeology. Much of his book, *Archaeological Semiotics*, introduces the reader to the contributions of Saussure and Peirce to anthropological research and suggests that Peirce's model of the interpretation of signs can be valuable to the field of archaeology. Preucel shows how this triadic model of signs applied to artifacts and their contexts can aid in a better interpretation of prehistoric peoples. In two case studies, he shows how archaeologists can operationalize Peirce's theories. The first explores the semiotic ideologies of the nineteenth-century Brook Farm, where Transcendentalism and Fourierism coexisted and were evident in remnants of the community's architecture (Preucel 2006:175-209). Through an examination of the changes in ceramic iconography over time, Preucel (2006:210-246) also used semiotics to understand how after the Pueblo Revolt there was a revival in pre-Spanish ideology that united yet maintained distinction

between the diverse Pueblo people who had aggregated after the revolt. Archaeologists have also used Peircian semiotics in research on other material symbols such as architecture, ceramic decoration, and ritual imagery (Capone and Preucel 2002; Carrasco 2005).

Symbolism is an integral part of the archaeological record and can provide rich insight into ancient cultures. Archaeologists have found symbols to represent many aspects of social institutions such as religious, political, and ideological systems. They have also been recognized as tools for acquiring political prestige and power, but assessing the meaning of symbolic systems is a complex process. Deciphering their use requires an interpretation of cognitive reasoning and agency-driven, individual aspirations. These are equally difficult to understand, but by building on the foundation of symbolic archaeology reviewed above, this study will contribute to a better understanding of how foreign symbols factor into distant communities in the hands of local agents.

Perspectives in Symbolic Archaeology

In a 1998 article, John Robb reviewed the study of symbols in archaeology in an attempt to determine where archaeology stood on this subject. He synthesized a number of sources in which archaeologists had explored this concept and had made progress in understanding how it works in the greater study of prehistoric cultures. Robb also mentioned Christopher Hawkes's (1954) analysis of the levels of difficulty in interpreting different phenomena found in the archaeological record, which has been called the "ladder of inference" (Robb 1998:330). Hawkes (1954:161-162) listed these general types of phenomena beginning with the easiest to interpret to the most difficult. First,

the techniques to produce the remains found in the archaeological record are the least difficult to infer. The subsistence-economics of a group follow as the second type of phenomenon, which he characterized as fairly easy to interpret. The third, and somewhat harder aspects to decipher, are the socio-political institutions of a society. On the highest rung of the "ladder of inference" lie religious and spiritual institutions, representing the most difficult inference in archaeology. Hawkes (1954:162) regarded symbolic representations of ideology as part of these religious institutions.

Many publications have tackled symbolism in archaeology and have contributed to its methodology. Robb (1998) reviewed a number of them, trying to show how much progress had already been made. He categorized the research on symbolism into three different perspectives: symbols as tokens, symbols as girders, and symbols as tesserae (Robb 1998:332).

The first category, "symbols as tokens," refers to how they represent meanings and are manifested materially. These tokens are considered to possess a primary purpose, as objects that transmit information (Robb 1998:332). The category "symbols as girders" refers to the use of symbols by people to structure their mental and social world (Robb 1998:333). The last point of view, "symbols as tesserae," is described as the treatment of symbols as fragments of a mosaic, that when assembled, create meaning for the people experiencing them (Robb 1998:337-338).

Robb's categories of symbols as tokens and as girders are especially useful for this study. To elaborate, he describes symbolic tokens to be "badge-like," meaning these symbols provided leaders with authority needed to perpetuate their status in a hierarchical system (Robb 1998:340). The information transmitted through symbols is commonly

interpreted as being used by elites for the purpose of legitimization and prestige (Cohen 1979; DeMarrais et al. 1996; Firth 1973; Turner 1975). In other words, elites or leaders have used symbols that identified them with a greater power or religious system with the intention of gaining followers who would offer tribute in the form of goods or services.

Symbols can also be used as girders, a means of graphic expression of a system of belief or social reality. Girders aid in organizing social relationships and are often material representations of religion. Robb (1998:335) describes this perspective as being a very structural approach, in which he states that "humans orient themselves in the world, think, and act through learned, culturally specific structures that recur wherever they organize themselves and their material productions." The organization of one's existence and reality can be materially manifested as symbols, acting as girders that support and perpetuate cultural traditions.

I will be using these categories as interpretive models for the outcomes of my analysis. I suspect that if elites used foreign iconographic symbols as tokens of power, their distribution will be exclusive to those who held some sort of authority over others within that society. On the other hand, if these symbols were used more widely, they may represent a common ideology or worldview, and therefore they acted as existential girders. There is also the possibility in which symbols act as both girders and as tokens. In these cases, elites or leaders may use symbols that are part of a widespread ideology in an elaborated or special way. For example, they may incorporate these symbols into public rituals or ceremonies in a way that is distinct from common symbolic expression possibly found on pottery or clothing.

Symbolic Origins and Value: The Outside and Inside Worlds

A core tenet of this research is that foreign-derived objects are valuable. In *Craft and the Kingly Ideal*, one of the volumes in a series that addresses the association of geographical distance and political/supernatural power, Mary Helms (1993) reviews several ethnographies and ethnohistorical records in order to understand how skilled craft and long-distance exchange effectually add symbolic value to objects. Her interpretation of how goods or symbols "acquired from 'outside' places" are imbued with value provides a sound theoretical model that will frame this study (Helms 1993:xi).

What is significant about Helms's approach is that she focused on the symbolism associated with long-distance trade (what the distant relationship represents) rather than the "materialistic or utilitarian" aspect of exchange (Helms 1993:4). She explained that within societies a dichotomy exists between *outside* and *inside* worlds:

> As numerous ethnographies make clear, this dichotomy can be described with any large number of contrastive characteristics and qualities, all of which are shaped by fundamental assertions that the social world within involves that which is immediate – here and now or everyday – in spatial/temporal contexts, is known and understood and in that sense is ordinary and mundane or common, and is normally and politically more or less controlled or ordered, "cultured" or "civilized." Conversely, the world outside society is that which is distant – farther away in time/space, less known and therefore extraordinary and exotic, less controlled or uncontrolled (chaotic, wild, uncivilized), and unordered or ordered in a different fashion (Helms 1993:6).

Helms (1993:8-9) suggested that items from distant places that exist in the outside

world "encapsulate power from that portion of the universe lying outside society." Those who interact with or are able to acquire goods from these outside places are also able to "channel and concentrate such energy" (Helms 1991:9). Such people would include ritual practitioners who adopt foreign ideologies/ritual practices as well as elites who work to accumulate exotic goods and foster relationships with those on the "outside." By so doing, they "become associated with, perhaps filled with, this same power" (Helms 1993:9).

As suggested earlier, elites and leaders often use symbols as tokens of authority, and symbols from foreign contexts provide a perception of control over the outside that consequently legitimizes the high-level positions attained by those in hierarchical societies. Even in our own globally-connected, modern state-level societies we consider amicable links to the "outside" as a desirable characteristic of our leaders. Presidential candidates with exceptional experience in foreign policy are considered to be qualified to take on the responsibilities associated with leading a country. This symbolically suggests that they are able to control or deal with the "less controlled" or "uncivilized" aspects that exist on the outside. Helms (1993:165) further suggested that this ability illustrates that "they are able to rise above the mundane and the ordinary aspects of mere survival." And in relation to the accumulation of foreign goods, she stated that "the act of acquisition in itself becomes a mark of exceptionality, exclusivity, and ability to control, and allows the cultivation of a kingly image."

An important part of research associated with long-distance exchange involves tracing the origins of objects and symbols. As described above, foreign symbols adopted and integrated by local societies are attached to outside worlds from which they derive

their power and value. If a symbol is labeled "foreign" but actually derived from local ancestral communities (inside sources), our interpretations of the value of these symbols may be flawed. It may be that at an earlier time these objects made their way into a society, but do they still retain the power that is associated with the outside? For this study, identifying possible origins will help to clarify whether symbols did actually derive from Mesoamerica during the late prehistoric period or from earlier local populations who at one time may have had contact with the outside.

Hierarchy and Social Complexity

Before exploring the link between symbolism and sociopolitical organization, it is important to expand on past and current themes associated with social complexity and hierarchy. Due to multiple meanings and ambiguity linked to this type of jargon, I also offer some working definitions in an effort to clarify the terminology that I will use to describe certain aspects of sociopolitical organization.

The term *hierarchy* is often associated with discussions of socially stratified societies, elites, centralized control, and complexity. All of these should be defined relative to the types of societies that are being discussed; scale is fundamentally important in this discussion. For example, most would agree that the sociopolitical organization of the Roman Empire was more hierarchical and complex than what may have existed at Cahokia. This is easily determined when comparing architectural features, trade networks, geographical reach, hegemonic control, and population size. On the other hand, when dealing with intermediate societies, hierarchy and complexity should be considered at an appropriate scale. There is no doubt that some level of hierarchy within communities in the SW/NW existed, but how we describe it should directly correlate to

the scale presented to us by the archaeological data.

I argue that hierarchical communities exist in many terms. At one extreme, major hierarchical systems would likely involve ruling elites who controlled resources and possessed the ability to sway the masses to follow their direction in building monumental architecture, entering battle, or paying tribute. I would describe the large empires built by the Maya and Aztec as operating at this level of hierarchy.

At the other end of the scale lie more egalitarian communities, often organized along lines of kinship. Small groups of people, usually living in smaller structures and subsisting with enough surpluses to support the group, organized themselves in less hierarchical communities. This is not to say that hierarchy in these smaller groups did not exist, but status was likely ascribed according to gender (matrilocal or patrilocal), age, or lineage. Members of the community recognized distinct social and political positions. Emerging leaders also have the potential to achieve status in order to gain authoritative power over the group, thus categorically sliding them closer towards the hierarchical extreme of the scale.

No group should be considered statically resigned to one position on this scale, nor should it be assumed that movement along this scale is unilineal or that it occurs slowly over time. An increase in hierarchical complexity can occur as the result of massive population increase, perhaps deriving from migration, and hierarchy can also transform quickly, over one or two generations or even in a single shift in power following warfare or civil unrest.

To understand how a ruling elite functions is to understand that the success of a leader lies in gaining and retaining *public trust*, which can be defined as the confidence

that a society has in all parts of the sociopolitical system. The community's actions are based upon this faith in not only leaders but in other aspects of the system such as the economy, management of food production, and religious ideology. For hierarchical leaders, gaining public trust is the crux to their ability to guide the actions of a group of people, and without it, large-scale construction, manufacture of surplus, and taxation systems cannot exist.

As mentioned, hierarchical communities in the SW/NW were likely quite variable, and equally so, leadership throughout the history of this region was also just as diverse. In Lekson's (2005) historical description of the debate about complexity in the SW/NW, he pointed out some important characteristics of hierarchical leaders that express their variable nature:

> Hierarchical leadership need not be male, nor solitary, nor despotic. Hierarchical leaders can be elected, appointed, or anointed. They can indeed be several, as in a council or "managerial elites"…They can be obeyed or ignored. But when few begin to make decisions affecting many, an interesting threshold is crossed. Centralization of decision-making is one solution to collective action problems that has important political and evolutionary consequences. (Lekson 2005:157)

The consequences that result from a community organizing themselves in a way that involves hierarchical leadership should be evidenced in several aspects of their society. This especially includes privileged access to food, arable land, trade goods, and other resources. In addition, disparity between elite leaders and commoners can be identified through the analysis of burial treatments and differences in residential and ritual architecture. I plan to show that the manipulation of foreign symbols and ideology

can also provide evidence that furthers our interpretations of prehistoric sociopolitical organization and social hierarchy.

Symbolism in Social Hierarchy

As mentioned above, the information transmitted through symbols is commonly interpreted as being used by elites for the purpose of legitimization and prestige. In other words, aspiring elites or leaders used symbols that identified them with a greater power or religious system recognized by the masses with the intention of gaining followers who offered tribute in the form of goods or services. This interpretation closely follows Robb's explanation of the perspective of symbols as tokens. He described them as "badge-like," meaning the symbols provided leaders with the authority needed to perpetuate their status in a hierarchical system (Robb 1998:340).

Political authority must have some justification, which may derive from a consensus of the masses (which certainly would need to occur), or through a demonstration of power. For a group to accept a leader, they must feel that the individual will either work for the greater good of the community, or has the power to control their fate. Inevitably, followers must feel they are better off with the person in a position of power. This could mean they fear death if they do not participate in tribute systems, or they may believe the leader works in favor of their spiritual convictions, contributing to the organization of their universe and the safety of their souls. This representation of divine lineage is often used in models of political manipulation of power. In addition, symbols are effective ways of conjuring a recollection among followers of the legitimacy of their leader through visual stimulation.

People may have exclusively possessed symbols of power as "badges" of political

authority. DeMarrais et al. (1996:18) have explained that "because symbolic objects can be owned, inherited, and transferred, they are ideal signifiers of individual social position and political power." DeMarrais et al. also suggested that the production and distribution of elite goods, treasured for both their meaning and economic value, are controlled by those who seek power and status. Exclusivity of ownership becomes an important component of the use of symbols as badges of authority and allows a given symbolic item to retain its manipulative power.

Turner (1975:157) stated that "the manipulation of symbols" in political processes is prominent; they are "in their richest concentration" in ritual practice. He also noted that it is often complicated to explain symbols apart from their visual presence in ritual. It seems that in many circumstances, rituals are not only where the meanings of symbols are perpetuated and strengthened, but ritual and ceremonial performance may designate the birthplace of their significance. DeMarrais et al. (1996:18) also described this relationship between ritual and symbols:

> Complex iconographic systems combine the immediacy of performance with the visual impact of often familiar objects and icons to communicate directly with a large audience. The use of these interdependent means of materialization strengthens the overall message and creates a vivid experience of the ideology.

When dealing with the political institutions of culture, much of what is discussed is the acquisition and transfer of power. Power often comes in the form of control over land, possessions, and people. Cohen (1979:91) expressed that "power relations and symbolism are present in all social relationships." Firth (1973:84) referred to symbols in the context of control as "instruments of power," and the use of symbols by leaders/elites

is often seen in this light.

Firth (1973) also presented an explanation of the mechanism of symbolic control exploited by leaders. He explained that symbols are used to "affect the behaviour of others" as leaders work to "attain political autonomy" (Firth 1973:84). Firth further explained that a symbol "transforms or conditions the intellectual and emotional framework or basis from which that behaviour proceeds" (Firth 1973:85). Thus, according to Firth's explanation, symbols are tools in manipulating the human psyche, the consequence of which is a change in behavior. Normally, this behavior produces an outcome desired by the leader using the symbol, such as paying tribute, building elite residential palaces, or producing goods to support trade.

Cohen (1979:102) also presented a paradigm that factored the aspect of ambiguity into the use of symbols by leaders and how it plays into the mechanism of control. He referred to this paradigm as one of bivocality, where the existential or organizational needs of a group are addressed on the one hand and the personal desires and egoism of the leader is met on the other, both through the manipulation and representation of powerful symbols. He illustrated this concept of bivocality in the following scenario, which focuses on the effectiveness of symbols, even when ambiguity is involved:

> A man performing a ritual or participating in a ceremonial is simply unclear, mystified, as to whether his symbolic activities express and cater to his own inner needs or the organizational needs of the group to which he belongs. At times he may be inclined this way, at others that, but often he is unaware of the issue altogether. And it is this ambiguity in their meaning that forges symbols into such powerful instruments in the hands of leaders and of groups in mystifying people

for particularistic or universalistic or both purposes (Cohen 1979:102-103).

What is significant about this scenario is the idea that leaders, at times, may be concerned with the well-being of those they direct. In most depictions of ancient political aspirations, elites, leaders, and "aggrandizers" tend to be characterized as only using symbolic systems for economic and egoistic gain. The possibility that these leaders might have had some conviction or belief in the ideology in which they participated or had compassion for their followers is rarely addressed and represents the materialistic slant found in the archaeology of political systems. It seems inevitable that in some cases charismatic leaders also had strong convictions in the ideologies they were directing and perpetuating. In these cases, leaders as well as followers use symbols to support their ideological structure (symbols as girders), but at the same time leaders are able to manipulate these symbols through exclusive ritual use, elaboration, or in association with specialized knowledge to achieve authoritative status (symbols as tokens).

By looking at these studies on the use of symbolism in political processes, a rough framework for understanding the use of symbols in political systems can be constructed. First, leaders commonly used symbols to perpetuate the idea that they possessed a divine connection with deity or represented some unifying aspect of cultural heritage. They used symbols to strengthen these ideas through display, and leaders may have also exclusively possessed them as well. Second, it is possible that symbols were used prominently in association with or during ritual activities. These activities usually occurred in sacred places, which can provide archaeologists with an idea of a symbol's context. Third, symbols were used to manipulate the behaviors of people, usually initiated by emotional transformation or conviction. The more a symbol was seen

in relation to leadership or power, the more this association was strengthened. Fourth, ambiguity plays a role in how symbols are expressed as mechanisms of control or as unifying icons. While all members of society may possess symbols, the way in which people in various positions of a ranked society used them may indicate their value and/or relationship to sociopolitical organization. In these cases, symbols can be both existential girders and tokens of power and authority.

Chapter 3: Mesoamerica and the Southwest/Northwest: Two Case Studies

The previous chapter provided a theoretical and methodological foundation for the study of symbols in relation to sociopolitical organization, and I now turn to a more specific regional study of this research. As was discussed in the previous chapter, Helms (1993) has suggested that societies often distinguish between the inside and outside worlds. Local systems of organization and social structure operate in a controlled, predictable manner. The outside world is relegated to those areas that are uncontrolled and whose operations are unknown. For this study, the Salado and Casas Grandes regions in the SW/NW will be considered to be those viewed by their inhabitants as the "inside," and Mesoamerica as the distant or "outside" realm.

I begin this chapter by describing Mesoamerica, its regional boundaries and phenomena, followed by a review of the debates associated with the nature of the relationship between Mesoamerica and the SW/NW. As mentioned in the first chapter, long-distance contact between the SW/NW and Mesoamerica has been explored for almost a century. A long-running debate has also existed for several decades concerning the nature of interaction between the SW/NW and Mesoamerica. While the goal of this research is to determine how those on the "inside" (i.e., SW/NW) used Mesoamerican ideas and symbols resulting from this interaction, it is important to review the research that has explored the nature of this relationship in order to provide background information relevant to this study. Finally, I present geographical and historical information specific to the Salado and Casas Grandes regions and conclude by presenting the sites that are included in this research.

Mesoamerica: The Outside World

In studies of interaction between the SW/NW and Mesoamerica, the term "Mesoamerica" is frequently referenced without describing what it means. McGuire and Villalpando (2007:59) have noted that "archaeologists have often treated Mesoamerica

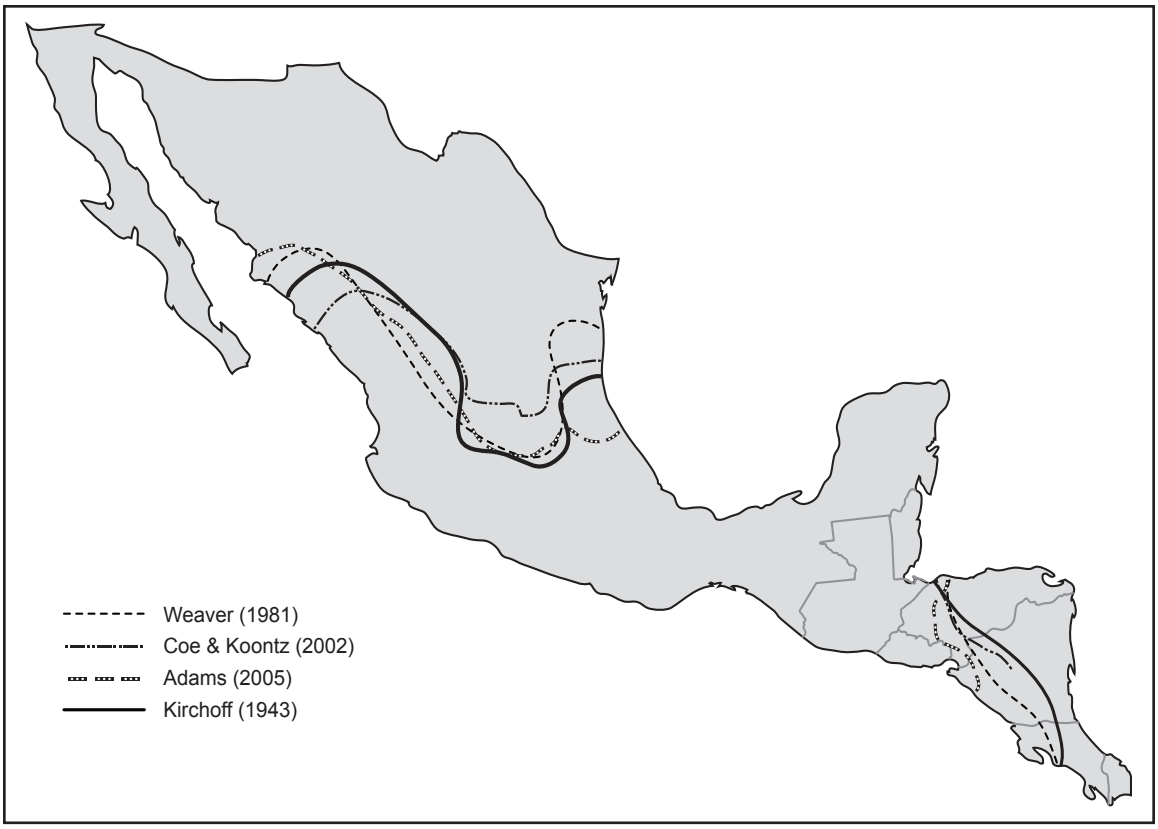


Figure 3.1. Boundaries of the Mesoamerican region.

as a uniform cultural area," but it can represent a number of different concepts including a geographic region, a defined set of cultural traits, a regional religious culture, or incredibly diverse groups of people (Adams 2005; Blanton and Feinman 1984; Carrasco 2001; Coe and Koontz 2002; Kirchhoff 1943, 1952; Smith 2003; Weaver 1981).

Paul Kirchhoff (1943, 1952:24-25) first coined the term "Mesoamerica" and defined this geographic area according to a list of similar characteristic traits. Some of these include the use of a digging stick, hieroglyphic writing, specialized markets, and the cultivation of maguey, cacao, and maize. Most scholars have traditionally described Mesoamerica geographically as the area extending from central Mexico, to all of southern Mexico, Guatemala, and the northwestern portions of El Salvador and western Honduras (Adams 2005:13-14, 2000:7; Coe and Koontz 2002:11). Smith (2003:5), Weaver (1981:9), and Kirchhoff (1952) include the area from north-central Mexico to Pacific Costa Rica. Figure 3.1 shows some of the various interpretations and fluctuations in the

boundaries that scholars have outlined.

It is obvious that the traits mentioned by Kirchhoff and others were not always geographically static nor did they always exist. They emerged at different times and some spread to other areas. Carrasco (2001) has commented on the issue of shifting boundaries through time. He stated that scholars who "emphasized the fluctuations of Mesoamerican geographical and political boundaries at different historical periods" (Carrasco 2001:213). Furthermore, Carrasco (2001:214-215) pointed out that there is an ongoing debate about the extent to which Mesoamerican influence reached the northern borderlands and groups beyond the northern boundaries, and he stated that "it is becoming clear that important exchanges took place, over long periods of time, sometimes fluctuating in intensity." Although not the focus of my research, the results of this study contribute to clarifying the fluctuation in interaction between the SW/NW and Mesoamerica over time.

While the word "Mesoamerica" is useful in quickly identifying a general area from which the sources of some symbols may have originated, it covers a wide region and encompasses different religious belief systems and customs that were not practiced by all within its boundaries. A logical solution to using such a broad term would be to look closely at areas within Mesoamerica to determine more precisely where symbols, trade items, and other evidence of cultural contact may have come. Specific sources have been identified in the studies of trade goods that made their way to the SW/NW. In particular, Bradley (1993) and Vargas (2001) have traced copper bells and marine shell to origins in northwestern and west-coastal Mexico respectively. Wyckoff (2009:86-87) has also suggested that scarlet macaws made their way north from the Huastec region on the Gulf Coast of eastern Mexico. In the next chapter, I work to provide clues to the origins of symbols within Mesoamerica where possible. By determining more finite areas of origin, it will prove more useful in understanding the "interconnectedness" between specific places in the SW/NW and Mesoamerica (see Blanton and Feinman 1984).

Mesoamerican Interaction with the Southwest/Northwest

Many archaeologists have hypothesized about the relationships between the SW/NW and Mesoamerica. Some of the more prominent ideas that I will review below are the migration of groups of people into the SW/NW, the establishment of elite trade networks, and the effects of war within and encroachment from the Mesoamerican heartland. The focus of these studies has been on the mechanisms that fueled this long-distance interaction. I review these in juxtaposition to my research, which takes an internal approach focused on understanding the local adoption and adaptation of foreign cultural elements.

Wilcox (1986) has characterized research on the interaction between these two cultural regions as occurring in three general stages. The first began early in the 1900s with the research of Sauer and Brand (1930, 1932), Ekholm (1939, 1940, 1942), and Mason (1937) who worked to identify and expand the boundaries of the SW/NW and Mesoamerica. Shortly after this research was published, the Mesa Redonda meeting of 1943 was held where discussions ensued concerning the interaction between these areas. Haury (1945) published a synthesis of the new data that suggested "waves of Mesoamerican influence" into the SW/NW (McGuire 1993a:27; Wilcox 1986:15-16). This model hypothesized that the first wave occurred around A.D. 1 with the introduction of corn and pottery and the second, associated with the Hohokam of the U.S. Southwest, came between A.D. 700 and 1100 as evidenced by traits such as ballcourts, copper bells, and macaws (Haury 1945).

The second stage of research on this topic came after Haury's seminal article, and archaeologists in this era worked to build models of trade and migration that could explain how the relationship between the SW/NW and Mesoamerica operated (Wilcox 1986:17). One of the most prominent supporters of Mesoamerican migration was Charles C. Di Peso (1974), whose direction of the impressive archaeological work at Casas Grandes in northern Chihuahua took place between 1958 and 1961. He proposed a model

that included the movement of foreign traders/merchants from the Toltec capital of Tula in central Mexico into the SW/NW with the goal of exploiting natural resources such as turquoise and peyote from these northern regions. These *pochteca*, which is a Nahua term used to describe traveling traders associated with the Aztec capital of Tenochtitlàn, were seen as merchants working for donors who would sponsor these expeditions. The following excerpt is a description of the *pochteca* model developed by Di Peso following excavations at Casas Grandes:

> The available archaeological data did not suggest that individual Mesoamerican *puchteca* contacts made in the Northern Frontier at this time were sponsored by any single family, but rather by a number of competitive, cosmopolitan donor units, which were alike only in their common desire to accumulate wealth. Each was wont to achieve its individual economic ends by using devious cultural strategies to control different groups of Chichimecan recipients in order to form semiurban nuclei. These particular Mesoamericans did not penetrate the northern wilderness out of love for adventure, but rather from a desire of material acquisition determined by a specific set of donor values that permitted the expenditure of considerable colonial wealth and energy. (Di Peso 1974:300-301)

As Riley (2005:121) has noted, the use of the term *pochteca* (or *puchteca*) by Di Peso confused some due to the fact that he was using the name as an analog. Di Peso was not insinuating that the traders were of Aztec origin, but he borrowed the term to support his idea of the proposed system of trade based upon donors and traveling merchants. Despite this critique, others adopted and further developed the *pochteca* hypothesis (c.f. Kelley and Kelley 1975; Pailes and Whitecotton 1979), including Kelley (1995:137) who later renamed these traders "vanguard merchants."

Kelley and Kelley (1975:185) suggested that as Mesoamerican traders began to interact with new communities in the north, they established trading centers that "served to modify greatly the local Anasazi socio-economic organization, religion, ritual, and,

perhaps, material culture." They described the movement of people to the SW/NW as "hard" and "soft" diffusion. "Soft diffusion" refers to contact between groups, "as two-way organized commerce, involving the actual presence of members of the donor culture in the recipient culture" (Kelley and Kelley 1975:184). "Hard diffusion" is indicative of small group migration, which was used to describe the *pochteca*-like traders who established somewhat permanent trading outposts among the people of the SW/NW.

Since the introduction of the *pochteca* model, there has been much dispute over its plausibility. McGuire (1993b) is just one scholar who disagreed with the notion that Mesoamerican traders established political control and ideological hegemony in the SW/NW. Through an examination of change in the amount of Mesoamerican goods that entered the Hohokam region of the U.S. Southwest, he noted a decrease in Mesoamerican items during the Hohokam Classic period (about A.D. 1150-1450). This decline in trade suggests that contact, too, may have decreased. An important aspect to be gleaned from this study is that contact between the SW/NW and Mesoamerica likely ebbed and flowed dependent on the circumstances and social climates of contact and donor communities.

Wilcox (1986:34-35) stated that, developing from this critique of the *pochteca* model, the third stage of research that focused on interaction between the SW/NW and Mesoamerica began in the late 1970s with the work of Phil Weigand (1978, 1979, 1982), who proposed an alternative model based on Wallerstein's (1974a, 1974b) world systems theory. Since this time, others offered alternative perspectives including peer polity models and those related to prestige economies and elite interaction (Baugh and Ericson 1993:11-13; Bradley 1993; Pailes 1990; Nelson 2000). These recent approaches may in fact represent the fourth stage in this debate, and in contrast to previous research, they work to examine this relationship as one of contact or interaction rather than one of domination or exploitative control.

Bradley (1993) offered one model of contact/interaction, which developed from her research on shell exchange in the SW/NW. She proposed looking at Mesoamerican

interaction with the SW/NW as an example of elite exchange within a prestige economy:

> Prestige exchange involves the movement of high-value luxury or exotic goods between elite individuals within large regions, resulting in the establishment of alliances and the enhancement of their power. Both horizontal and vertical dispersion of goods, knowledge, and ideas are characteristic of this type of exchange system. (Bradley 1993:132)

Bradley (1993:143) also pointed out that the limited distribution of prestige goods indicates they were exclusive to those who held positions of status. This type of system is also likely to occur where populations are "high enough to permit some level of social differentiation" (Bradley 1993:144).

Similarly, Pailes (1990) proposed an alternative to the *pochteca* model suggesting that exotic goods were exclusively exchanged between traders and elites. In specifying the conditions by which it may have occurred, Pailes (1990:219-220) described the type of people who would be likely to participate in trade with foreigners as those who had gained more wealth by increasing their household labor through alliances with neighbors and acquiring more than one wife. These wives may have welcomed other relatives into the household from their own kin groups. By increasing their labor, and eventually their surplus, the wealthy elites widened the economic gap between them and other community members, which resulted in a socially ranked system. Pailes suggested that these elites were those most likely associating with the Mesoamerican traders because of their economic prosperity and surplus that facilitated trade. Strong alliances forged between local elites (or "cultural mediators") and traders may have resulted in the settlement of the traders in certain areas of the SW/NW, including community centers that were already established. There, these merchants would enjoy the exclusionary treatment as elites, continuing to import exotic goods from Mesoamerica.

During times of coexistence with the leaders/elites of the community, it is possible that Mesoamerican traders may have shared ideas. Beliefs that may benefit the people

or the local leaders would be incorporated into an extant ideology. This adoption and incorporation would not only represent exclusionary exotic knowledge, but it may have also perpetuated leaders' legitimacy in that it linked them to the outside world. Again, the new beliefs were likely incorporated into the symbolism already used by the elite or religious leaders and could be displayed through ritual or as exclusively owned goods, some of which were obtained through trade.

Nelson (2000) has also examined elite interaction and proposed that Mesoamerican elites politically aligned themselves with those of the SW/NW. His model proposed conflict and political action as the reasons for migration northward rather than commerce. He suggested that the disintegration that occurred at Teotihuacán after its collapse in the seventh century A.D. was a major cause for the disaffection of groups from this failed center. He also suggested that political divisions resulted in factions that spun off to form secondary centers, which eventually reached the SW/NW. Nelson (2000:322) outlined this model as follows:

> The factional leader becomes disgruntled to the point of disaffection, musters the available political and economic capital, and galvanizes followers to political action…Faction members migrate to a neighboring area, which may already be under military threat from the very polity they just abandoned. To enhance the group's attractiveness to the host polity, the leader offers military services…As a way of maximizing credibility and legitimizing whatever social powers it hopes to assume, the group claims illustrious ancestry. These claims are supported with symbolism and ceremony also derived from the abandoned polity. As the cycle repeats itself at increasing distances from the core, selective acceptance of such symbols gradually modifies and transmits selected cultural elements to distant places.

This cycle of movement and symbolic diffusion is based on the idea that there was a progressively northward movement of peoples from Mesoamerica due to conflict.

Eventually, they encroached on areas in the SW/NW, such as the Hohokam region. Even though people in the SW/NW, such as in the Hohokam region, were not necessarily dominated by those from Mesoamerica, Nelson (2000:329) clarified that foreign cultural elements would still be evident in the SW/NW.

The large amounts of exotica from Mesoamerica definitely lend credence to models of some type of prestige economy, and there are several other scholars that recognize the importance of these foreign goods (Bayman 2002; Ericson and Baugh 1993; Kelley 1995; Mathien 1993; McGuire 1993b; Nelson 2000; Riley 2005; Whalen and Minnis 2001). Some suggest contact involving very limited migration or contact exclusively through exchange. In contrast to communities like Paquimé, evidence of trade with Mesoamerica was on a much smaller scale among other communities, for example at Mimbres or Salado sites, and so it is necessary to view interaction as being widely variable for different communities across the SW/NW. This may suggest that some communities may have accepted and included traders into their groups, while others simply exchanged goods with them as the traders traversed the landscape. Still others may have received these goods in down-the-line trade from communities who were directly trading with people from Mesoamerica or at one time did so.

At a time when these debates on the mechanisms of interaction between Mesoamerica and the SW/NW had intensified, Foster (1986:63) stated that the obvious fact was that contact occurred, but that "we seem to lack any systematic approach to defining the extent and consequences of that interaction." It is indeed indisputable that interaction between these regions existed with overwhelming evidence found in the form of exotic trade goods, architecture, and symbols (Bayman 2002; Bradley 1993; Crown 1994; Crown and Hurst 2009; Di Peso 1974; Ericson and Baugh 1993; Kelley 1966, 1995; Kelley and Kelley 1975; Mathien 1993; McGuire 1993b; Nelson 1995, 2000; Pohl 2001; Riley 2005; Scarborough and Wilcox 1991; VanPool 2003b; Whalen and Minnis 2001; Wilcox 1985, 1991; Wilkerson 1991). The actual nature of this relationship has

been exhaustively debated, and we may never reach a consensus, but it is now time to address the "consequences of that interaction" among the local communities in the SW/NW that adopted foreign elements. Many questions remain unanswered, including how was this relationship perceived and internalized by communities in the SW/NW? Based on archaeological evidence, is there variation in the amount of interaction between different communities in the SW/NW and Mesoamerica? How were these foreign elements integrated locally and modified to fit local needs? To answer these questions I explore one aspect of this long-distance interaction: the adoption of foreign iconographic symbols by people participating in the Salado and Casas Grandes traditions.

Salado and Casas Grandes: The Inside World

The two case studies that I examine in this research are the Salado and Casas Grandes regions (Figure 1.1), areas where populations grew and thrived in the SW/NW from around A.D. 1200 to 1450. Pottery from these regions exhibited similar iconography including some that derived from Mesoamerica, and communities that participated in these traditions likely shared similar ideologies that worked to structure their "inside" worlds (Helms 1993). Beginning with the Salado, I give a brief description of each cultural tradition, including information on ceramic typology and sociopolitical organization. I then discuss regional site hierarchy and identify the sites examined in this study as either more or less hierarchical.

Salado

Many have debated the definition of the term "Salado", and there has been little agreement as to what it represents (Lincoln 2000:24-25). When speaking of Salado communities, there is no consistent set of material identifiers that would make a given site Salado. Many sites exhibit varied architectural style, and their artifact assemblages are just as diverse (Crown 1994:16). The one trait on which archaeologists have agreed as being decisively Salado is the significant presence of Roosevelt Red Wares, or Salado Polychrome pottery, which was widespread during the late prehistoric period (Doyel and

Haury 1976; Lincoln 2000:24). The chronology of the Salado Polychrome series begins with Pinto Polychrome, which appears after about A.D. 1250. Its distribution is restricted to sites in east-central and southeastern Arizona (Crown 1994:17). Later, the Gila (A.D. 1300) and Tonto Polychrome (A.D. 1350) types appear and are more widely distributed throughout the SW/NW, including as far south as Casas Grandes.

Commenting on the development of the Salado pottery tradition, Crown (1994:7) stated that "the earliest pottery reveals its origins in association with population movement from the Kayenta area into the Mogollon Rim country." Over time, the Salado tradition grew, spread, and became established in many places throughout east-central/southeastern Arizona, southwestern New Mexico, and northern Chihuahua. As mentioned above, sites identified as Salado are architecturally diverse, including small one-storied pueblos as well as multistoried platform mound pueblos with hundreds of rooms.

Some archaeologists have considered platform mounds that were built shortly before and during the Salado horizon (A.D. 1200-1450) to be Mesoamerican in origin (Haury 1976:346-347). The construction of platform mounds as public ritual staging grounds and eventually as elite residences in the SW/NW reflects similar uses of platform mounds and pyramids in Mesoamerica (see Rice 1998:235 for a discussion on the evolving function of platform mounds among the Salado). While these architectural features may have resulted from interaction with Mesoamerican peoples, it is more likely that they evolved from local architectural traditions. Gregory (1987) explored the morphological evolution of Classic period Hohokam mounds and found that initial stages of construction consisted of caliche-capped trash mounds (see also Doelle et al. 1995:386 and Haury 1976). In some cases, these were subsequently refurbished and enlarged over time with post-reinforced walls. The construction of retaining walls became common among the Classic Hohokam after A.D. 1150, and continued to be used to form the perimeter of Salado platform mounds.

While platform mounds were likely not associated with Mesoamerica, the construction of such large communal architecture suggests communities with some type of hierarchical social structure, although there are several different views on the nature and scale of this hierarchy. Craig et al. (1998:254) calculated the amount of labor necessary to build the platform mound at Meddler Point, a Salado site located in the Tonto Basin in central Arizona, and determined that at least 2,527 person-days were necessary to complete the structure. They estimated that this may have taken up to two years or less, depending on how many people were recruited from surrounding communities to help in the construction. They also determined that the structures built at the top of the mound primarily served non-residential, ritual functions, which led them to suggest that the construction of the platform mound "represents an increase in the level of social differentiation at the site, but not a significant increase in the level of social inequality" (Craig et al. 1998:256).

Some of the sites included in this study are found in the Tonto Basin located in east-central Arizona. For this area, the thirteenth century brought dramatic change in architecture, social organization, and an influx of immigrants to communities in the basin (Clark 2001; Lyons 2003). As part of the Roosevelt Platform Mound Study conducted in this region, archaeologists determined that communities organized around platform mounds represent asymmetry in power between elites and non-elites and marked some level of ranked social organization (c.f. Clark 2001; Rice 2000; Simon and Jacobs 2000). Simon and Jacobs (2000:210-212) propose that those inhabiting non-elite residential sites would have been motivated by elites occupying platform mounds to aid in the construction of this type of architecture and to contribute to and participate in rituals performed at these ceremonial centers.

Data from the comparisons of burials and access to resources for people living on the mounds and in mound compound structures actually suggest little social differentiation in comparison to those living off the mounds. Although those living on

the mounds may have been closely linked with religious rituals, their status as elites is not considered to be administrative (Rice 1998:237). Rice suggested that these "elite members of the community" were more ceremonial specialists rather than elites who enjoyed "heightened economic privileges or responsibilities."

Several contemporary Salado sites in southeastern Arizona and southwestern New Mexico were also included in this study and provide a useful contrast to those located in the Tonto Basin. They were not as centrally organized as their northwestern neighbors, who developed communities centered around platform mounds. Although platform mound sites have been identified in the San Pedro Valley of southeastern Arizona, most sites recognized in this and surrounding areas exhibit little support for the idea that they were hierarchically organized as evidenced by the lack of monumental architecture and the homogeneous distribution of resources.

Casas Grandes

South of the Salado communities in central/southeastern Arizona and southwestern New Mexico lies the Casas Grandes region in northern Chihuahua. During the Viejo period (A.D. 700-1200), agriculturalists lived in settlements around and in the Casas Grandes river valley. Early in this period, the Viejo communities were pithouse villages, and later structures were mud-and-stick construction and were laid out in contiguous blocks (Whalen and Minnis 2001:103).

By the thirteenth century, the Casas Grandes region transformed dramatically with large increases in population, new architectural features, and the appearance of a large and diverse material culture. Although there have been various interpretations as to the mechanisms that led to the transformation of Casas Grandes during the Medio period (A.D. 1200-1450), what is certain is that it marks a significant time in the prehistory of northern Chihuahua because of large-scale population growth along with the monumental construction of Paquimé (also called Casas Grandes), one of the largest sites in the SW/NW.

The Medio Period was also a time when people in northern Chihuahuan produced vibrant polychrome pottery throughout the region. Villa Ahumada, Babícora, White-paste Babícora, and Dublán Polychrome ceramics first appeared sometime around A.D. 1200, and all except Dublán Polychrome continued to be produced into the late Medio period after A.D. 1300 (Whalen and Minnis 2009:120). In addition to several other polychrome types, Ramos Polychrome, with its finely executed designs, began to be produced in the late Medio (A.D. 1300-1450) and quickly became the signature pottery type for this time period as well as for the regional center of Paquimé.

Paquimé reached its pinnacle of development in the 1300s, and it towered over surrounding communities with multi-storied compounds and monumental architecture, including ballcourts and mounds (Whalen and Minnis 2009:148). In addition to this large center are hundreds of satellite sites where people participated in the ritual and political culture of Paquimé. Whalen and Minnis (2009:278) have interpreted Paquimé's political situation as one "in which the central place projects its authority outward through a complex, negotiated set of relationships in fragmented political contexts." Their data show that inhabitants of sites in close proximity to Paquimé were likely controlled more closely than those farther out. Whalen and Minnis (2001, 2009) developed a model for how this area was structured based on large-scale surveys and numerous excavations, combined with the earlier work of Di Peso et al. (1974) at Casas Grandes. Their model suggests that the site of Paquimé likely served as the central authority over surrounding communities of an Inner Zone located within about 30 kilometers of this primary center.

Farther out, Middle Zone sites on the periphery were more scattered and simpler than those of Inner Zone sites, lacking core features such as ball courts and large ovens (Whalen and Minnis 2001:175-176). Whalen and Minnis proposed that those who inhabited sites outside of the Inner Zone participated in a "low level of system organization" (Whalen and Minnis 2001:172). Communities could be characterized as having less intercommunity organization compared to those in the Inner Zone.

Although this was the case, Whalen and Minnis suggested that there was still a strong relationship between the two zones because of the similarities in ceramic assemblages and architectural features.

Summary of Regional Site Hierarchy

To summarize briefly, one of the ways these two cultural areas are similar is that they include communities with characteristics that suggest local elites or religious leaders held some type of power or authority. In addition, many communities in both regions do not exhibit highly-structured social hierarchies. The Casas Grandes region is characterized by one large elite center (Paquimé) surrounded by smaller villages inhabited by people who likely contributed to the building, maintenance, and religious functions associated with this large, central community. In contrast, the Salado region has been called a "regional phenomenon" commonly identified by the appearance of Salado Polychrome pottery (Dean 2000). Salado sociopolitical organization varied from site to site, and one of the main contrasts is between communities with platform mounds, suggesting distinctions between elites and non-elites, and those lacking this type of monumental architecture, indicating a less hierarchical social system.

In order to make a comparison of the use of iconography in the Salado and Casas Grandes regions, I identified the sites and areas associated with some level of authoritative control as *more hierarchical*, and those that likely operated on a relatively egalitarian political and social scale as *less hierarchical*. The locations of these sites included in this iconographical study are found on Figure 3.2. Three platform mound sites in the Tonto Basin located northeast of present-day Phoenix will represent communities that practiced *more hierarchical* sociopolitical organization within the Salado tradition. Seven Salado sites located in southeastern Arizona and southwestern New Mexico, communities where there appears to be a lack of centralization and authority that affected social organization, will represent *less hierarchical* communities. For northern Chihuahua, Paquimé and five other sites or areas (those within 30

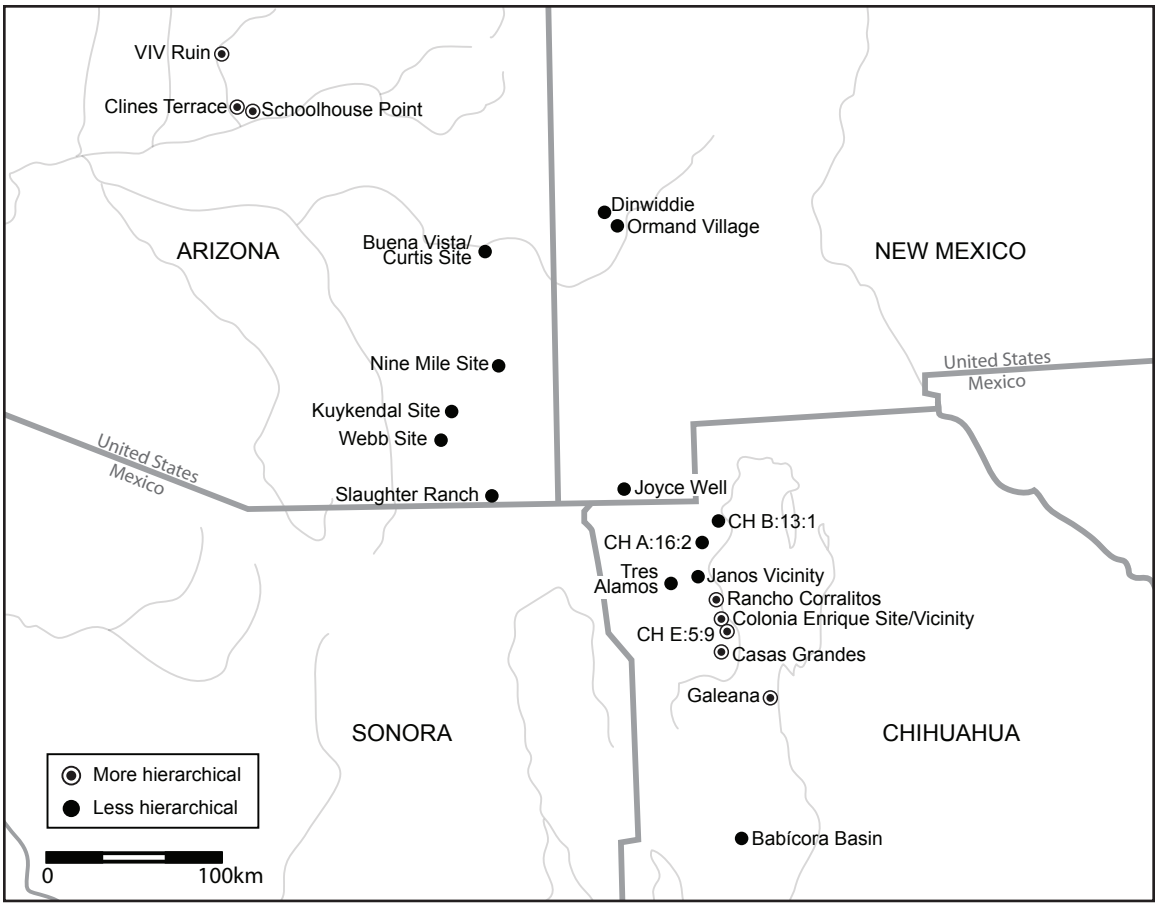


Figure 3.2. Sites included in this study.

km) closely surrounding this ceremonial/political center will be identified as *more hierarchical*, whereas six further from Paquimé, located outside the Inner Zone, are *less hierarchical*.

Chapter 4: Mesoamerican Symbols

This chapter provides background material on Mesoamerican symbols that have been identified in the SW/NW. These symbols were graphically depicted in varying forms and on media such as ceramic decoration, rock art, and stone sculpture. There are three reasons for recording Mesoamerican symbols as part of this research. First, the focus of this study is to understand the internal use of symbols from the "outside." Interaction between people in Mesoamerica and the SW/NW provides a clear example of this type of inside/outside dichotomy. By drawing from two SW/NW regions that exhibit different types of sociopolitical organization, I am able to compare and contrast patterns relating to varied types of social structure and the ways in which they were used (symbols as tokens/symbols as girders). Second, iconographic symbols are often associated with the realm of ideology or religion and are typically reproduced following certain stylistic rules and conventions. In some cases, they are relatively easy to identify on material remains such as pottery, an artifact type that is sufficiently abundant and one that often was used to depict religious and ideological concepts. Additionally, the symbols appearing on pottery can be quantified and analyzed statistically in order to identify patterns specific to their rate of occurrence and distribution. Third, while there have been numerous studies of trade goods and exotics from Mesoamerica, none have synthetically reviewed and examined the roles of foreign iconography, nor have they examined differences in their distribution among societies in the SW/NW. The purpose of this study of symbols is to shed light on how people locally interpreted and adapted foreign iconography and concepts.

Finally, the corpus of motifs on both Casas Grandes and Salado pottery is enormous, and although a comparative study of *all* the motifs found on these pottery types may yield further similarities and insights, it would be beyond the scope of this project. Other studies such as Crown (1994) and Hendrickson (2003) should be referenced for more comprehensive reviews of motifs and icons found on Salado and Chihuahuan Polychrome pottery beyond those presented here.

Many archaeologists have identified Mesoamerican symbols in the SW/NW (Creel and McKusick 1994; Crown 1994; Di Peso 1974; Hays-Gilpin and Hill 1999, 2000; Hill 1992; Kelley 1964; Mathiowetz 2008; Riley 2005; Thompson 1999, 2000; VanPool 2003b; VanPool et al. 2006, 2008; VanPool and VanPool 2007), and some of these include plumed/horned serpents, macaws, flowers, butterflies, twins or pairs, phalluses, and other interpretations of Mesoamerican deities. In this review of iconography that other scholars have previously identified as Mesoamerican, I include references to the original author(s), details explaining their interpretations, and my own critiques and comments on these declarations. I conclude with a summary of the Mesoamerican iconography that was identified in the analysis stage of this research.

Plumed/Horned Serpents

One of the most predominant Mesoamerican symbols identified in the SW/NW is the depiction of a plumed or horned serpent. This symbol has a long history in Mesoamerica, beginning with the Olmec tradition (1400 B.C.-A.D. 400). Taube (1995) explored this iconic deity among the Olmec and looked at how the "Avian Serpent" was a precursor to the Classic and Postclassic (c.a. AD 200-1500) plumed serpent of Mesoamerica. The Olmec Avian Serpent was a "celestial being associated with wind and

rain" (Taube 1995:83). The head was a combination of both bird and snake-like features. Among these were paw-wings, typically positioned behind the head. Taube considered the paw-wings a form of transportation used by the Avian Serpent to navigate through the heavens. He also identified the paw-wing motif as the Olmec representation of wind, which aided the Avian Serpent in its celestial travels, and by extension, represented the clouds and rain (Taube 1995:85-86).

Another dominate feature of the Olmec Avian Serpent was the crested brow. Taube (1995:86) claimed that this is likely the result of the "intentional blending of bird and serpent." He also identified a snake that inhabits the lowland region of the Olmec that has "supraorbital crests in the form of several long scales projecting immediately above the eye." This venomous snake is the tree-dwelling fer-de-lance also known as the "eyelash, horned, or palm viper." Taube mentioned that the palm viper strikes from above usually on the upper portions of the body, and that this may be where the Avian Serpent derives its "sky-dwelling" attribute. The eyelash viper may be the original, natural equivalent of the horned or plumed serpent depicted in the SW/NW, although local interpretation most likely altered its original meaning as this religious tradition made its way through Mesoamerica and eventually to the SW/NW.

This symbol has been found among a number of SW/NW traditions, including Casas Grandes, Salado, Ancestral Puebloan, and Mimbres (Di Peso et al. 1974; Riley 2005; Schaafsma 1998, 2001; VanPool 2003b; VanPool and VanPool 2007). They have also been documented in many forms including a serpent with feathers along its body, a serpent with a simple forward pointing horn or feather, and more abstract designs of only a head with an appendage (see Figure 4.1 for some examples).

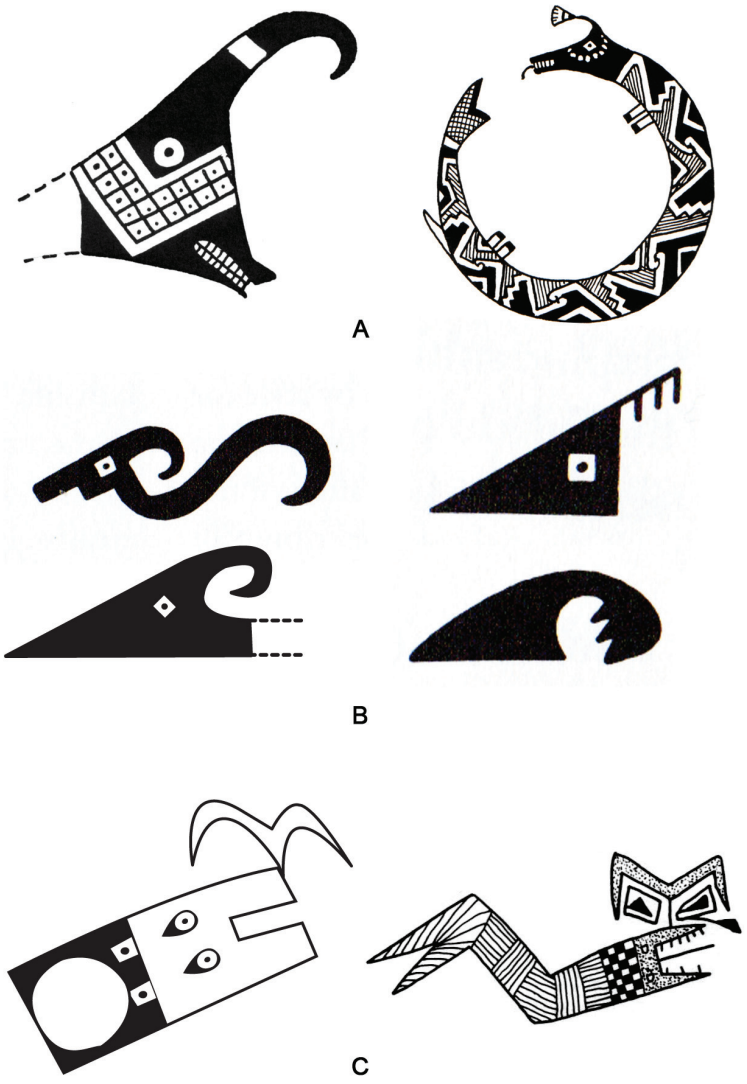


Figure 4.1. Depictions of the plumed/horned serpent from a) Mimbres (from Di Peso 1974:553, Figure 335-2), b) Salado (from Crown 1994:133, Figure 9.1), and c) Casas Grandes pottery (from Di Peso et al. 1974:272, Figure 290-6-55).

In prehistoric Mexican traditions such as those at Teotihuacán and Monte Albán, the plumed serpent was a representation of the god Quetzalcoatl (Adams 2005:241). For the Casas Grandes tradition, Di Peso (1974:549) also associated depictions of this symbol with the Mesoamerican deity Quetzalcoatl and describes this god as "a fertility spirit who concerned himself with life-giving water." Di Peso suggested that people at Casas

Grandes worshipped Quetzalcoatl as both the Wind God (Ehécatl) and as a creator (Di Peso 1974:548).

In the Casas Grandes region, the plumed/horned serpent was most common on Ramos Polychrome pottery. In addition to pottery, there exists architecture at Paquimé that attests to the importance of this symbol. The Mound of the Serpent is a 113.3 meter-long platform mound that is shaped like a horned serpent (Di Peso et al. 1974:5:478). It runs along the western side of an associated room block in which a horned serpent was carved into the wall of a possible kiva. VanPool and VanPool (2007:30) consider the location of this design in this kiva structure an indication of the "ritual importance" of the plumed/horned serpent. A plumed serpent was also carved in a piece of caliche that Di Peso et al. (1974:5:477-478) considered to be the west stone eye of the serpent mound.

In a study that examined the diffusion of the plumed/horned serpent throughout the SW/NW, VanPool et al. (2008:48) suggested that this symbol first appeared on Mimbres pottery (A.D. 1000-1130), which predates Ramos Polychrome production in the Casas Grandes Valley. They also suggest that "although the horned serpent traditions may have been introduced with the introduction of maize agriculture or perhaps even earlier, the horned serpent traditions of the Southwest appear to have developed relatively independently of Mesoamerican influence, at least after A.D. 1000" (VanPool et al. 2008:58).

In Crown's (1994) study of pottery designs found on Salado ceramics, she noted that serpent imagery was the most abundant, appearing on 315 of her 779 vessel sample (Crown 1994:146). Within this category, serpents with a horn or plume make up half of the 14 different identified serpent styles. These plumed serpents were recorded in

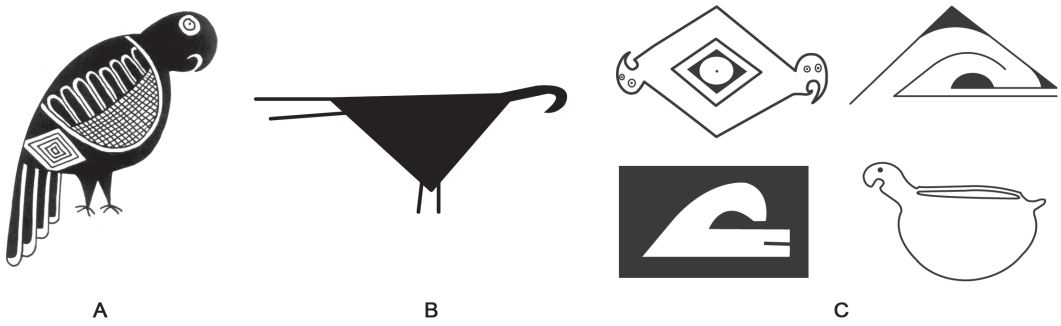


Figure 4.2. Depictions of macaws from a) Mimbres (from Di Peso et al. 1974:100, Figure 69-6-4), b) Salado, and c) Casas Grandes pottery.

a number of alternate forms. Although she was skeptical about Mesoamerican origins in the late A.D. 1200s for the introduction of this motif into the Southwest, Crown (1994:222) reiterated that she did not "question the many parallels in the imagery and beliefs between the Southwestern Cult and Mesoamerican religion."

Macaws

Another prominent Mesoamerican symbol is that of the macaw, which has been found on several pottery types in the SW/NW, including Mimbres, Casas Grandes, and Salado types (Figure 4.2). Macaws are significant Mesoamerican icons for the fact that scarlet macaws were likely transported from the lowland tropical forests of central and southern Mexico to the arid desert regions of the SW/NW (Somerville et al. 2009; Wyckoff 2009). In addition, they were successfully bred in captivity at Paquimé and likely traded to other locations within and around the SW/NW. Their captivity at Paquimé is evidenced partially by the numerous macaw pens in which bones of these birds as well as egg fragments are present. These pens are found in the interior of Paquimé and occur in rows along plaza walls. Isotopic analysis of macaw remains also confirm that macaw breeding was carried out at Casas Grandes (Somerville et al. 2009).

Creel and McKusick (1994) produced a study of the macaw and parrot remains found in the Mimbres region of southwestern New Mexico, and it explored all the known existing macaw and parrot burials found in this area, which only amounted to a total of 22 (Wyckoff [2009:26-28] reexamined this data and suggested that the number of macaws/parrots is actually only 20 for the Mimbres Classic Period). Another dimension of their study included the examination of macaw imagery on Mimbres black-on-white pottery. Of over 6,000 Mimbres vessels, only 24 were recognized as having any type of macaw images on them. Creel and McKusick (1994) were able to identify the species of some of the depicted birds according to certain characteristics and determined that most represented the scarlet macaw, native to the lowland jungles of central and southern Mexico. These macaws were important to the Mimbres as is evidenced "by the sacrifice of macaws in the spring after their long tail feathers had fully formed, as well as by their formal burial" (Creel and McKusick 1994:521).

What is significant about the depiction and captivity of macaws in the Mimbres region is that the appearance of these Mesoamerican birds occurred as early as A.D. 1000 (Creel and McKusick 1994:521). Evidence of macaws among the Hohokam suggests they were in the SW/NW even earlier (c.a. A.D. 200-900) (Wyckoff 2009:94). While Paquimé has been identified as one of the major trading centers of macaws with connections to Mesoamerica, macaw remains in other areas suggest that people from other regions in the SW/NW were interacting with Mesoamerican peoples much earlier.

Macaw/Plumed-horned Serpent Combinations

In the analysis of Ramos Polychrome from Paquimé, Fenner (Di Peso et al. 1974:6:99) identified both the P-motif and half/whole spade as the macaw (Figure

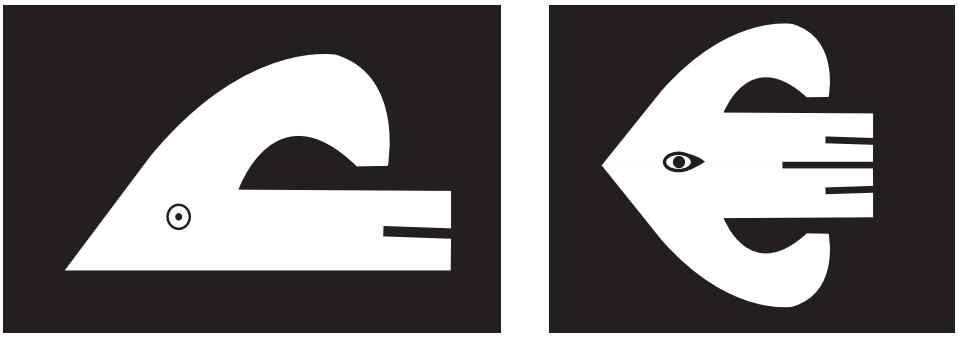


Figure 4.3. Spade motif, which may be the horned/plumed serpent, macaw, or a combination of the two.

4.3). She commented that this macaw design was "noted often enough to be considered a hallmark of this type." Although they were not found on all the whole Ramos Polychrome vessels excavated from Paquimé, spades and P-motifs, considered to represent macaws by Di Peso et al. (1974:6:283), were noted to be the most numerous of the zoomorphic and anthropomorphic motifs identified on this pottery type.

Some archaeologists (Crown 1994:165-166; Schaafsma 1998:40; VanPool and VanPool 2007:114-115) have suggested that the half and whole spade motifs found on Ramos Polychrome pottery (Figure 4.3), represent both the macaw and plumed/horned serpent. VanPool and VanPool (2007:114-115) stated that "the implied ambiguity of plumed/horned serpents and macaws is such that some motifs of this style are clearly horned serpents, some are clearly macaws, and others were probably intended to be read as both horned/plumed serpents and macaws." Schaafsma (1998:40) noted that the combination of macaw and horned serpent traits "may suggest a ritual affinity between them."

Crown (1994:166) also described this situation in the depiction of parrots and serpents on both Salado and Chihuahuan pottery:

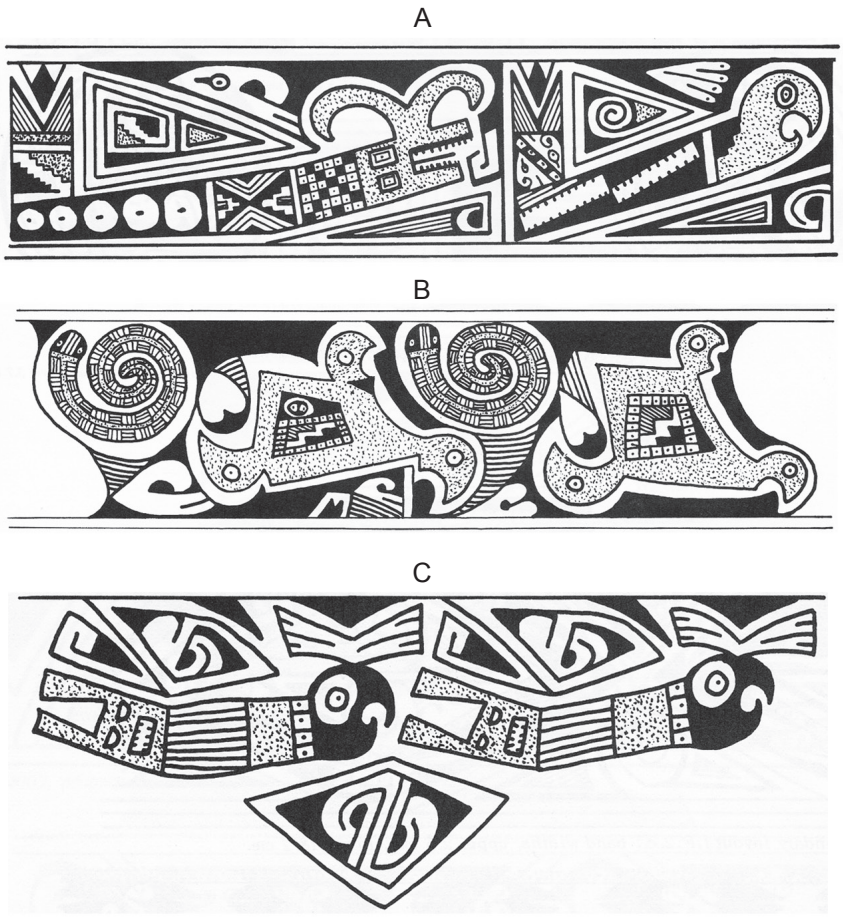


Figure 4.4. Roll-outs of Ramos polychrome vessels depicting both serpent and macaw imagery (Di Peso et al. 1974:6; a. Figure 290-6-26; b. Figure 290-6-60; c. Figure 290-6-62).

The ambiguity noted in distinguishing avian and ophidian imagery on both the Salado Polychromes and the Chihuahuan Polychromes thus appears to have been intentional. Parrots and serpents may represent two aspects or guises of the same figure, with the ambiguity reflecting this association between them.

Crown (1994:165-166) recognized, as have others, that on Chihuahuan Polychromes macaws are depicted with serpent bodies just as serpents and macaws are depicted on the same vessel (Figure 4.4). It is interesting to note that on each of the roll-outs in Figure 4.4 the spade and/or P-motifs is also present among the serpent and macaw imagery.

As mentioned above, VanPool and VanPool (2007:114-115) also recognized that spade motifs may be macaws, but they primarily labeled spade motifs as plumed/horned serpents. I argue that this identification actually detracts from the fact that these are more predominantly conflations of both the macaw and plumed/horned serpent. They describe their interpretation of the plumed/horned serpent motif (or spade motif) in the following way:

> These highly abstract motifs usually look like a spade from a deck of cards cut in half. Although they were occasionally painted red, these half-spades are usually white negative shapes – that is, shapes formed by painting their outline – and are usually in a black triangle. The half-spade motif always has a forward-pointing horn that comes up and over the snout, with the curvature of the horn generally ending at the edge of the snout. A thin line is frequently used to represent a mouth, and the serpents often have decorated eyes with a backward-pointing slit (VanPool and VanPool 2007:115).

This interpretation partly derives from Schaafsma's (1998) work on rock art from the Casas Grandes region. She identified the plumed/horned serpent depicted with a forward-pointing horn extending over an open mouth or snout, which corresponds well to the VanPools' description of the spade motif as the plumed/horned serpent (Figure 4.5).

In contrast, depictions of the spade motif could be viewed with a backward-pointing horn or plume if the "snout" is not considered not to be a snout at all, but the tail feathers of a bird or macaw. For example, Figure 4.6 shows the depiction of a macaw with tail feathers opposite the head. These are rounded on the end with dots, but were painted in rectangular form as most of the tail feathers on the spade motifs are depicted

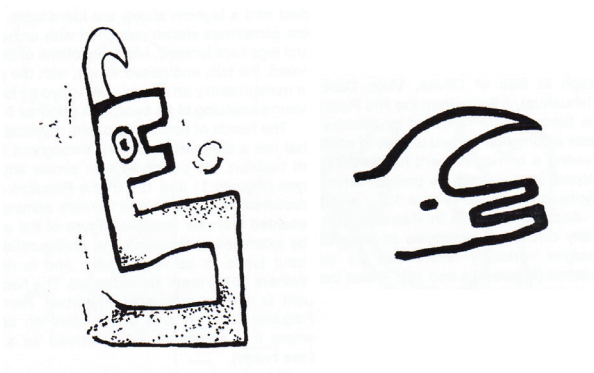


Figure 4.5. Petroglyphs of the plumed/horned serpent on rock art from Arroyo de los Monos near Paquimé (from Schaafsma 2000:37, Figures 11 and 12).

Figure 4.6. Rounded feathers on the tail and head plume of a macaw on a Ramos Polychrome jar (GP10067 ASM).

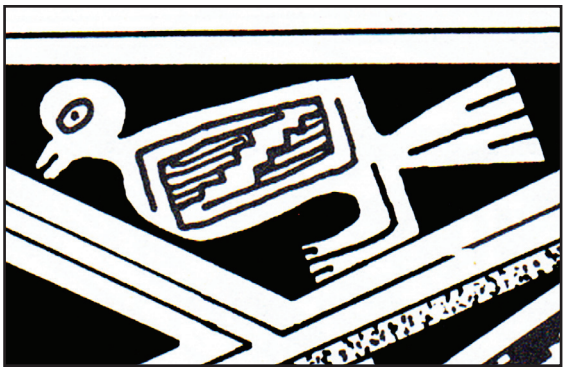


Figure 4.7. Bird from a Ramos polychrome jar (Di Peso et al. 1974:6:267, Figure 290-6-32).

Figure 4.8. Spade motif with bird-like tail feathers on a Ramos polychrome jar (GP3700 ASM).

(see also Di Peso et al. 1974:6:263-271; Figures 290-6-9, 13, 17, 26, 34, and 50).

Figure 4.7 also shows the depiction of a bird from a Ramos Polychrome vessel found at Paquimé. The tail feathers, depicted with one long and two short lines running parallel, are identical to many attached to spade motifs recorded in the Chihuahuan sample in this analysis (Figure 4.8). Another possibility may be that the curved plume is actually the beak of a macaw, especially when the spade is oriented in a vertical position. Finally, the similarities between the spade motif among Chihuahuan Polychromes and the plumed/horned serpents of Salado Polychromes may also suggest that in some cases the direction

Figure 4.9. (a) Chihuahuan spade motif and (b) Salado plumed serpent motif.

of the plume or horn may be backward-pointing (Figure 4.9).

In addition to the spade motif, the P-motif appears to be an abstract form of the spade motif. The curving line may depict the plume of the serpent or the beak of the macaw (see double-P motif at the bottom of the design in Figure 4.4c). As stated above, Di Peso et al. (1974) originally identified this motif as a macaw, but I argue that it represents both the macaw and plumed/horned serpent.

Tlaloc: The Storm God

Another often mentioned similarity between the SW/NW and Mesoamerica is the symbolic representation of the Storm God. In the Maya region, he was referred to as *Chak* and as *Tlaloc* in central Mexico among the Aztecs. This god was related to rain, mist, clouds and water (Riley 2005:10). His main characteristics in Mesoamerica include large round eyes, a large swirling or hooked nose, and fangs (Di Peso 1974:567). The Mesoamerican Storm God has been suggested to appear on rock art near Casas Grandes and El Paso, on Mimbres pottery, and in the imagery of the Anasazi (Ancestral Puebloan) Kachina cult (Di Peso 1974:566; Riley 2005:140-141; Schaafsma 1999:171-172).

Schaafsma (1999) has found correlations between the depictions of Tlaloc in Mesoamerica and on rock art across the SW/NW. She has also linked the "conceptual

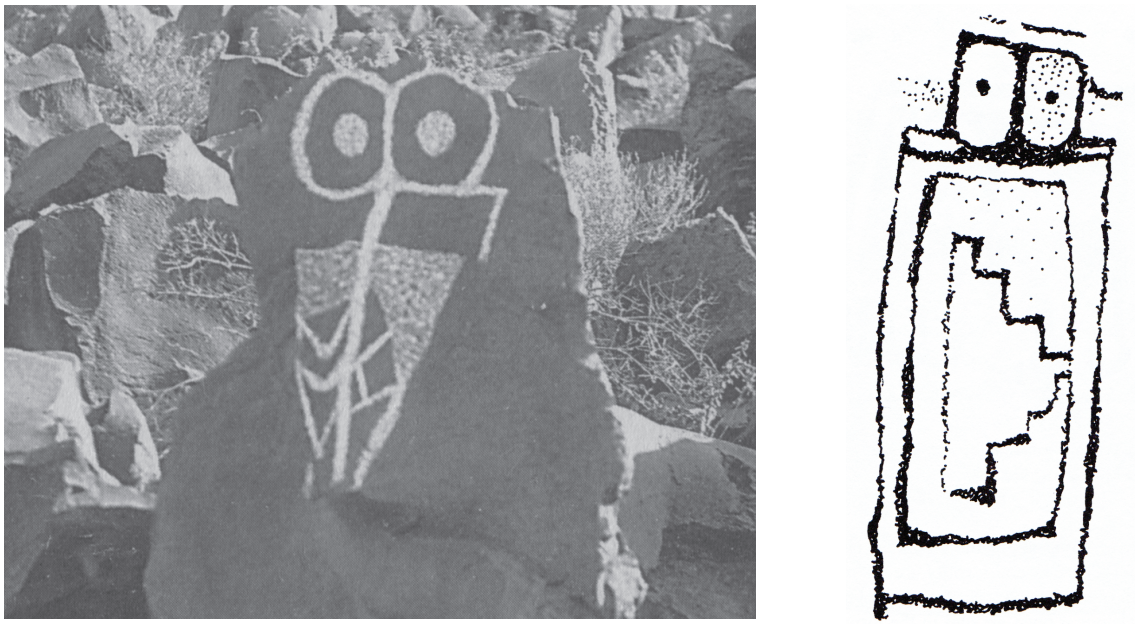


Figure 4.10. Possible rock art representations of Storm God at (left) Black Mesa, Doña Ana County, New Mexico (from Riley 2005:90, Figure 7.3), and (right) Three Rivers, New Mexico (Schaafsma 1999:177, Figure 12.11).

structure" of this Mesoamerican deity to the kachina complex recorded in Puebloan ethnographies (Schaafsma 1999:171-175). The Tlaloc images on rock art typically depict an anthropomorph with large eyes, presumed to represent the goggles worn by the Storm God in Mesoamerican examples, and these are typically associated with a trapezoidal or rectangular body in the SW/NW (Schaafsma 1999:177) (Figure 4.10). This image is found primarily on rock art, although Schaafsma (1999:172-173) and Rice (2010) have noted similar depictions on Mimbres bowls. Additionally, Schaafsma (1999:178) stated that the relation of "Tlaloc" imagery in the Southwest to storms and rain is also manifest in associated symbols such as lightning and the stepped fret (terrace), which is considered to represent clouds (Figure 4.10).

Di Peso (1974:565) also identified a copper crotal or bell as depicting Tlaloc (Figure 4.11), recognized by what he calls "its great round eyes and demoniacal teeth."

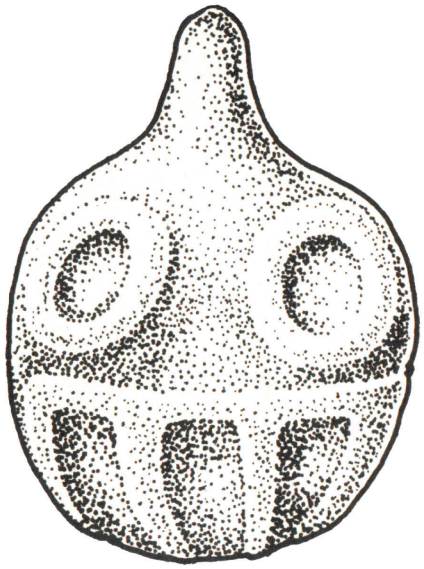


Figure 4.11. Copper crotal found at Paquimé proposed to represent Tlaloc (Di Peso1974:565, Figure 350-2).

Like Schaafsma, Di Peso (1974:566) suggested that terraced or stepped-fret motifs were associated with this deity. He also associated child sacrifice with the veneration of Tlaloc, which Di Peso (1974:566) proposed had occurred at Paquimé based on skeletal evidence.

Knife-wings

Kelley (1964) originally compared the knife-wing motif on Mimbres pottery to depictions found in Mexico at Chichén Itzá in the Yucatan and in central Mexican codices. Among other things, Kelley noted that the knife-wing was connected to death and war in both Mesoamerican and U.S. Southwest contexts. Thompson (2000) revisited this correlation, but he focused on the knife-wing motif on Mimbres ceramics (Figure 4.12). He described this icon as possessing a number of key design elements that are used to identify this motif on pottery. They are: "(1) the wings are extended, (2) the

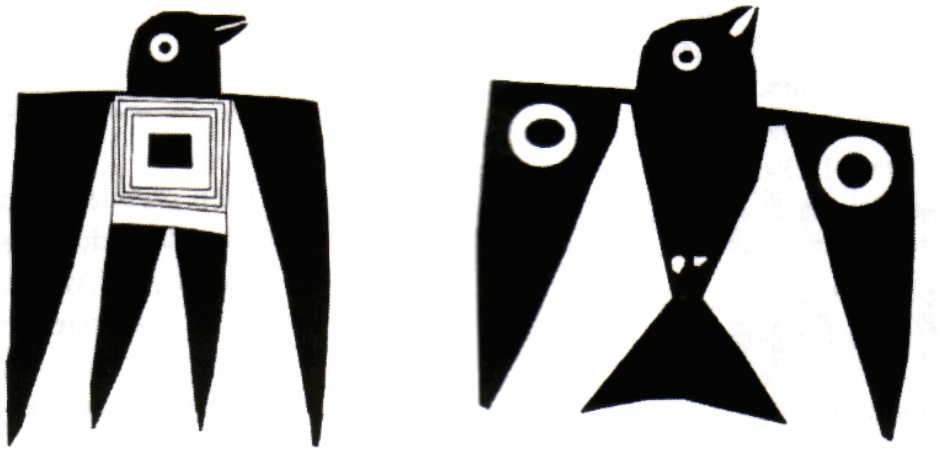


Figure 4.12. Knife-wing motifs from Classic Mimbres Black-on-white bowls (Thompson 2000:149).

wings or wing feathers are represented as knives, (3) the body is presented in anterior position (ventral facing), and (4) the motif often displays anthropomorphic features" (Thompson 2000:147).

According to ethnohistoric sources, the knife-wing motif is linked to a number of cultural associations among the Zuni. It is connected to the Zuni war cult and war god, scalping, stealing women, and the zenith direction. It was also associated with scalping and a war god among the Hopi (Thompson 2000:150).

Thompson (2000:147) proposed that knife-wing motifs depicted on artifacts associated with the Mimbres are "early examples from a cultural continuum extending into Mesoamerica," and he also mentioned that this was over a considerable amount of time. Thompson (2000:150) further interpreted the similarities in iconography in both Mesoamerica and U.S. Southwestern (or Mimbres) regions as making up an "American cultural continuum."

Figure 4.13. Carved stone phallus from Site 242, Chihuahua (Photo courtesy Michael Whalen and Paul Minnis).

Figure 4.14. Ithyphallic hooded effigy jar from Casas Grandes (Di Peso 1974:558, Figure 342-2).

Phalluses

Di Peso suggested that the phallus was a form of Mesoamerican symbolism at Casas Grandes. These were found as carved stone objects and on effigy vessels at Paquimé (Di Peso 1974:558) (Figures 4.13-4.14), and in rare instances associated with imagery on Classic Mimbres pottery.

At Paquimé, Di Peso (1974:557) considered these to be associated with

Xiuhtecutli, the Lord of Fire among people of central Mexico. He stated that this was a "basic theme in various harvest dances that featured male participants who wore exaggerated penises and, in the midst of a display of filth, enacted certain fertility rites" (Di Peso 1974:558). Di Peso also noted these ithyphallic dancers in the Bourbon Codex. In this context, they honored the mother of the earth as the Goddess of Filth and Sin (Di Peso 1974:558-559).

It is also interesting to note that people who participated in the Chalchihuites cultural tradition and who inhabited portions of present-day Durango and Zacatecas, Mexico, also carved similar stone phalluses (Bridget Zavala, personal communication 2010). Several scholars have noted the connection of Paquimé to the Chalchihuites and Aztatlán tradition, and this connection has also been evidenced by other characteristic features such as I-shaped ball courts and platform mounds (Foster 1999; Lister and Howard 1955; VanPool et al. 2008).

Death Masks

Another Mesoamerican symbolic influence proposed by Di Peso (1974:560-561) was the death mask figure that "featured closed eyes, an open mouth (sometimes with a protruding tongue), and occasionally wearing a feather nose ornament." This was thought to have been related to the Mesoamerican representation of the Toltec *Xipe Tótec*, a god of springtime and the regeneration of nature. The Toltec would offer gifts of flayed human skin to this god, and participants in the ritual sacrifice would drape these offerings over their bodies in similitude of *Xipe Tótec*.

Figure 4.15 shows two human effigy forms from the Casas Grandes region that may represent the characteristic "death masks" of this god with closed eyes and open

Figure 4.15. Representations of Xipe Tótec in human effigy vessels (GP38578 and GP38529 ASM).

mouths. Di Peso (1974:561) compared pottery like these to depictions of *Xipe Tótec* found in the Borgia Codex and mentioned that this "cult" also was represented by "trophy heads, vestiges of cannibalism, and ceremonial drinking as ordained by the goddess of the maguey plant (*Mayáhuel*), who was a vital part of the *Xipe* pantheon of vegetation gods."

Twins or Pairs

In Thompson's (1999) study of Mimbres Black-on-white pottery iconography, he compared imagery depicting Mimbres cosmology to that of the sixteenth century Kiche' Maya historical record, the *Popol Vuh*. He found that paired images appeared on more than 200 Mimbres bowls (12 percent of those with Mimbres figurative motifs) (Thompson 1999:125-126). Of these, Thompson (1999:125) noted that 53 of the bowls included paired anthropomorphs, and he interpreted these pairs to represent the Pueblo War twins as well as the Hero Twins of ancient Mayan mythology (Thompson 1999:113).

Thompson (1999:113) also suggested that "twins and the concept of duality"

could also be interpreted from paired animal imagery such as "rabbits, deer, pronghorn, desert bighorn sheep, fish, birds, insects, etc." He stated that "this observation is based on the fact that most zoomorphic pairs are not mirror images, and subtle differences can be detected in depictions of pairs; i.e....the pairs are not identical" (Thompson 1999:125-126).

VanPool and VanPool (2007:38) also noted duality in the form of opposing pairs on Medio period (A.D. 1200-1450) pottery designs at Paquimé. These include "scrolls, triangles with hooks, and various forms of a step element," as well as "macaw or horned-serpent motifs, circles, and *P*-shaped designs." They suggest that this focus on duality during the Medio period is indicative of the cosmology of Casas Grandes, specifically reflecting the association with an "upper world and underworld centered around the middle world of the here-and-now, a view that is consistent with the emphasis on the axis mundi as a center spot uniting these worlds" (VanPool and VanPool 2007:41-42).

The Flower World

Jane Hill introduced the concept of a "Flower World" resulting from her examination of verbal art through song of SW/NW and Mesoamerican ethnographic groups. The Flower World is a spirit land where the dead go, and it is represented by a number of symbols (Hays-Gilpin and Hill 1999, 2000). These include flowers, colorful birds, butterflies, and rainbows (Figure 4.16). Hays-Gilpin and Hill (1999:16) stated that "in Mesoamerica, as in the Southwest, flowers occur in wall paintings and ritual regalia. Most notable are the depictions of flowery paradises, including multiple representations of flowering trees, birds, butterflies, many symbols of water, and images of divinities found at Teotihuacán."

Figure 4.16. Flower imagery on Gila Polychrome bowls from Clines Terrace, Tonto Basin, Arizona (GP11320 and GP11254 ASM).

Hays-Gilpin and Hill (1999:3) also suggest that Flower World imagery may have "intensified during periods of heightened economic stress and social tension." They found it among the Hohokam, Mimbres, Anasazi, Teotihuacán, and possibly Casas Grandes traditions. Crown (1994) also identified flowers and butterflies on Salado pottery, and suggested that they were associated with the Southwestern Cult that she proposes arose with the appearance of the Salado tradition.

Mathiowetz (2008) has also identified iconographical and ethnohistorical similarities between the Flower World complex of Mesoamerica and the Sun Youth in the U.S. Southwest. In particular, he noted similarities between Xochipilli, the central Mexican deity linked to the sun and the Flower World complex, and Payatamu, the Sun Youth of Puebloan mythology. Similar characteristics shared by these mythical personages include their association with flowers, butterflies, the sun, dancing, music, the Flower Mound/Mountain, and macaw feathers/headdresses.

Summary of Mesoamerican Iconography

As reviewed in the description of iconography above, plumed/horned serpents, macaws, macaw/serpent combinations, Tlaloc imagery, knife-wing motifs, phalluses, death masks, twins, and Flower World imagery have all been considered to have origins in Mesoamerica. While several of these symbols have been identified on Salado and Chihuahuan Polychrome pottery, there are a few that were not recognized on the vessels in this study. While Tlaloc imagery is abundant as rock art, it has only been identified in the SW/NW on Mimbres pottery (Rice 2010; Schaafsma 1999). I also did not recognize any design elements or motifs that reflect Tlaloc imagery on the polychrome traditions of the Salado and Casas Grandes regions. In addition, Di Peso (1974: 560-561) suggested that death mask iconography in the form of human effigy faces with closed eyes and open mouths was evidence of a link between the SW/NW and Mesoamerica. While similarities do exist, I am not convinced that these facial features are connected to the Toltec deity *Xipe Tótec*, and therefore I did not record these types of characteristics as being Mesoamerican iconography.

Those that were included in the iconographical analysis include plumed/horned serpents, macaws, macaw/serpent combinations, knife-wing motifs, phalluses, twins/pairs, and Flower World imagery. These are considered Mesoamerican following the interpretations described above, and the inclusion of these symbols in this study follows a preliminary analysis that I conducted to determine which traits would be recorded during the full icongraphical analysis. For pottery from the Casas Grandes and Salado regions, plumed/horned serpents typically appear as heads only, which are triangular in shape with some type of appendage that represent the plume or horn, and

one or two eyes. This is following Crown's criteria (1994:135) in her study of Salado iconography. Macaws appear in different forms, such as whole bodies or as heads only, and are considered Mesoamerican for the fact that these images represent animals that were physically transported from regions in Mesoamerica. In relation to macaw and plumed/horned serpent imagery, I record spade and P-motifs as abstract combinations of these Mesoamerican-derived symbols. Knife-wing and phallus iconography is rare on Salado and Casas Grandes pottery, but I identify them as Mesoamerican following the interpretations of Kelley (1964), Thompson (2000), and Di Peso (1974). I would also agree that the depiction of twins/pairs in the SW/NW may be connected to Mesoamerican mythology. Although possibly a result of artistic convention, duality appears to be a theme for several of the motifs examined in this study. Finally, I found that images such as flowers, butterflies, and birds were also depicted, and as others have suggested (Hays-Gilpin and Hill 1999, 2000; Mathiowetz 2008), these motifs are likely related to the Flower World complex that may have originated in Mesoamerica.

Chapter 5: Iconographical Methods and Data

As described in the first chapter, I presented my expectations for the outcome of this research. If foreign symbols were widely distributed among both more and less hierarchical communities, it would provide evidence to support the hypothesis that these icons were symbolic girders, possibly representing an ideology that served a unifying function to integrate people within these societies (see Crown 1994). On the other hand, if foreign icons were associated mainly with more hierarchical communities, it would support the hypothesis that elites or ritual leaders may have used Mesoamerican iconography to legitimize their power and authority (Bayman 2002; Helms 1993; Lekson 2008:139; Nelson 2006:341; Steponaitis and Knight 2004).

In order to test these expectations, it was necessary to design methods of analysis that were appropriate for iconographical research. Following the work of other archaeologists (Brown 2007; Crown 1994:134; Kubler 1967, 1969, 1970; Phillips and Brown 1978), I adopted and revised the methods of Erwin Panofsky (1972 [1955]), who originally developed a program of iconographical analysis in the field of art history. This chapter begins with a brief review of Panofsky's approach along with an explanation of my revisions to his methods. I also discuss the issue of abstraction and define terms relevant to symbolic and iconographical analysis in this section.

It was necessary to collect and analyze a large corpus of symbols as they were produced and used by people in the Salado and Casas Grandes regions. Due to their durability and availability for research, I chose to use decorated, whole vessels as my source for this iconography. I analyzed pottery from four collections located in three

repositories in Arizona and New Mexico. The criteria for choosing specimens for analysis along with a background and history of each collection are described below. The methods of analysis are also described in this chapter, including details of the design analysis and coding techniques.

A Revision of Panofsky's Iconographical Methods

An obvious difference between modern ethnographic studies of symbolic systems and those of prehistoric contexts is that cultural anthropologists have the ability to converse with those whom they are studying, whereas archaeologists lack access to the people who produced and used symbols linked to cultural traditions. This presents a challenge when interpreting symbolic meaning and the role of iconography among prehistoric societies.

To overcome this impasse, methods specific to archaeology must be designed using contextual analysis to determine symbolic significance and meaning. A few scholars have adopted and modified Panofsky's (1962; 1972 [1955]) method of iconographical analysis (Brown 2007; Kubler 1967, 1969, 1970; Phillips and Brown 1978; Thompson 1999). Although originally developed for use in art history, it has been used as a model for iconographical analysis in archaeology. Panofsky's original methodology divides the interpretation of iconography into three levels of meaning:

1. Primary or natural subject matter (*pre-iconographical description*) – This level involves the identification of the pure forms of an object or icon as well as the expressional qualities. Determining these artistic motifs is considered a "pre-iconographical description of the work of art" (Panofsky 1972 [1955]:28).
2. Secondary or conventional subject matter (*iconographical analysis*) – Included

in this stratum are the motifs and combinations of motifs that are considered to be images and carry secondary or conventional meaning. To get at this level of meaning, it is important to be familiar with themes and concepts relevant to specific time periods as well as historical literature. This includes the identification of "stories and allegories" being represented. It is also important to note that this level, "iconographical analysis," is a narrow definition of that phrase, which Panofsky also uses in a broader sense to connote all three levels analysis.

3. Intrinsic meaning or content (*iconological interpretation*) – The third level represents the "underlying principles which reveal the basic attitude of a nation, a period, a class, a religious or philosophical persuasion" that is contained in one work (Panofsky 1972 [1955]:30). It involves "synthetic intuition," which can be interpreted as the ability to relate to or understand the cultural climate associated with the image.

To illustrate how these levels of meaning can be ascertained, Panofsky (1972[1955]:31) used the example of the Leonardo da Vinci's painting of the Last Supper. The first level (pre-iconographical description) would include the identification of the "primary or natural subject matter." In this case, there are thirteen men depicted surrounding a table that contains dishes, some bread, and drinking glasses filled with a liquid. The second level (iconographical analysis) requires the identification of "conventional subject matter," which includes stories and allegories related to the scenes depicted. For this work of art, the story being represented is that of the Last Supper, where the thirteen men represent Jesus Christ and his twelve apostles at the last meal

before the crucifixion of Christ, as recorded in the New Testament of the Bible. More specifically, it shows the reaction of each of the apostles after Christ reveals that one of them will betray him. Finally, the "symbolical values" of the work of art can be determined (iconological interpretation), and this third level includes the synthesis of several factors and sources such as knowledge of cultural traditions and mythology. As for da Vinci's painting, the Last Supper contains "intrinsic meaning" and can be interpreted to represent the omniscience of Jesus, a rejection of the Christian faith by people during the fifteenth century, or many other symbolic meanings related to that period of time.

The first to apply Panofsky's model of iconographical analysis to prehistory was George Kubler (1967, 1970), who as an art historian, decided to enter the realm of archaeology by analyzing iconography from Teotihuacán and the Classic Maya. He presented a method that mirrored Panofsky's with some minor alterations. His scheme was as follows: 1) Motifs should first be identified much like Panofsky's approach, as they appear in natural form, 2) stories and allegories should be determined by describing the scenes in which the motifs and images appeared, and 3) symbolic meaning could then be determined much as Panofsky described it, using "synthetic intuition." Kubler's main modification came in the second step where he noted that due to the fact that archaeology was mostly devoid of texts associated with prehistoric groups, a "direct reading" of the scenes depicted would suffice. The problem with this approach is that Kubler relied on etic interpretations to describe what events are shown on both Teotihuacano and Mayan art, and this often bleeds into the third stratum of meaning - iconological interpretation.

Phillips and Brown (1978) also integrated Panofsky's model into their analysis

of engraved shell found at Craig Mound at Spiro, Oklahoma. Their exhaustive six-volume set primarily represents the result of pre-iconographical description of all decorated complete and fragmented engraved shell associated with this site. Phillips and Brown adopted Panofsky's first stage of iconographical analysis (pre-iconographical description) and compiled an "enumeration" of motifs with accompanying descriptions, but they stated that identifying the conventional meaning in the second step is impossible. In many cases, we may not know what the actual natural form found in prehistoric iconography represented to the people who used or created it, but ethnographic analogy and oral histories are possible sources that may contribute to this level of meaning. These modern sources should aid in developing conventional nomenclature, and when ethnographic or ethnohistorical records are not available, descriptions based on natural forms developed in the first stage of analysis will suffice.

Finally, Phillips and Brown (1978) indicated that access to knowledge such as provenience could give us insight into the intrinsic meaning of iconography (iconological analysis). For example, many of the images recorded in their study were on marine shell, a valued object due to its foreign origin and rarity. In addition, it was associated with burials in a mound that likely had ceremonial meaning to those who constructed it and into which they interred their kin or elites along with grave goods.

As Kubler (1967, 1970) and Phillips and Brown (1978) have shown, some modifications are necessary to adapt Panofsky's model of iconographical analysis for use in archaeology. In most cases, there are no historical records that aid in the interpretation of prehistoric iconography that would contribute to the second level of meaning (iconographical analysis). In addition, much of the decoration found on the pottery in

my sample consists of geometrical designs in association with motifs whose natural form is all that can be identified. Kubler's suggestion of a "direct reading" of scenes is only applicable in situations where "scenes" are decipherable. For this reason, I do not address the second level of meaning which involves the identification of "conventional subject matter."

For this study, I first present a pre-iconographical description, which focuses on identifying "primary or natural subject matter," including those symbols/icons considered to be Mesoamerican. I also examine contextual data (regional or site-level provenience), the diachronic use of these symbols, and other lines of evidence of interaction in making an iconological interpretation. These different sources of information aid in determining the intrinsic meaning associated with these symbols. I show how foreign symbolism in the form of iconography, trade goods, and ideology was integrated differently into the Salado and Casas Grandes regions, and this evidence guides my interpretations of sociopolitical organization.

When conducting pre-iconographical description, abstraction should also be taken into consideration. This is where a natural form or motif is depicted in a way that is not fully representational of its subject. Abstraction occurs when an artist conventionalizes iconography in a way that alters the natural esthetic of an image. Some motifs are more abstract than others, and I see this phenomenon occurring in levels of abstraction. In other words, iconography can lie anywhere along a continuum that moves from representational to more abstract.

To illustrate this continuum, I use the plumed/horned serpent, which is found on both Salado and Chihuahuan pottery traditions. Crown (1994) identified the motifs in

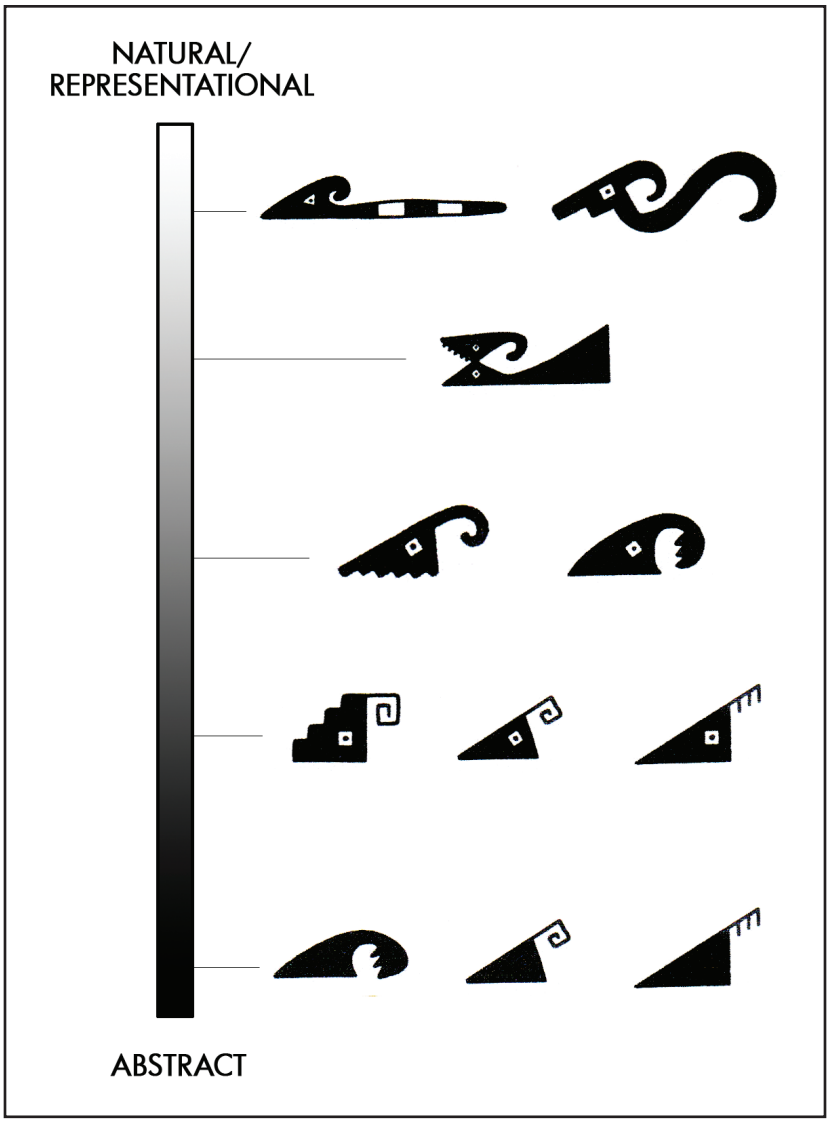


Figure 5.1. Levels of abstraction of the plumed serpent motif (Crown 1994:133).

Figure 5.1 as representing the plumed serpent on Salado Polychrome pottery, and this figure illustrates the continuum moving from the most representational to more abstracted forms. Plumed/horned serpent motifs were often not attached to a body and at times were depicted with an eye. For Crown, the eye was what distinguished a geometric form from a natural form, but it may not always be a required trait in identifying the plumed/horned serpent. What seem to be the most important characteristics in this identification are the

triangular head and some type of plume/horn.

In order to be able to identify both representational and abstract motifs requires time dedicated to inductive research of a large collection of images. By initially comparing similarities, representational and abstract forms of any single motif can be identified. As stated above, this process should be part of the pre-iconographical description. By initially identifying the abstracted forms, a more accurate "enumeration" of motifs and symbols can be made, which will ultimately contribute to iconological interpretation.

Iconographical Terminology

There have been several studies that have addressed iconographical analysis, and in order to maintain clarity, it is important to define the most common terms used in this study of iconography and symbolism. Those defined below include icon, iconography, iconology, symbol, motif, and design element. I will define other terms as they are introduced.

Crown (1994:134) has defined icons as "signs with formal similarities to a referent." Peirce also considers icons to be mimetic, in that they "refer to an object by virtue of its characteristics" (Preucel 2006:56). For this study, I define icons more broadly as simply images or representations of a subject. In association with this word is iconography, which has been defined as a "description of images" and also as a research program in art history that "explores the symbolic references of pictorial representations" (Kippenburg 1987:3).

Panofsky (1972 [1955]:31) defined iconography in contrast to iconology. He stated that "iconography is…a description and classification of images much as

ethnography is a description and classification of human races: it is a limited and, as it were, ancillary study which informs us as to when and where specific themes were visualized by which specific motifs." He goes on to add that iconography is invaluable because it aids in the "establishment of dates, provenance and, occasionally, authenticity; and it furnishes the necessary basis for all further interpretation." The interpretation of images that Panofsky suggested should follow iconography is identified as iconology. He defined iconology as the study of "intrinsic meaning of content, constituting the world of 'symbolical' values" (Panofsky 1972 [1955]:40). While iconography refers to the more general study of icons, principally description and classification, iconology involves a more in-depth reading of meaning or an icon's symbolic value.

To clarify, I will use iconography in two related ways: 1) any collection of images or representations in relation to a genre or cultural tradition (e.g., ceramic iconography or Greek iconography) and 2) the actual study of a collection of images, which involves the description and classification of those images. In this case, I typically use the phrase "iconographical analysis" in the same way that Panofsky used it, in broad reference to all three levels of meaning (Panofsky 1972 [1955]:7). Iconology will refer to the study of symbolic and intrinsic meaning in a collection of images.

The term symbol has been defined several different ways, but most of these have common elements that I use to construct a definition for this study. Turner (1975:146) described symbols as "multivocal, manipulable, and ambiguous." The definition that Hodder (1982b) provided echoes the "multivocal" aspect of Turner's definition. He defined a symbol as "an object or situation in which a direct primary or literal meaning also designates another indirect, secondary and figurative meaning" (Hodder 1982b:11).

White (1975[1949]) characterized a symbol as "a thing the value or meaning of which is bestowed upon it by those who use it…The meanings of symbols are derived from and determined by the organisms who use them; meaning is bestowed by human organisms upon physical forms which thereupon become symbols." Finally, in Peirce's typology of signs, a symbol is defined as "a sign that obtains its character by virtue of some law, usually an association of general idea. In this case meaning is the result of convention" (Preucel 2006:56). An example of a symbol would be a national flag, which represents a country, but has no "inherent meaning" (Preucel 2006:56).

Some common characteristics of symbols according to these definitions are that they are things or objects, they are multivocal or refer to more than just their literal form, and they are conventional in that people apply meanings, which can be done arbitrarily. Taking these characteristics into consideration, my working definition for symbol is an object or thing that is multivocal in that it has both literal (primary) and conventional (secondary) meaning. Symbols, of course, can have more than just two meanings, but they must at least include the literal meaning and one conventional meaning. To give an example, I will use the Statue of Liberty, which has both literal and conventional or figurative meaning. Literally, it represents a woman holding a torch in her right hand, wearing a crown, trampling broken chains, and holding a document in her left hand. Some of the figurative meanings associated with this symbol are independence (i.e., America's independence from Britain on July 4, 1776), freedom/liberty, as well as the camaraderie between America and France, the country that presented the statue to the United States as a symbol of their friendship.

With these definitions in place, I can further show how these terms are linked.

An icon can also be a symbol in that the icon takes on meaning, either primary or secondary, and thus all images that are symbols are also icons (images or representations of a subject). On the other hand, not all icons are symbols or have symbolic meaning. Depending on the purpose of the icon, the icon may only be a literal representation of an object. Determining whether an icon has symbolic meaning is inherently connected to subjective creation, and when access to the creator of meaning is limited or impossible, other avenues for determining symbolic meaning must be used (e.g., context, associated icons, etc.).

Other terms that I will use frequently are related to iconographical analysis, artistic design, and decorative aspects of pottery. In his study of Middle Gila Buff Ware seriation, Wallace (2001) produced an extremely useful glossary of definitions that includes terms related to design analysis. He defined a motif as "an element or group of elements that together make up a coherent piece of a design" (Wallace 2001:401). Within this definition are elements, which are the fundamental aspect of a motif. A design element is considered the "smallest/simplest portion of a design that cannot be further reduced without all loss of recognition as a unit of design" (Wallace 2001:399).

To illustrate these definitions, I will use a common motif found on Salado and Chihuahuan Polychrome pottery. The hooked triangle motif is made up of two combined design elements (Figure 5.2). These include a triangle and some type of appendage, such as a hooked line, spiral/scroll, or a fretted line. Together, these design elements compose a motif. A motif also can consist of only one design element as long as it consistently makes up "a coherent piece of a design" (e.g., diamond or cross).

Figure 5.2. Fret and triangle design elements and fretted triangle motif.

Data Description

In order to examine the expectations stated above, it was important to select samples that 1) clearly depicted the iconography in question, 2) had at least regional provenience data, and 3) were from the Casas Grandes and Salado regions. The first criterion to be met is using a data source that contains Mesoamerican iconography that is clearly identifiable. I chose to use whole vessels because they are a common, durable medium upon which iconography appeared in the prehistoric Southwest. In contrast to rock art, pottery is easily associated with site provenience and can be dated either through stylistic analysis or site-specific chronometric dating. The use of whole vessels also allowed me to identify icons and motifs that commonly appeared together on individual vessels, and for this reason I excluded the use of sherds. In regards to provenience, many of the extant whole vessel collections were looted or accrued by private collectors and lack provenience data. Fortunately, there are a few collections that have regional, site-level, and/or intrasite provenience data that allowed me to verify their locations of use and/or deposition. Finally, it was important that the samples be from the regions in question. The four collections that fit these criteria are described below.

Chihuahuan Pottery Collection (Arizona State Museum, Tucson, AZ)

The Arizona State Museum (ASM) houses the largest collection of Southwest pottery in the country, which includes the largest Chihuahuan whole vessel collection

outside of Mexico, with nearly 1000 Chihuahuan ceramic pots. Additionally, many of these vessels have site-level and/or regional provenience from sites that represent both more and less hierarchical communities in the Casas Grandes region. E.B. Sayles and Harold Gladwin purchased the majority of the vessels on behalf of Gila Pueblo in three major transactions from 1926-1933 (Mike Jacobs, personal communication 2008). Of these, 195 vessels at the ASM are from the original 207 that were purchased from Gus E. McGinnis, a foreman from Hearst Ranch, which was likely located in northwestern Chihuahua at San Jose Babícora. McGinnis's son provided provenience information for these vessels, who led Sayles to six sites from which the pots were removed. Another 217 vessels are from a purchase made by Gladwin from Georgia Houghton in 1929. These were noted by Sayles (1936:92) to have come from Corralitos Ranch, which is approximately 15 km northwest of Colonia Dublán. In addition to those in this purchase, 479 were collected by Edward H. Ledwidge, a collector from El Paso, Texas, from Corralitos Ranch and were purchased in 1926. Mike Jacobs (personal communication 2008) noted that 20 vessels were collected during an Arizona State Museum expedition from the vicinity of Colonia Enrique, which is just south of Corralitos Ranch. Another 39 were purchased from Edward H. Ledwidge's estate in 1934, but these lack verifiable provenience data. From this collection, I analyzed 321 vessels from sites in northern Chihuahua.

Roosevelt Red Ware Collection (RRW) (Arizona State Museum, Tucson, AZ)

The collection of Roosevelt Red Ware pottery at the ASM is the largest of this type. This repository houses a large number of vessels from the Tonto Basin, which is the location of several Salado sites that exhibit hierarchical organization with evidence

of platform mounds. Although large-scale excavations of these sites were completed in the last decade (c.f. Lindauer 1996; Oliver and Jacobs 1997; Rice, ed. 1998), resulting in numerous additional whole vessels with excellent intrasite provenience data, these were repatriated to associated tribes in Arizona. The vessels used for this project are primarily from two platform mound sites in the Tonto Basin: Schoolhouse Point Ruin (n=19) and Clines Terrace (n=107). Looters removed these pots from these sites, and they were eventually purchased by Harold Gladwin of Gila Pueblo sometime in the late 1920s (Patrick Lyons personal communication, 2008).

The Mills Collection (Eastern Arizona College, Thatcher, AZ)

In 2004 and in association with the "Coalescent Communities Project" carried out by the Center for Desert Archaeology and several other institutions, Neuzil and Lyons (2005) analyzed 317 Roosevelt Red Ware vessels on display at the Eastern Arizona University Student Services Building in Thatcher, Arizona. Jack and Vera Mills, avocational archaeologists who recorded their excavations with photographs and notes, originally collected these vessels (Neuzil and Lyons 2005:5). The Mills also compiled reports that derived from their work (c.f. Mills and Mills 1969, 1971, 1972, 1978), and Neuzil and Lyons (2005:5) noted that although "neither Jack nor Vera Mills had a degree in archaeology, they contributed significantly to the understanding of post-A.D. 1200 population movements in the Greater Southwest." Most of the vessels in the Mills collection have at least site-level provenience and were collected from sites that were located principally in southeastern Arizona and southwestern New Mexico. Of the vessels from this collection, I examined 183 whole pots for inclusion in this analysis.

ICC and ARC Collections (Museum of Indian Arts and Culture, Santa Fe, NM)

The Individually Catalogued Collection (ICC) and Archaeological Research Collection (ARC) are managed by the Museum of Indian Arts and Culture (MIAC)/ Laboratory of Anthropology, which is New Mexico's primary repository for artifacts recovered in the state. Various Roosevelt Red Ware and Chihuahuan Polychrome vessels from two sites in western and southwestern New Mexico were analyzed to supplement the data for this research. Two Ramos Polychrome vessels were photographed from Joyce Well, a site that is one of the farthest outliers of the Casas Grandes system located in the boot-heel of New Mexico. In addition, I analyzed seven Roosevelt Red Wares from the Ormand Village, a Salado site that was excavated in 1965 and 1966 on the Upper Gila River.

Site Hierarchy

As mentioned above, the vessels included in this study have either regional or site-level provenience. Using these provenience data and following the assumptions about hierarchy for the Salado and Casas Grandes regions reviewed in Chapter 3, I classified sites as either more or less hierarchical (Tables 5.1-5.2). For the Salado region, I labeled sites that included a platform mound structure as more hierarchical, whereas those without this type of architecture were considered less hierarchical. Three platform mound sites in the Tonto Basin were marked as more hierarchical, and seven others located in southeastern Arizona and southwestern New Mexico were labeled less hierarchical. Casas Grandes sites were classified as more hierarchical if they were located in close proximity to Paquimé (approximately 30 km), and those on the periphery were labeled less hierarchical. Six sites, including Paquimé, were classified as more

Table 5.1. Summary of Salado sites.

Sites	ASM Site Number	Gila Pueblo Site Number	Other Site Name/ Number	Vicinity	Hierarchy	Number of Vessels
Clines Terrace Platform Mound	AZ U:4:33	Roosevelt:5:10	AZ U:2:22(ASU)	14 km upstream from confluence of Tonto Creek and Salt River; eastern side of Tonto Creek.	more hierarchical	107
Schoolhouse Point Platform Mound	AZ U:8:24	Roosevelt:9:11	Upper Pinto Ruin; AZ U:8:60(ASM)	Tonto Basin, above the floodplain of the Salt River and at the confluence of the Salt River and Pinto Creek	more hierarchical	19
VIV	—	—	Meredith Ranch Site	13 km north of Pumpkin Center near Tonto Creek	more hierarchical	38
Curtis	AZ CC:2:3	AZ L:2:11	Buena Vista Pueblo; ARIZONA:CC:2:2(AF)	Graham County, AZ in the Safford Valley	less hierarchical	5
Dinwiddie	—	—	—	Located on Duck Creek, just outside of Cliff, NM	less hierarchical	24
Kuykendall	AZ FF:2:2	—	ARIZONA:FF:2:1(AF)	35 km northeast of Elfrida, AZ in the Sulphur Springs Valley.	less hierarchical	91
Nine Mile	—	—	—	1.6 km south of Bowie, AZ	less hierarchical	20
Slaughter Ranch	AZ FF:11:21	—	ARIZONA:FF:11:2(AF)	Close to the U.S. Mexico border on the old Slaughter Ranch in Conchise County, AZ	less hierarchical	3
Webb	AZ FF:6:4	—	McBride Site; ARIZONA FF:6:1	1/2 km west of the old townsite of Webb, AZ	less hierarchical	2
Ormand Village	—	—	LA 5793	1.5 km south of Cliff, NM	less hierarchical	7
					Total	**323**

Table 5.2. Summary of Chihuahuan sites.

Sites	ASM Site Number	Gila Pueblo Site Number	Other Site Name/ Number	Vicinity	Hierarchy	Number of Vessels
Paquime	CH D:9:1	CH E:9:1	CH D:9:1(AF)	In town of Casas Grandes just west of Casas Grandes River.	more hierarchical	38
Rancho Corralitos	CH D:5	CH E:5	—	Likely located somewhere near present-day Hacienda Corralitos along the Casas Grandes river.	more hierarchical	123
Colonia Enrique Vicinity	CH D:5	CH E:5 (9?)	—	Near Colonia Enrique near Casas Grandes River.	more hierarchical	6
Colonia Enrique Site	CH D:5:8	CH E:5:8 (E:9:8?)	—	About 8 km northwest of Nuevo Casas Grandes and 3 km from the Casas Grandes River.	more hierarchical	35
CH E:5:9	CH D:5:9	CH E:5:9	—	Located along the Casas Grandes River somewhere close to Colonia Enriquez site.	more hierarchical	1
Galeana Vicinity	CH D:14:5	CH E:14:5	—	Located on west side of Santa Maria River about 25 km southeast of Paquime. It lies 2.5 km west of the town of Galeana.	more hierarchical	9
CH A:16:2	NM EE:16:2	CH A:16:2	—	19 km north of Janos on the Casas Grandes River.	less hierarchical	69
CH B:13:1	CH A:13:1	CH B:13:1	—	2.5 km northeast of Ascension.	less hierarchical	26
Janos Vicinity	CH C:4	CH D:4	—	Likely somewhere southwest (2 km) of Janos along San Pedro/Janos River. About 61 km from Paquime.	less hierarchical	6
Babicora Basin	CH H:9:11	CH I:9:11	—	43 km east of Las Varas.	less hierarchical	7
Sitio de Tres Alamos	CH C:3:1	CH D:3:1	—	79 km northwest of Nuevo Casas Grandes on San Pedro River (Colonia Tres Alamos)	less hierarchical	1
Joyce Well	—	—	LA 11823; Site 29HISAR63-16	Located in the boot-heal of New Mexico, SW of Deming.	less hierarchical	2
					Total	**316**

hierarchical, and six less hierarchical sites were located on the outskirts of the Casas Grandes region.

To reiterate, the labels for hierarchy in no way suggest an "either/or" scenario. In other words, I do not consider communities labeled as "less hierarchical" to lack any type of social stratification or political authority. These labels are only meant to simplify this comparison, not to draw distinct lines between static types. The communities in this sample likely lay somewhere along a continuum in which sociopolitical organization varied dependent on several variables including cultural rules of leadership, ecological environments, access to resources, and/or the egoistic aspirations of individual agents. In addition, the system of hierarchy found at platform mound communities from the Tonto Basin and even the close neighbors of Paquimé would not be equivalent to the social complexity found at Paquimé.

Finally, it is important to address the fact that much of the pottery found at these sites have either poor or no intrasite provenience data. This information is valuable because it can aid in determining how these vessels were used. While they may have been utilized in association with ceremonies, as serving dishes, cookware, for display, or as burial furniture, their function is difficult to determine without specific, intrasite provenience data. The value and use of these pots likely changed throughout their life cycles, but I am concerned more with how the imagery on the pottery was distributed among communities, not individuals, that operated at different levels of social hierarchy. Due to the broad geographic perspective of this study, it is appropriate and plausible to take a regional approach in understanding the symbolic function of the imagery in association to sociopolitical contexts.

Data Collection

The Salado and Chihuahuan whole vessels used for this research were located in the four repositories described above. In order to perform a comprehensive iconographical analysis of the vessels, it was important to see the entire decorated surface of each specimen. In an attempt to reduce the amount of time spent analyzing the pots in their respective repositories, I photographed many of the vessels and later was able to perform the iconographical analysis from the photographs. I followed the methods used by Neuzil and Lyons (2005:18) in order to document the vessels' decorated surfaces.

Because of their three dimensional nature, I took several photos of each vessel. For bowls that were decorated only on the interior, I usually took two photos, one of the interior decoration as well as one of the exterior in order to record vessel shape and form. Bowls that were decorated on the interior and the exterior required more than two photographs. In these cases, I took one photo of the interior decoration as well as four of the exterior. Exterior decoration on jars was typically photographed with four profile pictures. Effigy pots included four profile photographs as well as one plan view. By documenting every decorated surface of the vessels, I was able to accurately record the presence/absence of particular iconography.

Access to photographs and data from the Mills Collection, the RRW whole vessel collection from sites in Southeastern Arizona housed at Eastern Arizona College, was granted by Patrick Lyons and Anna Neuzil, who had previously performed an extensive study of the decorated wares in this collection. The director of the Mills Collection, Linda Blan, had given permission to analyze the collection, but due to the ready availability of photographic and metric data in digital format, I did not need to

photograph or analyze these vessels firsthand. Patrick Lyons, head of collections at the ASM, provided me with a copy of the digital archive of the Mills Collection, including databases and photographs, in June 2008. Of the 317 photographed vessels in this collection, I analyzed 183.

In September 2008, I photographed 330 whole Chihuahuan Polychrome vessels located at the ASM, 321 of which fit my sample criteria and were analyzed for this study. Patrick Lyons shared photographs that he compiled for the RRW whole vessel collection housed at the Arizona State Museum in January 2009. From these, I chose 126 Salado Polychromes to represent more hierarchical sites in the Tonto Basin. Additionally, I photographed 17 Chihuahuan and Salado Polychrome vessels in July 2009 at the MIAC in Santa Fe, New Mexico, which concluded data acquisition for this study. Nine of the 17 vessels from the MIAC were included in the iconographical analysis, and in all, 639 vessels were analyzed. This sample was comprised of 307 Salado Polychrome and 332 Chihuahuan Polychrome vessels (Tables 5.3 and 5.4 – Note: The totals on these tables indicate total vessels from Salado and Casas Grandes sites).

The whole pots included four vessel shape categories: bowls, jars, effigies, and miscellaneous types. The majority of the sample was made up of jars (n=325) and bowls (n=254) (Table 5.5). For the Salado Polychromes, bowls were more numerous than jars, and there were only four Salado effigy vessels recorded. In contrast, jars were predominant at the Casas Grandes sites, and the number of effigy vessels (16.3 percent) was almost equal to the number of bowls (19 percent) in the sample. Finally there were two miscellaneous shapes that did not fit either the bowl, jar, or effigy classifications. A Salado vessel in this miscellaneous category was a Tonto Polychrome mug, and an

Table 5.3. Whole vessels from Salado sites.

Types	Site Total:	Clines Terrace	Schoolhouse Point	VIV Ruin	Curtis	Dinwiddie	Kuykendall	Nine Mile Ruin	Slaughter Ranch	Webb	Ormand Village	TOTAL
		107	19	38	5	24	91	20	3	2	7	316
Salado Polychrome Types												
Gila Polychrome (bowl)		79	13	7	1	1	11	3	—	2	—	117
Gila Polychrome: Gila Variety (bowl)		—	—	2	—	—	—	—	—	—	—	2
Gila Polychrome: Tonto Variety (bowl)		—	—	3	—	—	—	—	—	—	—	3
Gila Polychrome, exterior decoration only (bowl)		—	—	—	1	—	—	—	—	—	—	1
Tonto Polychrome (bowl)		10	1	—	—	—	1	—	—	—	1	13
Tonto Polychrome (other)		—	1	—	—	—	—	—	—	—	—	1
Pinto Polychrome		1	—	—	—	—	1	—	—	—	—	2
Cliff Polychrome		—	—	3	—	1	18	2	—	—	—	24
Cliff Polychrome: Gila Variety		—	1	—	—	—	—	—	—	—	1	2
Cliff Polychrome: Tonto Variety		—	1	1	—	—	—	—	—	—	—	2
Ninemile Polychrome: Gila Variety		—	—	—	1	1	1	1	—	—	—	4
Ninemile Polychrome: Tonto Variety		—	—	—	—	—	—	1	—	—	—	1
Phoenix Polychrome: Gila Variety		—	—	—	—	—	—	1	—	—	—	1
Phoenix Polychrome: Tonto Variety		—	—	—	—	—	—	2	—	—	—	2
Dinwiddie Polychrome: Gila Variety		—	—	—	—	1	1	1	—	—	—	3
Dinwiddie Polychrome: Tonto Variety		—	—	—	—	5	—	—	—	—	—	5
Gila style body/Gila style neck polychrome jar		11	1	10	1	2	19	2	1	—	3	50
Tonto style body/Tonto style neck polychrome jar		4	—	2	—	1	12	1	—	—	—	20
Tonto style body/Gila style neck polychrome jar		—	1	9	—	4	18	5	—	—	1	38
Los Muertos Polychrome		—	—	1	—	—	—	—	—	—	—	1
Gila style body/Tonto style neck polychrome jar		2	—	—	—	—	—	1	—	—	—	3
Cliff White-on-red		—	—	—	1	8	—	—	—	—	1	10
Chihuahuan Trade Wares												
El Paso Polychrome		—	—	—	—	—	2	—	—	—	—	2
Ramos Polychrome		—	—	—	—	—	—	—	2	—	—	2
Babicora Polychrome		—	—	—	—	—	6	—	—	—	—	6
Indeterminate Chihuahuan Bichrome		—	—	—	—	—	1	—	—	—	—	1

Table 5.4. Whole vessels from Chihuahuan sites.

Types	Site Total:	CH A:16:2(GP)	CH B:13:1(GP)	Janos Vicinity	CH D:3:1(GP)	Rancho Corralitos	Colonia Enrique Vicinity	Paquimé	CH E:14:5(GP)	CH E:5:8(GP)	CH E:5:9(GP)	CH I:9:11(GP)	Joyce Well	TOTAL
		69	26	6	1	123	6	38	9	35	1	7	2	323
Chihuahuan Polychrome Types														
Ramos Polychrome		25	10	3	—	56	3	12	3	12	—	—	2	126
Villa Ahumada Polychrome		15	2	1	—	27	—	12	6	4	—	—	—	67
Babicora Polychrome		20	9	—	—	26	—	4	—	12	—	5	—	76
Dublam Polychrome		2	—	—	—	5	—	4	—	1	—	—	—	12
Carretas Polychrome		2	—	1	—	5	—	—	—	1	—	—	—	9
Corralitos Polychrome		1	—	—	1	—	1	—	—	—	—	—	—	3
Ramos Black-on-white		1	—	1	—	1	—	—	—	2	—	—	—	5
Playas Red		1	1	—	—	—	—	—	—	—	—	—	—	2
Escondida Polychrome		1	1	—	—	1	—	2	—	—	1	—	—	6
White-paste Babicora Polychrome		1	2	—	—	1	—	1	—	1	—	—	—	6
Mata Red-on-brown		—	—	—	—	—	—	2	—	—	—	—	—	2
Indeterminate Chihuahuan Polychrome		—	1	—	—	—	—	—	—	2	—	—	—	3
Indeterminate Chihuahuan Bichrome		—	—	—	—	1	1	—	—	—	—	2	—	4
Salado Trade Wares														
Tonto Polychrome (other)		—	—	—	—	—	—	1	—	—	—	—	—	1
Phoenix Polychrome: Gila Variety		—	—	—	—	—	1	—	—	—	—	—	—	1

Table 5.5. Shapes and forms of Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Shape/Form	Count	%	Count	%	Count	%
Shape						
bowl	191	62.2	63	19	254	39.7
jar	111	36.2	214	64.5	325	50.9
effigy	4	1.3	54	16.3	58	9.1
other	1	0.3	1	0.3	2	0.3
Bowl Forms						
flare-rim bowl	2	0.7	2	0.6	4	0.6
plate/platter	0	0	1	0.3	1	0.2
outcurved bowl	6	2	3	0.9	9	1.4
hemispherical bowl	41	13.4	10	3	51	8
straight-walled bowl	3	1.	0	0	3	0.5
incurved bowl	84	27.4	46	13.9	130	20.3
semi-flare rim, incurved bowl	49	16.	0	0	49	7.7
semi-flare rim, outcurved bowl	1	0.3	0	0	1	0.2
recurved bowl	5	1.6	1	0.3	6	0.9
Jar Forms						
tall flare-rim jar	7	2.3	2	0.6	9	1.4
short flare-rim jar	75	24.4	110	33.1	185	29
short straight collared jar	2	0.7	46	13.9	48	7.5
tall straight collared jar	7	2.3	2	0.6	9	1.4
seed jar	0	0	5	1.5	5	0.8
neckless jar	0	0	21	6.3	21	3.3
semi-flaring tall straight collared jar	5	1.6	4	1.2	9	1.4
incurved straight collared jar	1	0.3	2	0.6	3	0.5
double jar	7	2.3	3	0.9	10	1.6
jar-in-a-bowl	0	0	1	0.3	1	0.2
semi-flaring angled long collared jar	5	1.6	9	2.7	14	2.2
semi-flaring short straight collared jar	2	0.7	4	1.2	6	0.9
other jar	0	0	5	1.5	5	0.8
Other Forms						
bird effigy	3	1	9	2.7	12	1.9
other animal effigy	0	0	13	3.9	13	2
fish effigy	0	0	4	1.2	4	0.6
anthropomorph effigy	0	0	27	8.1	27	4.2
indeterminate effigy vessel	1	0.3	0	0	1	0.2
conjoined jars	0	0	1	0.3	1	0.2
other ceramic vessel/item	1	0.3	1	0.3	2	0.3

Table 5.6. Salado and Chihuahuan effigy vessels.

	Salado		Chihuahuan		Total	
EffigyType	Count	%	Count	%	Count	%
indeterminate animal	1	25	0	0	1	1.7
bird	3	75	9	16.7	12	20.7
fish	0	0	4	7.4	4	6.9
animal (non-bird/fish)	0	0	13	24.1	13	22.4
human (female)	0	0	4	7.4	4	6.9
human (male)	0	0	4	7.4	4	6.9
human (sex indeterminate)	0	0	1	1.9	1	1.7
human head (hooded or face)	0	0	17	31.5	17	29.3
human body part	0	0	2	3.7	2	3.4
Total	4	6.9	54	93.1	58	100

L-shaped Villa Ahumada Polychrome vessel with straight walls was recorded in the Casas Grandes sample.

There were several different types of effigy vessels noted among both wares, but they were most common as Chihuahuan Polychromes (Table 5.6). I analyzed only four Salado effigy vessels, including three birds and one indeterminate animal. There were 54 effigies in the Chihuahuan sample and most were anthropomorphic, exhibiting a full body or only a head and/or face. There were nine full-bodied human effigies, eight of which depicted sexual organs allowing me to identify four female and four male effigies; one lacked any determinable sexual organs. Seventeen hooded effigies (those whose heads were constructed above the rim of the jar) and vessels that depicted only faces were not attributable to either sex. There were also two decorated ceramic feet that may have belonged to larger vessels. Finally, I recorded several animal effigy vessels in the Chihuahuan Polychrome sample, including four fish, nine birds, and 13 other animal effigies whose forms were unidentifiable.

Methods of Analysis

Analysis was primarily a pre-iconographical description and design analysis of the decorated surfaces of the vessels, which began with a preliminary recording and comparison of motifs as they appeared on both wares. I identified foreign Mesoamerican symbols as well as other common, local motifs and icons that were compiled as a list of possible symbols to be recorded. For each motif and its variations, I devised a coding system that was later quantified for statistical analysis. Appendix A includes the codes and corresponding images of the 10 Mesoamerican motifs (twins/pairs, plumed/horned serpent heads, plumed/horned serpent bodies, macaws, butterflies, flowers/stars, phalluses, spades, P-motifs, and birds) and 16 local motifs (triangles, circles, diamonds, ladders, checkerboards, crosses spirals, interlocked triangle bands, feathers, faces/masks, anthropomorphs, scroll shapes, scroll ends, and other zoomorphs) included in this analysis. Chapter 6 presents the results of this analysis, including descriptions of each motif and its variations.

To record the motifs, I used a Wacom Cintiq monitor, which is equipped with a special touch-sensitive screen that allowed me to digitally draw the icons directly onto the monitor. The resulting digital images were archived in vector format. Vector images are beneficial because image size can be increased without compromising quality, which typically occurs when producing an enlarged image of a digital/raster photograph. This technique also eliminated the steps needed to print photographs, trace them with pen and paper, and finally scan each drawn image in order to compile a record of all motifs. The equipment and process is commonly used by graphic designers and digital artists and has been used to create digital maps during excavation (Searcy and Ure 2008).

In addition to the pre-iconographical description, I recorded other information on the whole vessels analyzed, including a number of variables that were also used to determine differences and similarities between the Salado and Casas Grandes regions. The variables included catalog numbers, provenience, ware, type, vessel shape, vessel form, maximum height, maximum diameter, and orifice diameter. Catalog numbers will allow future researchers to locate the samples using the associated institution's accessioning system. Provenience involves information associated with both regional geographic location as well as intrasite location when available. Data on ware, type, vessel shape, and vessel form was used to determine the variation in the types of media upon which symbols appeared.

For the design analysis, I recorded primary and secondary design layouts (Figure 5.3, Table 5.7), the number of painted surfaces, and design field location. Each of these was also used in determining variation in the stylistic structure of decoration for each polychrome tradition. Other studies have shown that design layouts have been useful in documenting regional and chronological variation (c.f. Crown 1994; Hegmon 1995; Wallace 2001). With some alterations, I adopted the techniques of recording the design layout and motif variations from Crown (1994), Hendrickson (2003), Wallace (2001), and Di Peso et al. (1974). I also adapted the coding system for pottery ware, type, shape, and form used by Neuzil and Lyons (2005). The full coding list for all variables recorded for the current study is in Appendix B. A summary of all the data recorded for each of the 639 vessels analyzed in this study can be found in Appendix C.

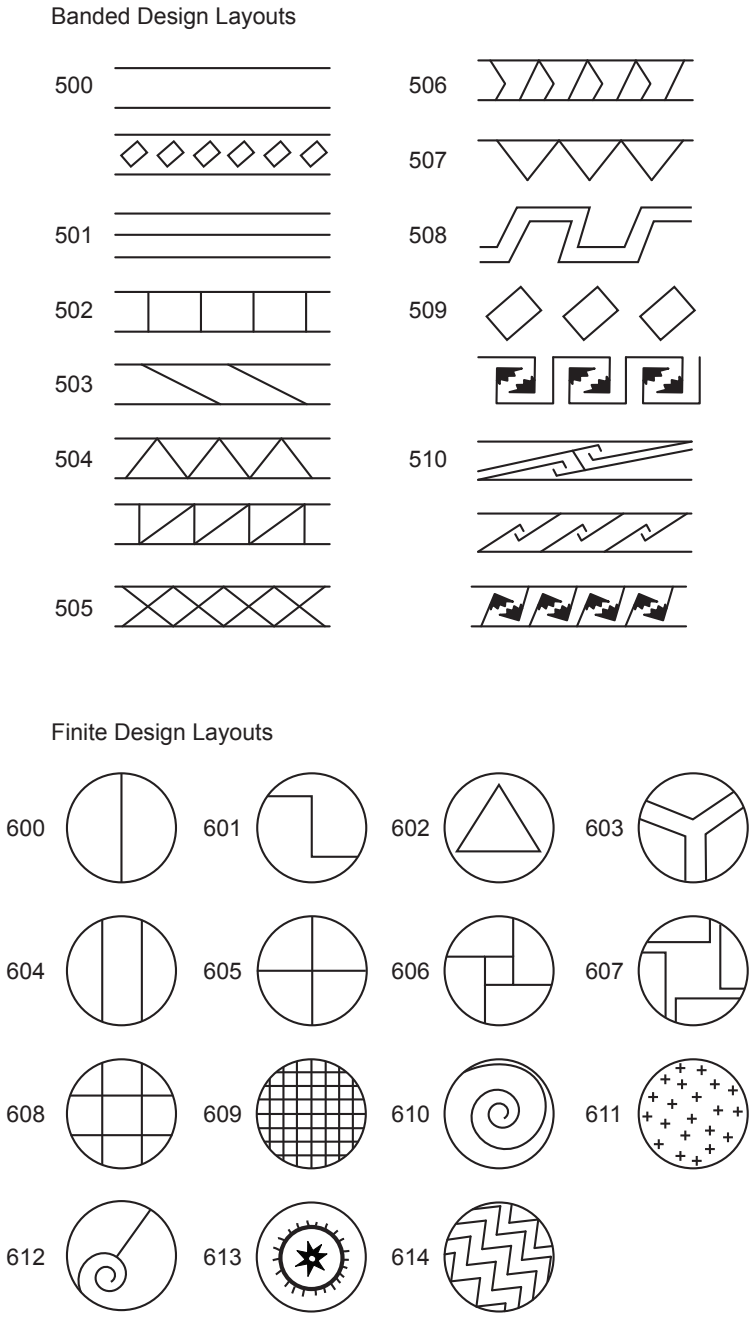


Figure 5.3. Recorded design layouts on Chihuahuan and Salado polychrome pottery (also see Table 5.7 for names of layouts).

Table 5.7. Design layout codes.

Banded design layouts	
500	unsectioned band
501	horozontally sectioned band
502	vertically sectioned band
503	diagonally sectioned band
504	zigzag band
505	double zigzag sectioned band
506	y-frame band
507	top band only
508	unbanded continuous
509	isolated linear (no banding lines)
510	multi-lined continuous

Finite design layouts	
600	bisected
601	offset bisected
602	trisected
603	negative offset trisected
604	spaced trisected
605	quartered
606	offset quartered
607	negative offset quartered
608	double quartered
609	checkerboard
610	central spiral
611	repeated
612	asymmetric
613	banded with central design
614	zigzag

Chapter 6: Iconographical Analysis and Results

The analysis presented in this chapter is divided into two stages. The first stage is a pre-iconographical description and is an enumeration and description of the iconography found on the pottery sample examined in this study. This stage also includes the identification of similarities and differences between pottery types (Salado versus Chihuahuan Polychromes), which need to be considered when interpreting the results of the analysis associated with the distribution of motifs among more and less hierarchical sites. Each motif is described, accompanied by an illustration of its variations and associated descriptive statistics. I also describe the variation that resulted from the design analysis, including intraregional patterns and differences related to each pottery tradition.

The second stage of analysis involves a comparison of the distribution of iconography among sites labeled more or less hierarchical, which is the first part of my iconological interpretation. I also explore the interregional distribution patterns of Mesoamerican symbols in relation to site hierarchy in this second stage, and I conclude with a summary of the results.

Pre-Iconographical Description: Salado versus Chihuahuan Polychrome Pottery

The following section presents the results of the pre-iconographical analysis, which includes the 26 motifs recorded during analysis. It is important to note that evidence of exchange between Salado and Casas Grandes sites is present in the form of trade wares. For this sample, two Salado Polychrome bowls were found at different sites in the Casas Grandes region, and 11 Chihuahuan Polychrome vessels were found at two Salado sites in southeastern Arizona (Tables 5.3 and 5.4). The statistics related to the

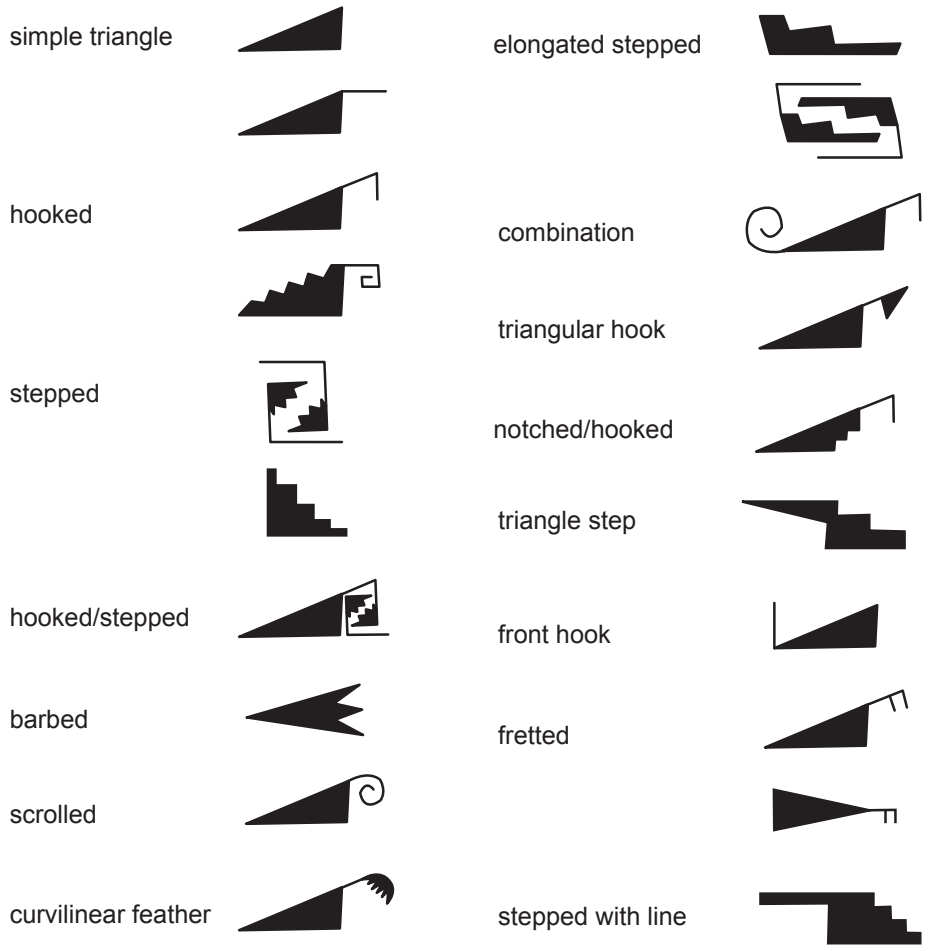


Figure 6.1. Triangle motifs.

frequency of motifs in this first stage of analysis are sorted according to wares, including the traded vessels: Chihuahuan (n=332) and Salado Polychromes (n=307).

Triangles

There are 15 variations of the triangle, most of which are composed of a right or isosceles triangle with some type of appendage (Figure 6.1). Because this is the most common motif of all those recorded, appearing on 595 (93.1 percent) of the 639 vessels, I chose to describe each variation in detail. For the 307 Salado Polychromes, at least one or more forms of the triangle motif appears on 279 (90.9 percent) of these vessels. Of

Table 6.1. Triangle motif frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
simple triangle	207	67	176	53	383	59.9
hooked	59	19	77	23	136	21.3
stepped	185	60	159	48	344	53.8
hooked/stepped	39	13	46	14	85	13.3
barbed	4	1	41	12	45	7
scrolled/spiral	51	17	112	34	163	25.5
curvilinear feather	12	4	2	1	14	2.2
elongated stepped	12	4	50	15	62	9.7
notched/hooked	0	0	4	1	4	0.6
combination	5	2	2	1	7	1.1
triangle step	0	0	3	1	3	0.5
front hook	0	0	6	2	6	0.9
triangular hook	3	1	5	2	8	1.3
fretted	45	15	0	0	45	7
stepped with line	24	8	0	0	24	3.8

the 332 Chihuahuan Polychromes, one or more triangle forms appears on 316 vessels (95.2 percent). Table 6.1 presents a summary of the triangle motif variations showing the number of vessels upon which each variation appears, the percentage of vessels that exhibits the motif for each ware, and the combined appearance on the wares. It may be that triangles with appendages represent plumed/horned serpents, but for this analysis, I recorded them simply as triangle motifs and reserved the identification of plumed/horned serpents to those that exhibit at least one eye, as Crown (1994:135) has suggested.

The single most common variation of the triangle is the simple triangle, found on 59.9 percent of the vessels. This motif appears most commonly as a right triangle, but it is also occurs as an isosceles triangle. Also recorded as simple triangles are right or isosceles triangles with a simple line extending from one side of the triangle (Figure 6.1). Simple triangles are recorded when they appear as independent motifs, often filled with a

solid color, and as part of the design layout configuration.

The hooked triangle typically appears as a right triangle with an appendage that extends from the hypotenuse of the triangle and hooks downward at approximately a 90 degree angle. This motif is fairly common on Salado (19 percent) and Chihuahuan (23 percent) vessels, and it also appears as a band of repeating hooked triangle motifs whose appendages are interlocked. The Salado examples also are often depicted with at least one side of the triangle decorated with serrations or in stepped form. In addition, their hooks occasionally continue into a rectilinear scroll or spiral.

The second most common triangle motif is the stepped triangle, which typically appears as a right triangle with the hypotenuse exhibiting the stepped form. On Chihuahuan wares (48 percent), this motif typically occurs in opposing pairs that are interlocked. These stepped triangles also appear as the termination of complex triangle scrolls, which I describe below. The stepped triangle on Salado wares (60 percent) usually appears in rectangular or triangular panels as part of a small running band of two or more triangles, one of which has either a hooked, scrolled, or other type of appendage that is interlocked with another running band of triangles on the opposite side of the rectangular or triangular panel (Figure 6.2). A variation of the stepped triangle motif is the elongated stepped triangle, which often appears interlocked with another motif of the same style. This motif is more common on Chihuahuan wares and is likely a stylistic characteristic of the region's potters.

Another variation of the stepped triangle is the hooked/stepped triangle, which I identify when the stepped triangle is attached as an appendage to a right or isosceles triangle. In many cases, the hooked/stepped triangle, found on 13.3 percent of all vessels,

Figure 6.2. Stepped triangles depicted in a rectangular panel (17973 EAC).

appears identically on both Chihuahuan and Salado vessels. It appears more often as a right triangle on Chihuahuan wares and commonly as an isosceles triangle on Salado vessels.

The barbed triangle motif only appears four times on Salado vessels and is 10 times more common on Chihuahuan pottery, being found on 41 vessels. This triangle usually occurs as an isosceles triangle with one side exhibiting triangular barbs. These motifs often appear opposed to another barbed triangle, much like the stepped triangle motif. The barbed triangle may simply be a stylistic variation of the stepped triangle.

The scrolled triangle was another common triangular motif that typically appears as a right triangle with an appendage extending from its hypotenuse and terminating in a circular scroll or spiral. Although this motif is more common on Chihuahuan wares (34 percent), it also occurs on Salado wares (17 percent). Like the hooked triangle, the scrolled triangle motif also appears as a running band pattern on several vessels.

The curvilinear feather motif is rare and only occurs on 14 vessels (2.2 percent)

in this sample. Crown (1994:136) also noted the curvilinear feather on Salado vessels analyzed in her study, and she considered it to represent a bird or bat wing. She found that it occasionally occurred on triangular forms, and it was depicted with and without eyes. Only one Salado vessel depicts this motif in my sample, and due to the inclusion of an eye, it was recorded as a plumed serpent. The other examples in my analysis appear as a solid triangle with a curvilinear plume on Chihuahuan vessels, and typically as non-filled triangles with the plume on Salado vessels.

There are a few other uncommon triangle motifs that appear on both Salado and Chihuahuan vessels, including the triangular hook (1.3 percent) and combination triangle (1.1 percent) motifs. Three others only rarely appear exclusively on Chihuahuan wares. The notched/hooked triangle motif occurs four times and is a variation of the hooked triangle, with notches appearing on the side from which the appendage extends. The triangle step (n=3) and front hook (n=6) are two other rarely occurring triangular motifs exclusive to Chihuahuan vessels.

Two other motifs of triangular form that are only found on Salado wares are the fretted triangle (n=45) and the stepped with line motif (n=24). The fretted triangle either appears as a right or isosceles triangle with an f-fret appendage. On almost all Salado vessels, the stepped with line triangle motif appears in a running band of interlocked designs (Figure 6.3).

Circles

Circles appear in various forms and variations (Figure 6.4), and Table 6.2 shows the frequency of each variation. They are also important components of design layout, although I did not record them as motifs when a band encircled the interior of a bowl

Figure 6.3. Stepped with line triangle motif as a running band at rim of a Tonto Polychrome jar with a Gila style neck (449 EAC).

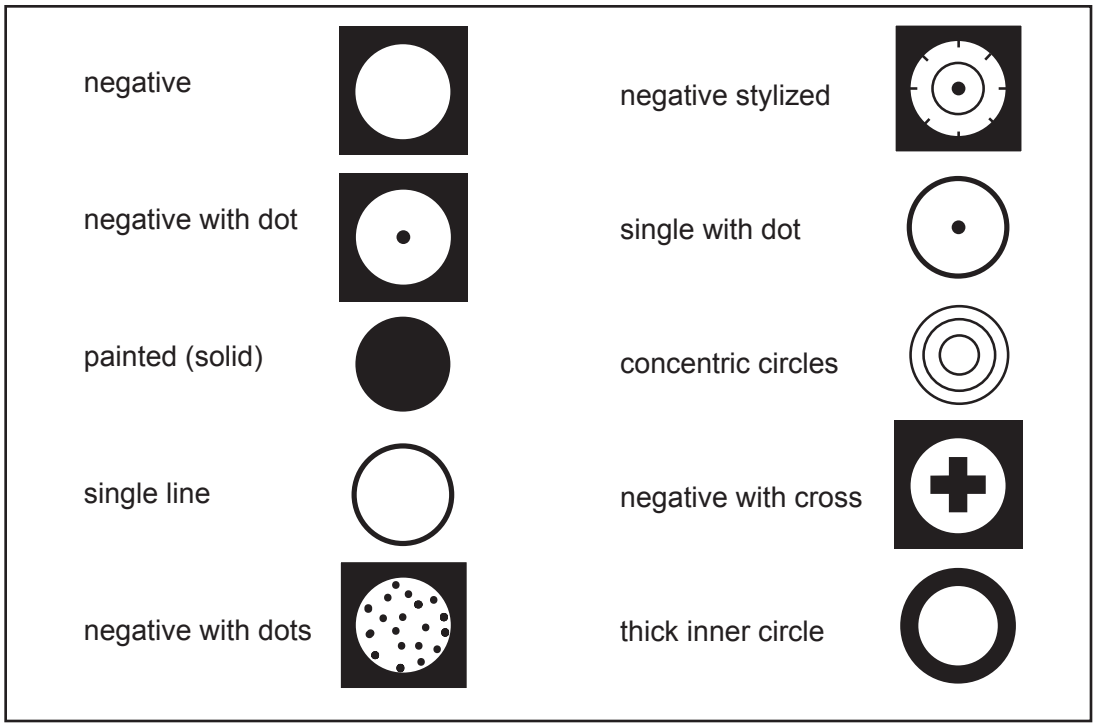


Figure 6.4. Circle motifs.

Table 6.2. Circle motif frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		**Chihuahuan** (n=332)		**Total** (n=639)	
Motif	Count	%	Count	%	Count	%
negative	13	4.2	4	1.2	17	2.7
negative with dot	18	5.9	28	8.4	46	7.2
painted (solid)	0	0	13	3.9	13	2
single line circumference	4	1.3	7	2.1	11	1.7
negative with lots of dots	0	0	3	0.9	3	0.5
negative stylized	5	1.6	4	1.2	9	1.4
single line circumference with dot	0	0	16	4.8	16	2.5
concentric circles	1	0.3	4	1.2	5	0.8
negative circle with cross	3	1	0	0	3	0.5
thick inner circle	19	6.2	0	0	19	3

leaving a negative circular space in the center of the bowl. The only times in which these were recorded is if a separate thick-lined inner circle surrounded the center of this negative space. These circles are significant because this design characteristic appeared most predominantly on Salado vessels found at sites in the Tonto Basin at more hierarchical sites.

The most common circles are the negative and negative with a dot motifs, which appear on both Salado and Chihuahuan vessels. Circles with dots often appear as the eyes of anthropomorphs, macaws, and serpents on both Salado and Chihuahuan vessels. The negative circle occurs as a repeating pattern along the body of a serpent on a Chihuahuan vessel (A-4130 ASM). Negative circles with dots also appear as repeating band patterns on several other Chihuahuan vessels. According to a contemporary potter in Casas Grandes, the negative circle with dot motifs may represent peyote buds, which are harvested in and around the Casas Grandes Valley and are ingested for their hallucinogenic effects (Julian Hernandez personal communication, 2006).

Diamonds

There are six variations of the diamond motif, which appear on 120 vessels (18.8 percent) (Figure 6.5, Table 6.3). The negative diamond with dot motif is the most frequent variation and is only found on Salado vessels. Much like circles with dots, diamonds were used most often to depict the eyes of zoomorphs, and especially those of serpents on Salado pottery. Stylized diamonds are also more common on Salado vessels, with only one example of a painted stylized diamond appearing on a Chihuahuan jar. Many of the Salado stylized examples are elaborated with crosses, terraces, and thick parallel lines.

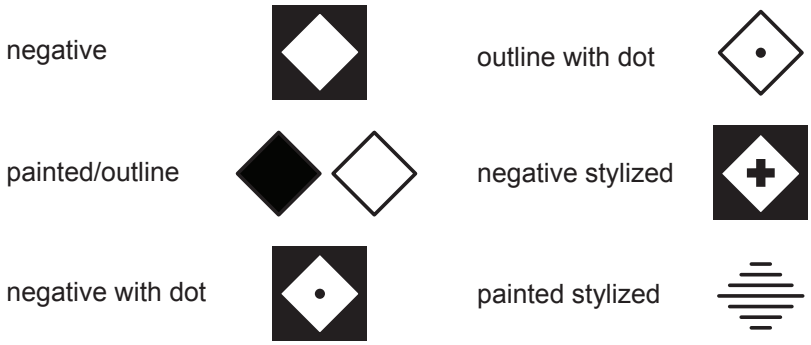


Figure 6.5. Diamond motifs.

Table 6.3. Diamond motif frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		**Chihuahuan** (n=332)		**Total** (n=639)	
Motif	Count	%	Count	%	Count	%
negative	5	1.6	3	0.9	8	1.3
painted/outline	2	0.7	14	4.2	16	2.5
negative with dot	76	24.8	0	0	76	11.9
outline with dot	0	0	2	0.6	2	0.3
negative stylized	24	7.8	0	0	24	3.8
painted stylized	11	3.6	1	0.3	12	1.9

Ladders and Checkerboards

Common across the SW/NW are ladder and checkerboard motifs, which are typically depicted with squares of alternating colors (Figure 6.6). Hendrickson (2003:41) defined ladders as "continuous parallel lines with vertical subdivisions creating a contiguous set of boxes." These singular bands of squares can appear empty or are filled with alternating colors. For ladder motifs that have alternating colors, dots are often added to the empty squares. Crown (1994:133) used "checkerboard" as a label for this motif, but Hendrickson (2003:41) distinguished between the ladder and checkerboard, a distinction I also adopted for this study.

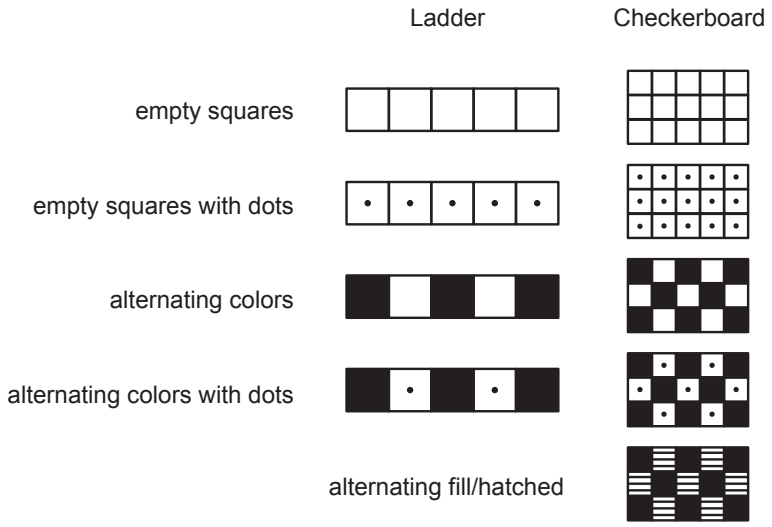


Figure 6.6. Ladder and checkerboard motifs.

In contrast to ladders, checkerboards are a series of "continuous parallel lines with vertical subdivisions" (Hendrickson 2003:41). Any patterns that exhibited two or more layers of "ladders" were recorded as a checkerboard motif. This motif acts as filler for geometric shapes and designs and was also noted as a fill pattern for serpents, turtles, and macaws on Salado and Chihuahuan vessels. There are distinct ware type patterns for some of the variations of ladders and checkerboards (Table 6.4). For example, the empty squares with dots ladder motif is more common on Chihuahuan wares (n=22) than Salado (n=1). Checkerboards that are composed of alternating colors with dots appear more often on Salado vessels. Overall, variations of these two motifs do not appear often, only being depicted on less than 10 percent of either ware.

Terraces and Crosses

Two related motifs are terraces and crosses (Figure 6.7). Half terraces are the most common variation of these motifs on Salado vessels (19.5 percent), whereas these motifs only appear on three Chihuahuan samples (Table 6.5). In addition, there are no

Table 6.4. Ladder and checkerboard motif frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
Ladder						
empty squares	0	0	1	0.3	1	0.2
empty squares with dots	1	0.3	22	6.6	23	3.6
alternating colors	16	5.2	9	2.7	25	3.9
alternating colors with dots	22	7.2	8	2.4	30	4.7
Checkerboard						
empty squares	15	4.9	5	1.5	20	3.1
empty squares with dots	1	0.3	6	1.8	7	1.1
alternating colors	13	4.2	20	6.0	33	5.2
alternating colors with dots	27	8.8	9	2.7	36	5.6
alternating fill/hatched	0	0	2	0.6	2	0.3

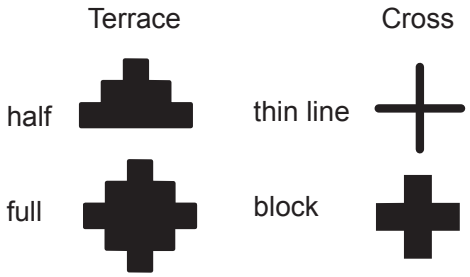


Figure 6.7. Terrace and cross motifs.

Table 6.5. Terrace and cross motif frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
half terrace	60	19.5	3	0.9	63	9.9
full terrace	16	5.2	0	0	16	2.5
thin line cross	4	1.3	2	0.6	6	0.9
block cross	13	4.2	0	0	13	2

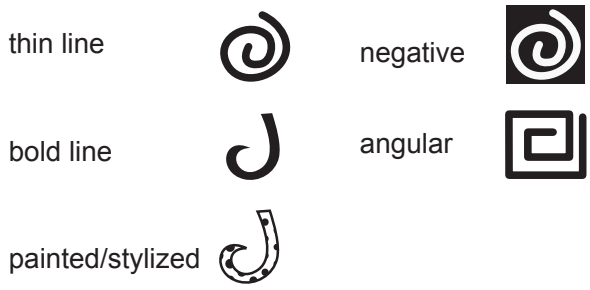


Figure 6.8. Spiral/scroll motifs.

full terrace motifs on Chihuahuan pottery, but there are 16 occurrences of this motif on Salado vessels (5.2 percent). Crown (1994:160) has stated that terraces may be representative of clouds, and she also noted similar percentages for her sample of Salado pottery (half – 17 percent and full – 5 percent).

The cross motif appears in two different variations, but the most prominent are block crosses that were typically painted within negative diamonds that created a running band on the necks of Salado jars. Block crosses also appear with patterned terrace motifs and are likely miniaturized variations of the full terrace. Thin-lined crosses are found on both Chihuahuan (n=2) and Salado (n=4) vessels but are very rare. Crown (1994:159) identified crosses as stars, and she also found that they occurred frequently with serpents.

Spirals/scrolls

The spiral motif appears on 59 Salado and 16 Chihuahuan vessels in five different variations (Figure 6.8, Table 6.6). The majority of the spiral motifs depicted on Salado pottery are stylized/painted (6.8 percent) or angular (11.7 percent). This motif is similar to the scrolled triangle described above, but the motifs recorded for this category are independent of a triangle. Painted/stylized scrolls often fill the entire design field on

Table 6.6. Spiral/scroll motif frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
thin line	1	0.3	5	1.5	6	0.9
bold line	2	0.7	4	1.2	6	0.9
stylized/painted	21	6.8	6	1.8	27	4.2
negative	0	0	2	0.6	2	0.3
angular	36	11.7	1	0.3	37	5.8

Figure 6.9. Painted/stylized spiral motifs on a Ramos Polychrome jar (left - GP3740 ASM) and a Gila Polychrome bowl (right - GP7738 ASM).

Salado bowls, and they typically appear in addition to various motifs on Chihuahuan Polychromes (Figure 6.9). Angular scroll motifs are almost exclusive to Salado pottery, and only one occurs on an indeterminate Chihuahuan bichrome jar at the Kuykendall site in the Salado region. Finally, I also noted that the spiral/scroll is associated with the head and beak of the Salado-style macaw described below.

Interlocked Triangle Bands

This motif is composed of a series of triangles with appendages that run along a

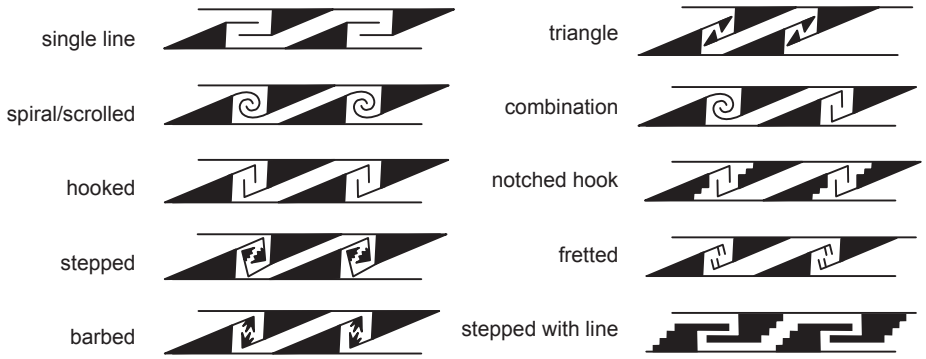


Figure 6.10. Interlocked triangle band motifs.

Table 6.7. Interlocked triangle band frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		**Chihuahuan** (n=332)		**Total** (n=639)	
Motif	Count	%	Count	%	Count	%
single line	1	0.3	0	0	1	0.2
scrolled/spiral	9	2.9	15	4.5	24	3.8
hooked	14	4.6	33	9.9	47	7.4
stepped	6	2	5	1.5	11	1.7
barbed	0	0	2	0.6	2	0.3
triangle	1	0.3	1	0.3	2	0.3
combination	5	1.6	7	2.1	12	1.9
notched hook	0	0	1	0.3	1	0.2
fretted	7	2.3	0	0	7	1.1
stepped with line	17	5.5	0	0	17	2.7

band with an opposing triangle band whose appendages are interlocked with those of the other band (Figure 6.10). These bands were applied to both the rim as a continuous band, or they sometimes encircle the entire vessel as the primary design. This motif occurs in 10 variations, many of which incorporate one or more of the triangle motifs described above (Table 6.7).

For Chihuahuan vessels, the interlocked triangle band appears on 61 vessels (18.4 percent) and is most predominant in the form of hooked triangles (Figure 6.11). The

Figure 6.11. Double-banded Ramos Polychrome with an interlocked triangle band motif (GP38497 ASM).

hooked form occurs on 33 vessels (9.9 percent), and the second most common form is the scrolled or spiral triangle band (n=15/4.5 percent). The most common variations of this motif on Salado pottery is the stepped with line (n=17/5.5 percent) and the hooked band (n=14/4.6 percent).

Interlocked triangle bands are also common on other earlier occurring pottery types found in northern and eastern parts of the U.S. Southwest. Hegmon (1995:118, 164,173, Figures 5.1, 7.2a, and Table 7.1) recorded them on Kayenta pottery, and they have also been noted on Mimbres Black-on-white pottery (Fewkes 1925:30, 32, 42, 44, Figures 23, 31, 106, 118). These earlier depictions and implications for their appearance on later pottery types will be addressed in the next chapter.

Twins/Pairs

As noted by VanPool and VanPool (2007) and Crown (1994), twins or pairs were also part of the Salado and Chihuahuan potters' decorative repertoire. I recorded three different kinds of twins/pairs and found there to be a significant difference between the

Table 6.8. Frequencies and percentages of twins/pairs on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
single pair	3	1	9	2.7	12	1.9
multiple pairs	1	0.3	14	4.2	15	2.3
single pair (effigy)	0	0	6	1.8	6	0.9

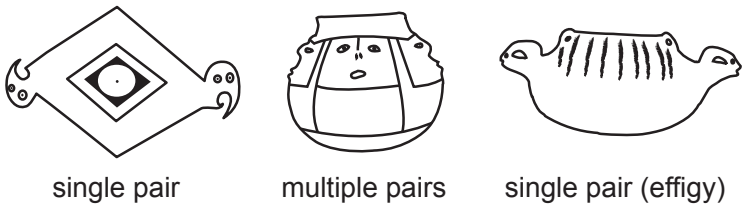


Figure 6.12. Twins/pairs.

two polychrome types (Table 6.8; Figure 6.12). Twins/pairs occur most frequently as multiple pairs in which a paired motif is repeated on a different part of the vessel two or more times. On Chihuahuan vessels these appear as a series of identically decorated faces (n=3) serpents (n=2), a diamond macaw motif (n=1), or spade/p-motifs (n=8). Only one multiple pair is depicted on a Salado vessel as a double-headed serpent (90-5-1144 EAC).

Twins or pairs occur as multiple pairs most often on Chihuahuan vessels compared to Salado pottery. In recording single pairs, I distinguished between effigy vessels and twins/pairs that appear as appliquéd animals or painted motifs. Single pair effigies only occur as Chihuahuan effigy vessels, and single pair painted motifs or appliquéd animals are only slightly more common on Chihuahuan pottery than on Salado Polychromes (Table 6.8). Of the total 33 appearances of twins or pairs, they are predominantly animal forms (n=19) or anthropomorphs/human faces (n=6).

Table 6.9. Feather motif frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
fretted	51	16.6	0	0	51	8
rectangular	0	0	21	6.3	21	3.3
curvilinear	32	10.4	4	1.2	36	5.6
knife-wing	4	1.3	0	0	4	0.6
rounded	0	0	13	3.9	13	2

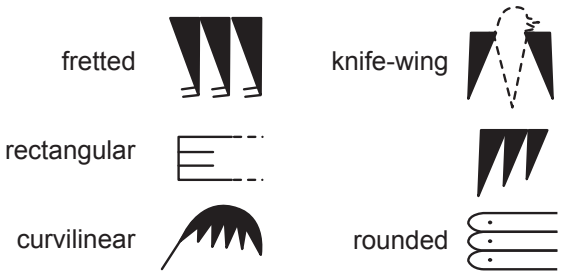


Figure 6.13. Feather motifs.

Feathers

The feather motif was recorded on 81 Salado and 32 Chihuahuan vessels in five variations (Table 6.9; Figure 6.13). Many of these motifs are identified as feathers due to their association with or depiction as wings and tail feathers on birds (Figure 4.6; see also Thompson 2000:149, Figure 17.1c-e). For example, a Gila Polychrome bird effigy vessel (91-1-4 EAC) was painted with three fretted triangles on the appliquéd tail, indicating that these represent feathers.

There are three variations of the feather motif that are most common on Salado pottery (fretted, curvilinear, and the knife-wing) and one exclusive to Chihuahuan wares (rectangular). The fretted variation is exclusive to Salado vessels (n=51) and is most often attached to a triangle, either isosceles or right (Figure 6.13). The curvilinear

feather motif primarily appears on Salado pottery (n=32) and occurs only four times on Chihuahuan vessels, one of which was an El Paso Polychrome that was found in the Salado region (Kuykendall). Crown (1994:138-139) noted that the curvilinear feather or "bird-wing motif" is common on Tusayan Black-on-white, an earlier pottery tradition, which suggests that it likely derived from local origins.

The knife-wing was only noted on four Salado vessels, and of these instances none are actually attached to a bird as Thompson (2000) has identified them on Mimbres pottery. One series of the knife-wing motif does comprise the plume of a plumed/horned serpent on a Tonto Polychrome bowl at Clines Terrace (GP11370 ASM). Rectangular feather motifs are exclusive to Chihuahuan vessels (n=21), and all are attached to or associated with the spade motif except for one that is associated with an abstract form of a bird (GP3687 ASM).

Serpents

Two principle forms of serpents were recorded on the pottery analyzed in this sample, those with a plume/horn and those without. I first describe the serpents without plumes/horns, which appear on eight vessels (one Salado and seven Chihuahuan pots) (Table 6.10). Five of the serpents located on Chihuahuan vessels are appliquéd or appear in relief on the surface of the vessel, and all of them are decorated with stylized bodies. This stylized decoration appears in different patterns such as contiguous negative circles, dots, stripes, and as variations of the ladder and checkerboard patterns. There are also five of these occurrences that depict serpents as twins/pairs. VanPool and VanPool (2007:37, 41-42) noted this twin/pair pattern on Medio period polychromes, and they interpreted duality on Chihuahuan pottery as a reflection of Casas Grandes cosmology

Table 6.10. Serpent motif frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
Serpent						
stylized serpent body	1	0.3	7	2.1	8	1.3
Plumed/Horned Serpent Head						
circular spiral/scroll	8	2.6	2	0.6	10	1.6
curvilinear feather	1	0.3	0	0	1	0.2
rectilinear scroll/hooked	17	5.5	0	0	17	2.7
fretted	5	1.6	0	0	5	0.8
stepped	6	2	0	0	6	0.9
stepped with line	3	1	0	0	3	0.5
knife-wing	1	0.3	0	0	1	0.2
barbed	1	0.3	0	0	1	0.2
indeterminate	0	0	1	0.3	1	0.2
Plumed/Horned Serpent Body						
bold/filled	1	0.3	0	0	1	0.2
stylized	1	0.3	1	0.3	2	0.3

and the representation of the upper and lower worlds.

The plumed/horned serpent was one of the Mesoamerican symbols described earlier (Figure 6.14). Other scholars have recognized these motifs on both Chihuahuan and Salado vessels and have been described previously in great detail (see Crown 1994; VanPool 2003b; VanPool and VanPool 2007; VanPool et al. 2008). Following Crown's (1994:135) criteria, I recorded plumed/horned serpents that include at least a head, typically triangular with some type of appendage representing a plume/horn, and at least one eye. In only three cases of 43, plumed/horned serpents have an attached body. These motifs appear most predominantly on Salado vessels (n=40), with only three occurrences on Chihuahuan jars. The most common variations are serpent heads with either a circular (n=8) or rectilinear (n=17) scroll or hook.

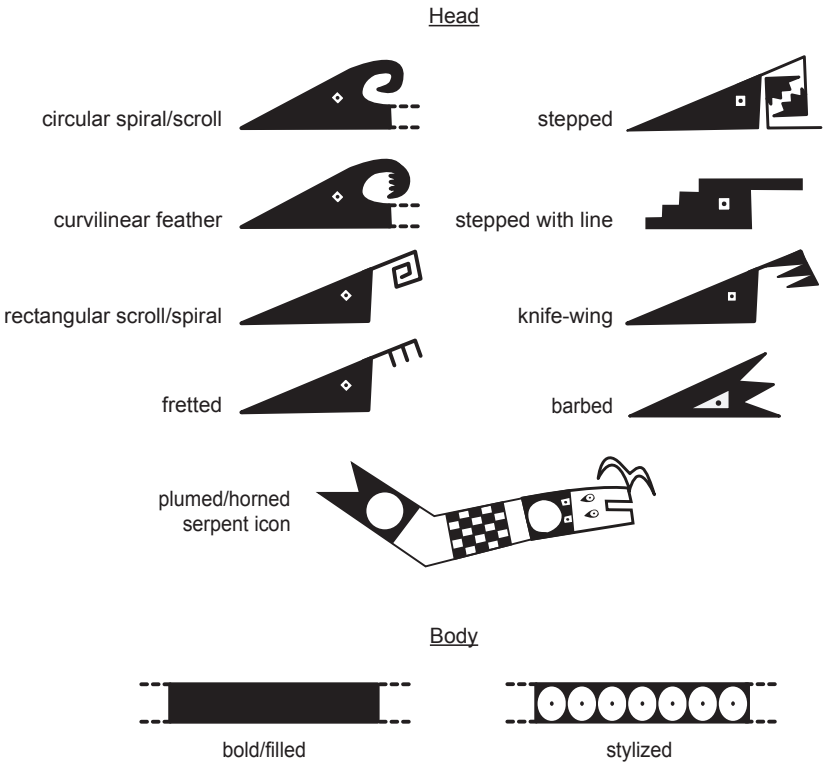


Figure 6.14. Serpent and plumed/horned serpent motifs.

As mentioned earlier, VanPool and VanPool (2007) have described the plumed/horned serpent extensively and have most commonly identified it as a spade motif on Casas Grandes pottery. VanPool (2003b:190-191) also distinguished between the plumed/horned serpent motif and icon. She indicated that motifs typically appear in the shape of the spade and are usually depicted with eyes. The plumed/horned serpent icon, on the other hand, appears as a predominant symbol in the design layout of jars, usually wrapping around the center and appearing with either a single or double plume. Another feature common of plumed/horned serpent icons is that they are usually depicted in a V-shape (VanPool 2003b:198-199). I noted only one plumed/horned serpent icon on a Villa Ahumada Polychrome jar, although the portion of the pot where the plume

Table 6.11. Macaw motif frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
two-headed diamond macaw	0	0	1	0.3	1	0.2
full body	1	0.3	1	0.3	2	0.3
effigy/appliqued	0	0	3	0.9	3	0.5
Salado style	12	3.9	2	0.6	14	2.2

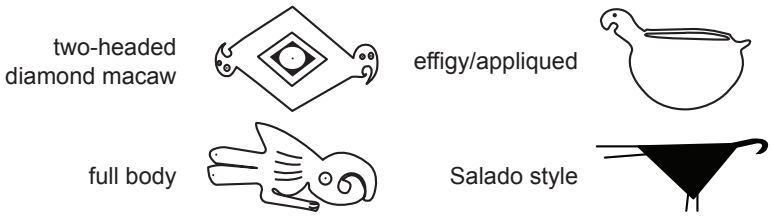


Figure 6.15. Macaw motifs.

is typically depicted had been worn away. Due to the ambiguity of the head/plume, I identified this occurrence as an indeterminate plumed/horned serpent (Table 6.10).

Macaws

Macaw motifs have also been identified as Mesoamerican and appear on 20 vessels in four different forms (Table 6.11; Figure 6.15). The most common is the Salado style macaw, which typically consists of a triangular body and a hook representing the beak. These macaws also appear with plumes extending from the opposite ends of their bodies, representing tail feathers. Of the 12 occurrences of this variation, all are painted in single or multiple pairs. There are also small variations in the Salado style. For example, some occasionally appear hanging upside-down from the top band or an undulating band that encircles Tonto Polychrome bowls and jars (Figure 6.16). They may also be painted black or stylized with a number of different filler motifs.

Figure 6.16. Salado style macaw painted upside down on a Tonto Polychrome jar (90-5-1001 EAC).

There are only seven examples of the macaw either as a motif or as an effigy in the Chihuahuan sample. One is the two-headed diamond macaw motif, another is a painted macaw depicted with a body. Two more are effigy vessels in the shape of a macaw or macaw head, and a Ramos Polychrome jar has two small appliquéd macaws on opposing sides of the rim. There are also two vessels that depict the macaw in the Salado style.

Flower World Motifs: Butterflies, Flowers/Stars, and Birds

As described in Chapter 4, some archaeologists (Hays-Gilpin and Hill 1999, 2000; Mathiowetz 2008) have considered Flower World imagery to have originated in Mesoamerica, and it is typically represented by four principle symbols or motifs: butterflies, flowers, rainbows, and birds. Of these motifs, only butterflies, flowers, and birds are present on the Salado and Chihuahuan pottery in this study (Table 6.12, Figure 6.17).

Table 6.12. Flower world motif frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
Butterfly						
opposing isosceles triangles	9	2.9	0	0	9	1.4
opposing right triangles	3	1	0	0	3	0.5
Flower/star						
pointed	3	1	0	0	3	0.5
defined by design layout	26	8.5	2	0.6	28	4.4
Bird						
macaw	13	4.2	7	2.1	20	3.1
owl	0	0	1	0.3	1	0.2
duck	0	0	1	0.3	1	0.2
indeterminate	3	1	7	2.1	10	1.6

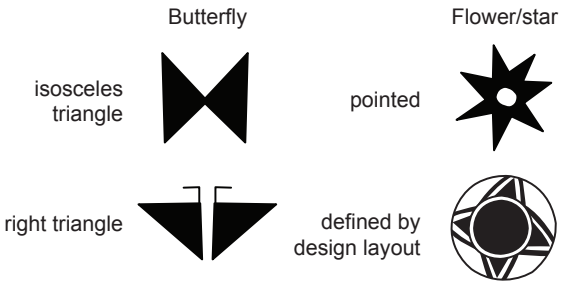


Figure 6.17. Butterfly and flower/star motifs.

Butterflies were recorded as either opposing isosceles or right triangles and are exclusively on Salado vessels (Figure 6.17). Three are of the opposing right triangle form, which was one of the variations that Crown (1994:151) also identified in her sample of Salado Polychrome vessels. This variation also includes antennae that extend from the tops of the triangles. Although nine butterflies of the paired isosceles variation were counted, these are not likely representative of butterflies due to their composition/placement as a repeated motif and due to their lack of antennae. Considering this discrepancy, the butterfly motif (right triangle variation) only occurs three times, or on

Figure 6.18. Flower/star motif as defined by the design layout on a Gila Polychrome bowl (GP11254 ASM).

less than one percent of the Salado vessels (0.9 percent). This is comparable to Crown's Salado sample where the butterfly motif only occurred on 1.3 percent of the vessels.

Flowers or stars (Figure 6.17, Table 6.12) appear on 29 Salado vessels and on only two Chihuahuan Polychromes. Three are pointed motifs that have from six to nine points, all of which occur on Salado vessels. The majority of the flower/star motifs are defined by the design layout of the bowl or jar (Figure 6.18). For bowls, these are visible when the artist used a negative offset quartered or trisected design layout. This motif on jars is typically only visible when the jar is viewed from above, and they usually result from the use of the y-frame band design layout (see Figure 5.3-506).

Thirty-two birds were recorded either as macaws (n=20), owls (n=1), ducks (n=1), or indeterminate types (n=10). Macaws are the most frequent of all bird types, appearing on both Chihuahuan and Salado vessels, as described above. Of the 10 indeterminate types, eight are effigy vessels that consist of at least a head and tail, and some include wings. One vessel (A-4130 ASM) found at Paquimé includes an appliquéd bird with

Table 6.13. Anthropomorph frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
Face/mask						
single face	0	0	1	0.3	1	0.2
double-faced	0	0	2	0.6	2	0.3
multiple faces (≥3)	0	0	1	0.3	1	0.2
motif (painted)	2	0.7	3	0.9	5	0.8
Anthropomorph						
male effigy	0	0	4	1.2	4	0.6
female effigy	0	0	4	1.2	4	0.6
androgynous effigy	0	0	1	0.3	1	0.2
hooded effigy	0	0	13	3.9	13	2
full-bodied (painted)	0	0	2	0.6	2	0.3
Body parts						
foot	0	0	2	0.6	2	0.3
phallus (part of effigy)	0	0	4	1.2	4	0.6

a pointed beak and a red crown possibly representing a Gila woodpecker, which are common in the Chihuahuan desert. The other two vessels depicting indeterminate birds are painted motifs on two different Ramos Polychrome jars.

Anthropomorphs

The anthropomorphic iconography includes variations of human effigies, body parts, and depictions of human bodies or faces (Table 6.13). Anthropomorphic images are most common among Chihuahuan vessels, with only two occurrences appearing on Salado Polychromes. Human effigy vessels are only found among the Chihuahuan sample and occur as full-bodied effigies (including appliquéd/relief head, arms, hands, and feet), "hooded" effigies, and appliquéd/relief faces (Figure 6.19). There are four males, four females, and one androgynous full-bodied effigy vessel. The most common

Figure 6.19. Three types of human effigies: a) full bodied (GP3687 ASM), b) hooded (GP3684), and c) face (GP38529 ASM).

anthropomorphic representation is the hooded effigy vessel (n=13), which is composed of a head or "hood" that extends above the rim of the jar on half of the vessel. Facial features, such as noses, chins, and ears on these hooded effigies tend to be appliquéd and painted. There are also nine human-like faces/masks that were appliquéd or painted as motifs below the rim. The only two faces found on Salado vessels were painted motifs.

Two other body parts that I recorded were phalluses and feet, which are few in number and all from Chihuahua. Phalluses were recorded because of Di Peso's (1974:558-559) suggestion that human figures holding their penises are representative of a Mesoamerican religious cult. There were only four phalluses recorded, and they all appear as small appliquéd bumps anatomically placed on male effigy vessels. None of the examples are of the type in which males are holding an erect penis as Di Peso (1974:558) described. The second body part recorded were two formed ceramic feet. Each exhibit broken edges around the ankle area, so they may have been attached to a

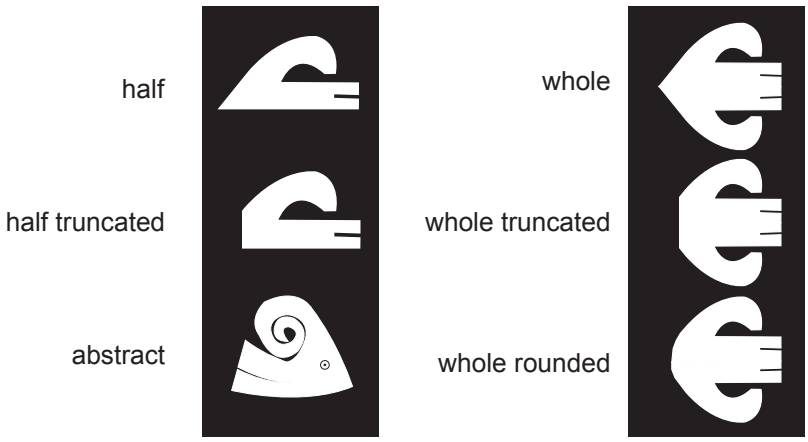


Figure 6.20. Spade motifs.

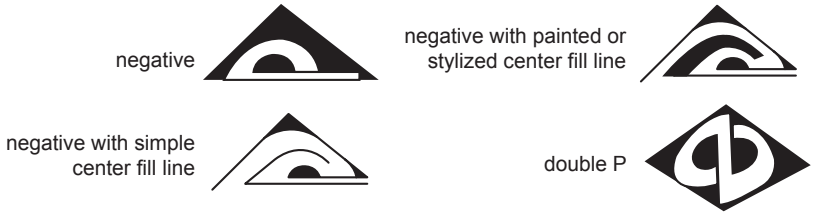


Figure 6.21. P motifs.

larger figure, but large effigy vessels that would accommodate such feet have not been found in the Casas Grandes region.

Spades and P-motifs

In Fenner's analysis of the ceramics from Casas Grandes, she stated that for Ramos Polychrome pottery the macaw motif "was noted often enough to be considered a hallmark of this type, and further, a special hallmark, as its occurrence in other areas of the American Southwest was limited" (Di Peso et al. 1974:6:99, 282-283). In this description, she was referring not only to representational depictions of macaws, but also spade and P-motifs. As discussed in Chapter 4, I identify the spade and P-motifs as a combination of the plumed/horned serpent and macaw (Figure 6.20-6.21). What is

Table 6.14. Spade and P-motif frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
Spade						
half spade	0	0	15	4.5	15	2.3
half spade/truncated point	0	0	1	0.3	1	0.2
whole spade	0	0	7	2.1	7	1.1
whole spade/truncated point	0	0	2	0.6	2	0.3
whole spade/rounded point	0	0	3	0.9	3	0.5
abstract/other	0	0	5	1.5	5	0.8
P-motif						
negative	0	0	18	5.4	18	2.8
negative/simple center fill line	0	0	45	13.6	45	7.0
negative/painted or stylized center fill line	0	0	11	3.3	11	1.7
double P	0	0	2	0.6	2	0.3

significant about both of these motifs is that they are only found on Chihuahuan pottery (Table 6.14).

I recorded the spade motif 33 times on Chihuahuan pots, the majority appearing on Ramos Polychromes (79 percent). This motif was painted in several different variations, but was typically applied to pottery as half (n=16) or whole spades (n=12), and many of these appear with eyes indicating that they represent some type of life-form (Figure 6.20). There are also five other abstract forms of either the half or whole spade motif.

The P-motif is likely a variation of the half spade motif, almost always painted in negative form and occasionally exhibiting a painted or stylized line that is drawn through the center of the curve (Figure 6.21). Apart from triangle motifs, the P-motif is one of the most common, occurring 76 times in four different forms on Chihuahuan vessels (21 percent).

Table 6.15. Complex scroll frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
Scroll Shape						
rectangular	1	0.3	13	3.9	14	2.2
triangular	0	0	20	6.0	20	3.1
composite triangular scroll	0	0	68	20.5	68	10.6
composite triangular scroll (right angle)	0	0	3	0.9	3	0.5
P triangle	0	0	31	9.3	31	4.9
circular	0	0	1	0.3	1	0.2
diamond	5	1.6	1	0.3	6	0.9
Scroll Ends						
simple (lines)	0	0	1	0.3	1	0.2
stepped triangle	5	1.6	69	20.8	74	11.6
spiral	1	0.3	38	11.4	39	6.1
hooked	0	0	2	0.6	2	0.3
P shape	0	0	37	11.1	37	5.8
barbed	0	0	2	0.6	2	0.3
triangle/front hook	0	0	3	0.9	3	0.5

Complex Scrolls

There are 115 vessels in the sample that exhibit one or more forms of the complex scroll motif (Table 6.15). This motif has several variations composed of different scrolling shapes that terminate at the center with some type of stylized end (Figure 6.22). Only six complex scroll motifs are present on Salado vessels, five of which are of a diamond shape and terminate in a stepped triangle (Figure 6.23).

The complex scroll occurs on 109 Chihuahuan vessels, and of these, 66 percent appear on Ramos Polychrome vessels, 15 percent on Villa Ahumada Polychromes, 11 percent on Babícora Polychromes, and eight percent on other Chihuahuan types. Of the seven different scroll variations, composite triangular scrolls are the most frequent (n=71 or 65 percent), with 55 of those occurrences found on Ramos Polychromes (77.5 percent) (Figure 6.24). The second most common variation is the P triangular scroll that terminates in the P-motif (n=31 or 9.3 percent).

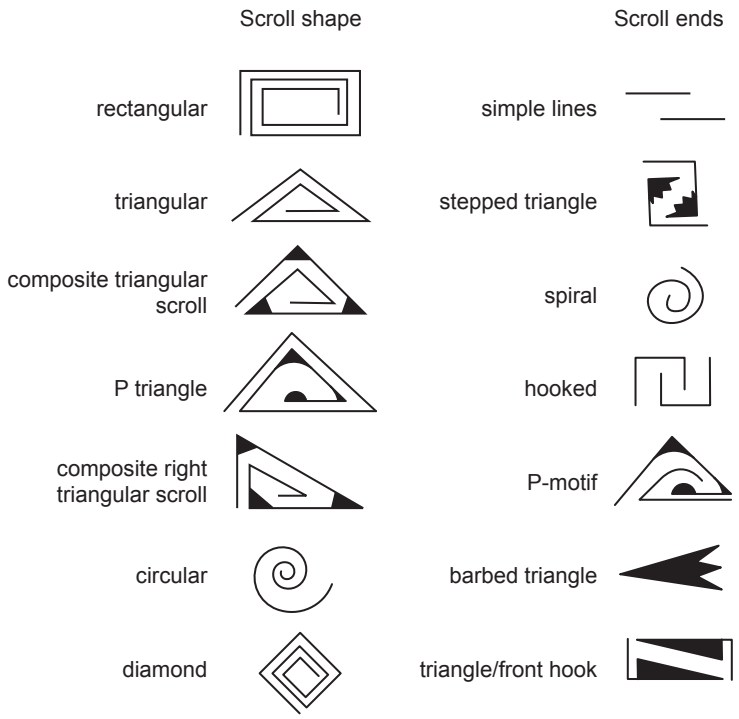


Figure 6.22. Complex scroll motifs.

Figure 6.23. Diamond shaped complex scroll terminating in interlocked stepped triangles on a Cliff Polychrome bowl (90-5-1157 EAC).

Figure 6.24. Composite triangular scroll terminating in interlocked stepped triangles on a Ramos Polychrome jar (14430 ASM).

Table 6.16. Other zoomorph frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total (n=639)	
Motif	Count	%	Count	%	Count	%
indeterminate	0	0	6	1.8	6	0.9
bighorn sheep	0	0	2	0.6	2	0.3
frog	0	0	1	0.3	1	0.2
turtle	0	0	4	1.2	4	0.6
fish	0	0	1	0.3	1	0.2

Figure 6.25. Frogs attached to a Babícora Polychrome jar (GP3859 ASM).

Zoomorphs

Macaw and serpent animal forms are the most common zoomorphic forms on the pottery analyzed, but I also recorded other animal motifs or animal effigies, including bighorn sheep, frogs, turtles, fish, and indeterminate forms (Table 6.16). These occur quite infrequently, and three non-macaw birds are the only other zoomorphs recorded on Salado vessels. (Bird motifs are described above in the section on Flower World motifs.) Of the Chihuahuan sample, there are four turtles, two bighorn sheep, and one fish, all of which are effigy vessels. One Babícora Polychrome vessel has four appliquéd frogs perched below the rim of the jar (Figure 6.25). Finally, there are also six indeterminate zoomorphs on Chihuahuan Polychrome vessels, but none appear on Salado vessels.

Table 6.17. Motif frequencies for Salado and Chihuahuan wares.

	Salado (n=307)		Chihuahuan (n=332)		Total
Motifs	Count	%	**Counts**	**%**	**(n=639)**
triangle	279	90.9	316	95.2	595
circle	54	17.6	68	20.5	122
diamond	103	33.6	17	5.1	120
ladder	37	12.1	37	11.1	74
checkerboard	10	3.3	38	11.4	48
terrace	7	2.3	3	0.9	10
cross	17	5.5	2	0.6	19
spiral	59	19.2	16	4.8	75
interlocking triangle band	53	17.3	61	18.4	114
twins/pairs	4	1.3	29	8.7	33
feather	81	26.4	32	9.6	113
p/h serpent	40	13	3	0.9	43
serpent	1	0.3	7	2.1	8
macaw	13	4.2	7	2.1	20
butterfly	12	3.9	0	0	12
flower/star	29	9.4	2	0.6	31
face/mask	2	0.7	7	2.1	9
phallus	0	0	4	1.2	4
sun	3	1	2	0.6	5
anthropomorph	0	0	31	9.3	31
spade	0	0	28	8.4	28
complex scroll	6	2	109	32.8	115
P-motif	0	0	70	21.1	70
zoormorph	3	1	23	6.9	26

Summary of Motifs on Salado and Chihuahuan Wares

The comparison of motifs between wares shows that there are a large number of similarities between Salado and Chihuahuan Polychrome pottery. Triangles, diamonds, spirals, and feathers are the most common motifs on Salado vessels whereas triangles, complex scrolls, P-motifs, and circles occur the most on Chihuahuan Polychromes (Table 6.17). I also noted several differences, and as Table 6.17 shows, phalluses, anthropomorphs, spades, and P-motifs are only found on Chihuahuan wares, whereas

butterflies are the only motifs exclusive to Salado Polychromes. Complex scrolls also occur more often on Chihuahuan Polychrome vessels while feathers, plumed/horned serpent motifs, and flowers/stars are more common on Salado pottery.

Design Analysis

In order to expand my analysis comparing the Chihuahuan and Salado wares, I recorded other attributes associated with the structure of design. In this section, I present the data on the design fields and design layouts on the two wares, and as with the descriptions of motifs, frequencies of each attribute are of all Salado and Chihuahuan wares, including trade wares.

Design Fields

Design fields are the locations on vessels where decoration has been placed. For vessels in this study, the interior and exterior make up the primary and secondary design fields respectively. For both Salado and Chihuahuan pottery, jars, effigies, and the two "other" vessels are only decorated on one design field, and in a majority of these cases, the decoration appears exclusively on the exterior of the vessel (Tables 6.18 and 6.19).

The location of the design field on bowls is distinctly different between the Salado and Chihuahuan wares. The majority of bowls of both types are only decorated on one surface (Table 6.18). Most of the Chihuahuan bowls (84.1 percent) are only decorated on the exterior, whereas Salado bowls are most commonly decorated only on the interior (72.3 percent). This shows that for bowls there are distinct structural rules of design that correlate with each region.

Design Layouts

I also recorded design layouts as they appeared on the four vessel shapes (bowls,

Table 6.18. Number of design fields on vessels.

	Salado		Chihuahuan		Total	
Design Fields	Count	%	Count	%	Count	%
Bowls						
1	157	82.2	54	85.7	211	83.1
2	34	17.8	9	14.3	43	16.9
Total	191		63		254	
Jars						
1	110	99.1	213	99.5	323	99.4
2	1	0.9	1	0.5	2	0.6
Total	111		214		325	
Effigies						
1	4	100	53	98.1	57	100
2	0	0	1	1.9	1	1.8
Total	4		54		58	
Other						
1	1	100	1	100	2	100

Table 6.19. Design field locations on vessels.

	Salado		Chihuahuan		Total	
Design Location	Count	%	Count	%	Count	%
Bowls						
primary interior, secondary exterior	21	11	6	9.5	27	10.6
primary exterior, secondary interior	9	4.7	1	1.6	10	3.9
full interior and exterior	3	1.6	2	3.2	5	2
exterior only	20	10.5	53	84.1	73	28.7
interior only	138	72.3	1	1.6	139	54.7
Total	191		63		254	
Jars						
exterior only	110	99.1	213	99.5	323	99.4
interior only	0	0	1	0.5	1	0.3
primary exterior, secondary interior	1	0.9	0	0.0	1	0.3
Total	111		214		325	
Effigy						
exterior only	4	100	54	100	58	100
Other						
exterior only	1	100	1	100	2	100

jars, effigies, other). Design layouts comprise the overall structure and arrangement of decoration on the surface of vessels, and I recorded 27 design layouts in this analysis (Figure 5.3, Table 6.20). For bowls, designs that occur on the interior appear as either finite or banded layouts (Table 6.20). Finite layouts typically fill the bowl interior up to the rim, whereas banded layouts encircle the bowl and cover approximately three-quarters of the interior surface except for an undecorated circle that appears at the bottom of the bowl. As mentioned above, Salado bowls are most often decorated exclusively on the interior surface, and the most common layouts are offset bisected (18.8 percent) and negative offset quartered (13.6 percent). For Chihuahuan bowls, the exterior surface is the preferred location for decoration, and multi-lined continuous layouts account for 66.7 percent of the decorations on bowl exteriors, many of which consist of some variation of the interlocked triangle band.

Jars are decorated with exterior layouts that appear as bands circling the vessels (Table 6.21). The three most common layouts for Chihuahuan jars are multi-lined continuous bands (36.9 percent), horizontally sectioned bands (24.3 percent), and vertically sectioned bands (22 percent). Band layouts that cover the exterior surfaces of Salado jars are quite variable but include some layouts that are exclusive to that ware, including top bands and y-frame bands. There is one jar from each area that exhibited interior decoration. A Salado Gila Polychrome jar is decorated with an interior band that circles the lip of the rim, and a Chihuahuan Escondida Polychrome jar has a trisected finite layout exclusively painted on the interior of the vessel.

Like the majority of designs on jars, effigies and the two “other” vessels are decorated on the exterior (Table 6.22). As stated above, the majority of effigy vessels

Table 6.20. Bowl layout frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=191)		Chihuahuan (n=63)		Total (n=254)	
Layouts	Count	%	Count	%	Count	%
Bowl Interior Layout						
no interior decoration	20	10.5	53	84.1	73	28.7
horizontally sectioned band	3	1.6	0	0	3	1.2
vertically sectioned band	4	2.1	0	0	4	2
diagonally sectioned band	5	2.6	0	0	5	2
zigzag band	6	3.1	1	1.6	7	2.8
double zigzag sectioned band	5	2.6	0	0	5	2
top band only	2	1	0	0	2	0.8
unbanded continuous	2	1	0	0	2	0.8
isolated linear (no banding lines)	1	0.5	1	1.6	2	0.8
multi-lined continuous	3	1.6	0	0	3	1.2
bisected	15	7.9	3	4.8	18	7.1
offset bisected	36	18.8	0	0	36	14.2
trisected	5	2.6	0	0	5	2
negative offset trisected	2	1	0	0	2	0.8
spaced trisected	8	4.2	0	0	8	3.1
quartered	3	1.6	5	7.9	8	3.1
offset quartered	17	8.9	0	0	17	6.7
negative offset quartered	26	13.6	0	0	26	10.2
double quartered	2	1	0	0	2	0.8
checkerboard	5	2.6	0	0	5	2
central spiral	7	3.7	0	0	7	2.8
asymmectric	4	2.1	0	0	4	1.6
banded with central design	5	2.6	0	0	5	2
zigzag finite	5	2.6	0	0	5	2
Bowl Exterior Layout						
no exterior decoration	137	71.7	1	1.6	138	54.3
unsectioned band/banded continuous	3	1.6	2	3.2	5	2
horizontally sectioned band	2	1	3	4.8	5	2
vertically sectioned band	4	2.1	6	9.5	10	3.9
diagonally sectioned band	2	1	0	0	2	0.8
zigzag band	5	2.6	4	6.3	9	3.5
double zigzag sectioned band	2	1	1	1.6	3	1.2
top band only	14	7.3	0	0	14	5.5
unbanded continuous	2	1	0	0	2	0.8
isolated linear (no banding lines)	6	3.1	2	3.2	8	3.1
multi-lined continuous	13	6.8	42	66.7	55	21.7
offset bisected	1	0.5	0	0	1	0.4
quartered	0	0	2	3.2	2	0.8

Note: Shaded rows indicate finite designs; unshaded indicates banded design.

Table 6.21. Jar layout frequencies and percentages on Salado and Chihuahuan wares.

	Salado (n=191)		Chihuahuan (n=63)		Total (n=254)	
Layouts	Count	%	Count	%	Count	%
Jar Exterior Layout						
unsectioned band/banded continuous	6	5.4	3	1.4	9	2.8
horizontally sectioned band	9	8.1	52	24.3	61	18.8
vertically sectioned band	3	2.7	47	22.0	50	15.4
diagonally sectioned band	4	3.6	1	0.5	5	1.5
zigzag band	11	9.9	23	10.7	34	10.5
double zigzag sectioned band	3	2.7	1	0.5	4	1.2
y-frame band	4	3.6	0	0.0	4	1.2
top band only	14	12.6	0	0.0	14	4.3
top band with continuous	8	7.2	0	0.0	8	2.5
unbanded continuous	18	16.2	3	1.4	21	6.5
isolated linear (no banding lines)	17	15.3	4	1.9	21	6.5
multi-lined continuous	14	12.6	79	36.9	93	28.6
Jar Interior Layout						
no interior decoration	110	99.1	213	99.5	323	99.4
vertically sectioned band	1	0.9	0	0	1	0.3
trisected	0	0	1	0.5	1	0.3

Note: Shaded rows indicate finite designs; unshaded indicates banded design.

Table 6.22. Effigy and other vessel layout frequencies and percentages.

	Salado		Chihuahuan		Total	
Layouts	Count	%	Count	%	Count	%
Effigy Exterior Layout						
indeterminate	0	0	5	9.3	5	8.6
unsectioned band/banded continuous	0	0	1	1.9	1	1.7
horizontally sectioned band	0	0	7	13	7	12.1
vertically sectioned band	2	50	16	29.6	18	31
diagonally sectioned band	0	0	1	1.9	1	1.7
zigzag band	2	50	1	1.9	3	5.2
multi-lined continuous	0	0	21	38.9	21	36.2
spaced trisected	0	0	1	1.9	1	1.7
quartered	0	0	1	1.9	1	1.7
Total	4		54		58	
Other - Exterior Decoration						
isolated linear (no banding lines)	1	100	0	0	1	50
multi-lined continuous	0	0	1	100	1	50
Total	1		1		2	

Note: Shaded rows indicate finite designs; unshaded indicates banded design.

are Chihuahuan Polychromes, and the layouts that occur most commonly on these are multi-lined continuous bands (38.9 percent) and vertically sectioned bands (29.6 percent). The four Salado effigies in this sample equally exhibit the vertically sectioned (n=2) and zigzag bands (n=2). The two "other" vessels are also decorated with banded layouts; an isolated linear layout was applied to the Tonto Polychrome mug, and the multi-lined continuous layout is found on the L-shaped Villa Ahumada Polychrome vessel.

The results of the design analysis suggest that while those producing pottery in the Casas Grandes and Salado regions did share some similarities in design technique, there are some regional differences that are distinct. Bowls are more common in the Salado sample and they are usually decorated on the interior. Chihuahuan Polychrome bowls are typically decorated on the exterior of the bowl, but the jar form is more common. These differences are likely regional patterns associated with cultural norms respective to each area.

Iconological Interpretation: More Hierarchical Versus Less Hierarchical Sites

The principle question in this study is how communities with differential levels of sociopolitical complexity incorporated foreign symbols into their iconographical systems. In order to answer this question, I compared iconography from more and less hierarchical sites within each region to determine the distribution of the 26 motifs recorded in the analysis.

For this comparison of motifs between the Salado and Casas Grandes regions, I examined frequencies for each motif type. In order to examine differences between more and less hierarchical sites found in each region, I recorded the presence/absence of each motif category. In some situations, more than one variation of a motif appears on a single

vessel. For example, a hooked triangle and barbed triangle may appear on the same bowl, but this was recorded as only one occurrence of the triangle motif, or the presence of that motif.

There are almost twice as vessels from sites categorized as more hierarchical in the Casas Grandes region, and due to these differences in sample size, I calculated and compared the frequency percentage of each motif category. I also calculated the Brainerd-Robinson coefficient (*BR*) for each motif category, which measures the similarity of percentages between samples. A *BR* coefficient is 200 suggests that the samples are exactly alike; in contrast, a *BR* of zero indicates absolute difference (Cowgill 1990:513). The lowest *BR* coefficients show which motifs differed the most between more and less hierarchical sites.

Tables 6.23 and 6.24 show 24 motif frequencies for more and less hierarchical Salado and Casas Grandes sites. Two motif categories, plumed/horned serpent bodies and complex scroll ends, were not included in this summary because their counts were the same as plumed/horned serpents and complex scrolls, respectively, and their inclusion would result in duplicated data. The frequencies indicate that the majority of the motifs are equally distributed among both more and less hierarchical sites within each area. The Brainerd-Robinson coefficients support this observation for both the Salado and Chihuahuan traditions, with no *BR* coefficient being less than 165. Generally speaking, this indicates that there was very little difference in the distribution of symbols on pottery at more and less hierarchical sites (Figure 6.26).

Taking a closer look at the motifs that are asymmetrically distributed between more and less hierarchical sites, in the Salado sample triangles, diamonds, ladders,

Table 6.23. Motif frequencies for more and less hierarchical Salado sites.

Motifs	More Hierarchical (n=164)*		Less Hierarchical (n=152)*		Total (n=316)	*BR*†	*p*
	Counts	%	Counts	%			
triangle	142	86.6	147	96.7	289	179.7	0.001164
circle	31	18.9	22	14.5	53	191.1	0.366086
diamond	46	28	58	38.2	104	179.8	0.072074
ladder	6	3.7	32	21.1	38	165.2	0.000001
checkerboard	21	12.8	31	20.4	52	184.8	0.094232
terrace	29	17.7	33	21.7	62	191.9	0.397014
cross	5	3	12	7.9	17	190.3	0.079151
spiral	35	21.3	27	17.8	62	192.8	0.479277
interlocking triangle band	24	14.6	31	20.4	55	188.5	0.185016
twins/pairs	3	1.8	1	0.7	4	197.7	0.623702
feather	43	26.2	38	25	81	197.6	0.897475
p/h serpent	28	17.1	12	7.9	40	181.6	0.017319
serpent	0	0	1	0.7	1	198.7	0.481013
macaw	5	3	8	5.3	13	195.6	0.400446
butterfly	5	3	7	4.6	12	196.9	0.562062
flower/star	11	6.7	16	10.5	27	192.4	0.235036
face/mask	2	1.2	0	0	2	197.6	0.499136
phallus	0	0	0	0	0	200.0	1.000000
sun	1	0.6	2	1.3	3	198.6	0.609996
anthropomorph	0	0	0	0	0	200.0	1.000000
spade	0	0	1	0.7	1	198.7	0.481013
complex scroll	1	0.6	8	5.3	9	190.7	0.016117
P-motif	0	0	2	1.3	2	197.4	0.230581
zoormorph	1	0.6	2	1.3	3	198.6	0.609996

* Total number of vessels.

†Brainerd-Robinson coefficient; 200=highest similarity and 0=absolute difference (Cowgill 1990:513).

Table 6.24. Motif frequencies for more and less hierarchical Chihuahuan sites.

Motifs	More Hierarchical (n=212)*		Less Hierarchical (n=111)*		Total (n=323)	*BR*†	*p*
	Counts	%	Counts	%			
triangle	202	95.3	104	93.7	306	196.8	0.602644
circle	58	27.4	11	9.9	69	165.1	0.000190
diamond	13	6.1	3	2.7	16	193.1	0.279511
ladder	28	13.2	8	7.2	36	188.0	0.135875
checkerboard	32	15.1	6	5.4	38	180.6	0.010453
terrace	2	0.9	1	0.9	3	199.9	1.000000
cross	1	0.5	1	0.9	2	199.1	1.000000
spiral	10	4.7	3	2.7	13	196.0	0.553844
interlocking triangle band	37	17.5	22	19.8	59	195.3	0.649924
twins/pairs	24	11.3	5	4.5	29	186.4	0.042526
feather	29	13.7	3	2.7	32	178.0	0.001344
p/h serpent	0	0	3	2.7	3	194.6	0.039864
serpent	6	2.8	1	0.9	7	196.1	0.429019
macaw	5	2.4	2	1.8	7	198.9	1.000000
butterfly	0	0	0	0	0	200.0	1.000000
flower/star	3	1.4	1	0.9	4	199.0	1.000000
face/mask	5	2.4	2	1.8	7	198.9	1.000000
phallus	3	1.4	1	0.9	4	199.0	1.000000
sun	2	0.9	0	0	2	198.1	0.547488
anthropomorph	24	11.3	7	6.3	31	190.0	0.167746
spade	22	10.4	5	4.5	27	188.3	0.089820
complex scroll	64	30.2	42	37.8	106	184.7	0.171945
P-motif	49	23.1	19	17.1	68	188.0	0.250751
zoormorph	19	9	4	3.6	23	189.3	0.108921

* Total number of vessels.

†Brainerd-Robinson coefficient; 200=highest similarity and 0=absolute difference (Cowgill 1990:513).

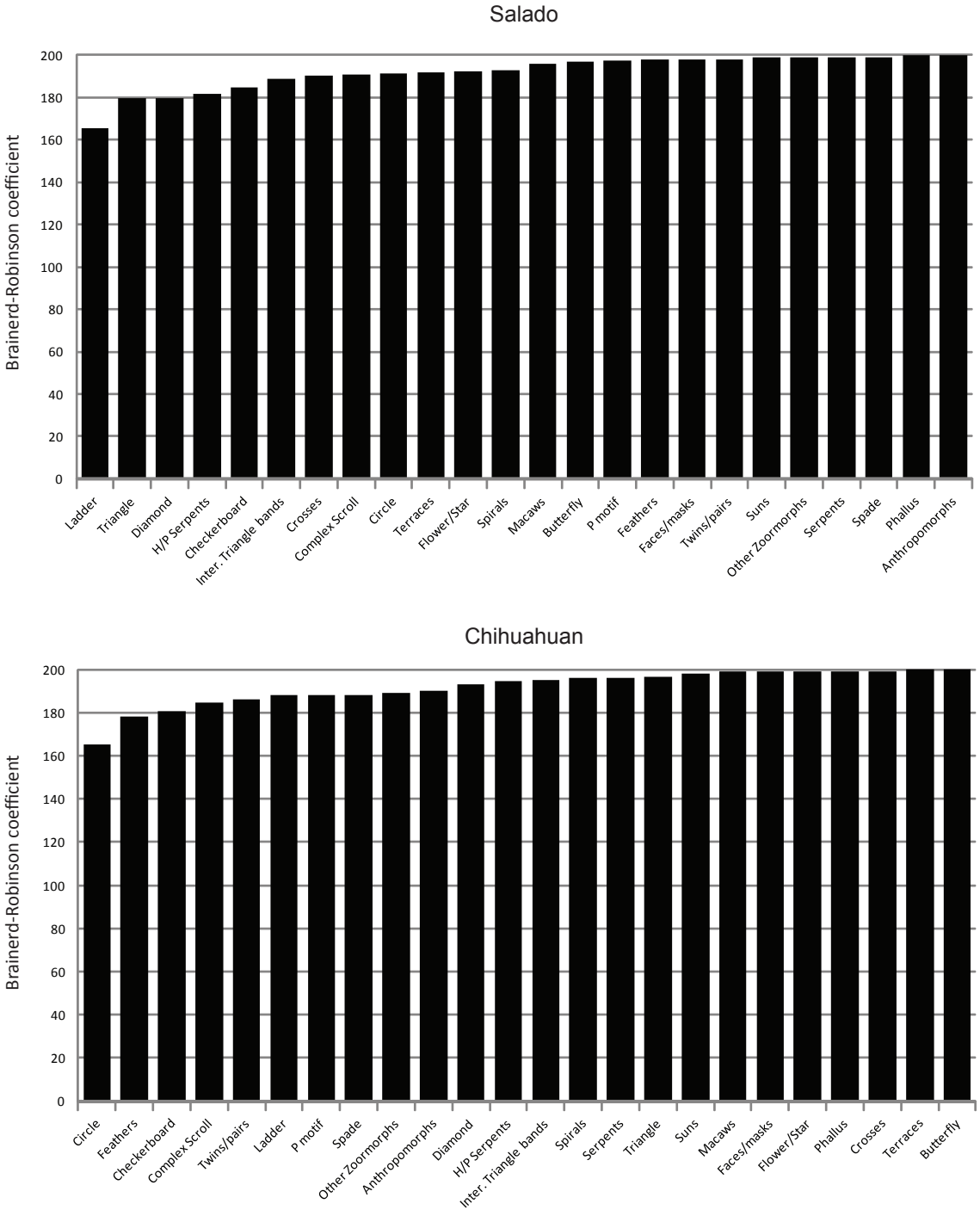


Figure 6.26. Comparison of similarity between more and less hierarchical sites using the Brainerd-Robinson coefficients for each of the motifs. Those with the most difference appear on the left-hand side of the chart.

checkerboards, interlocking triangle bands, and plumed/horned serpents have the lowest *BR* coefficients (< *BR* 190) (Figure 6.26). Triangles, diamonds, ladders, checkerboards, and interlocking triangle bands occur more frequently at less hierarchical sites. The biggest differences were for triangle, diamond, and ladder motifs with a difference in frequency of occurrence between 20 and 30 percent. Plumed/horned serpents, on the other hand, were more common at more hierarchical Salado sites, but only by nine percent.

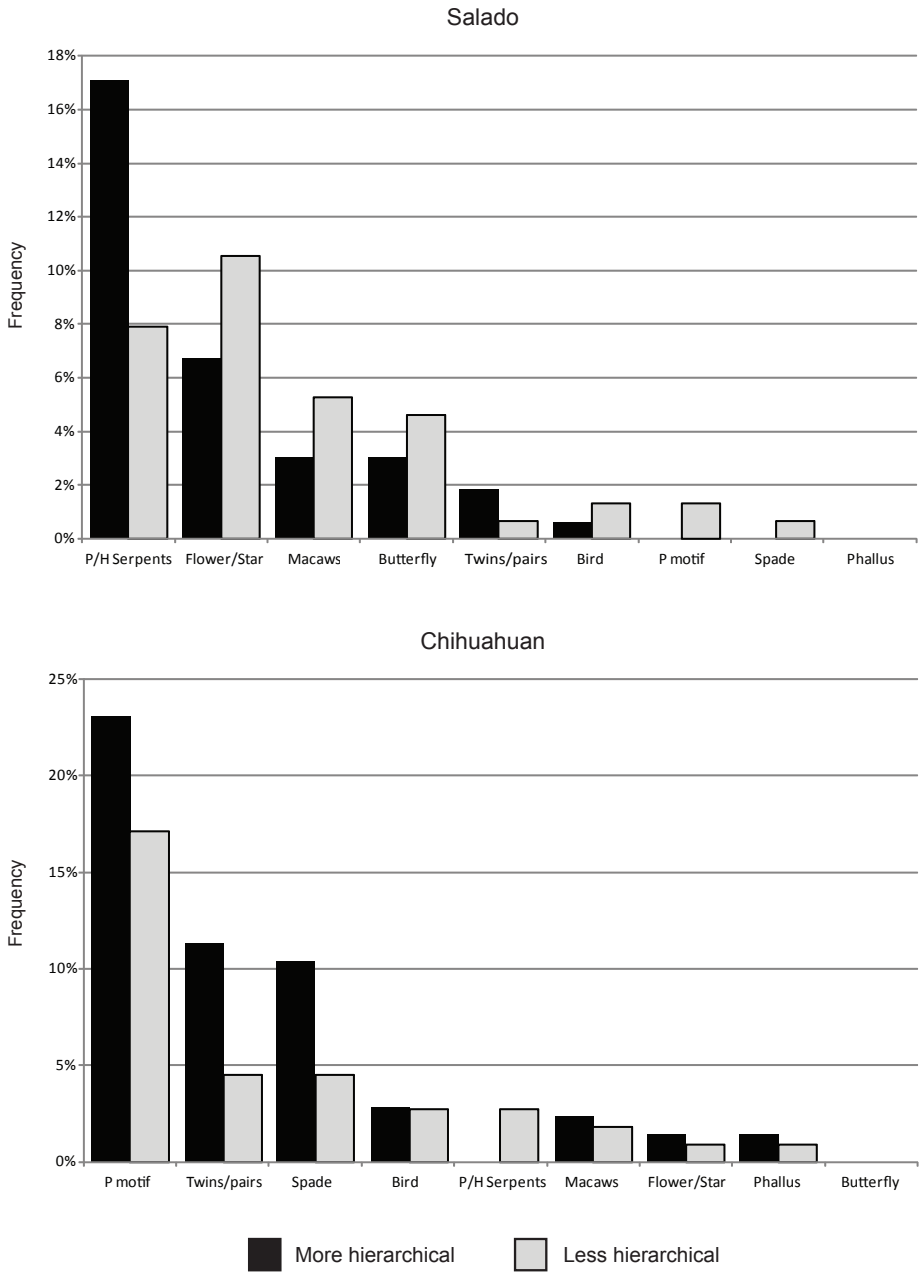
Although the Brainerd-Robinson coefficient can produce information regarding general differences between samples, significance testing provides data associated with the strength of these differences. I used Fisher's Exact Test to calculate a p-value by comparing the presence and absence of each motif category. P-values equal to or less than 0.05 are considered to be significantly different. As shown on Table 6.23, triangles, ladders, plumed/horned serpents, and complex scrolls were the only motif frequencies that were significantly different between more and less hierarchical Salado sites.

Motif frequencies at Chihuahuan sites produced different results. Circles, feathers, checkerboards, complex scrolls, twins/pairs, ladders, P-motifs, spades, and zoomorphs other than macaws and serpents had *BR* coefficients of less than 190 (Figure 6.26). Of these, the only motifs depicted more often on vessels at less hierarchical sites in the Casas Grandes region were the complex scroll and plumed/horned serpent. All other motifs occurred more often at Paquimé and at other more hierarchical sites, although only slightly more often than at less hierarchical sites. Significance testing of frequencies in the Casas Grandes region shows that circles, checkerboards, twins/pairs, feathers, and plumed/horned serpents were the only motifs that occurred at significantly

different rates ($p < .05$).

In sum, the differences in motif frequencies between more and less hierarchical sites in both the Salado and Chihuahuan regions are minor as defined by significance testing, but a general comparison of the frequencies of the two traditions shows some interesting trends. First, the frequencies of motifs at Salado sites show that there are 14 motifs that are more common at less hierarchical sites, and 10 occur at a higher rate at more hierarchical sites. In contrast, only four of the 24 motifs at Chihuahuan sites were present more often at less hierarchical sites while 20 had higher frequencies at more hierarchical sites.

Turning to Mesoamerican symbolism, I wanted to determine how people of these two traditions incorporated aspects of Mesoamerica into their cultures and how this association with foreign entities (i.e., the "outside") might correlate with their sociopolitical organization. By focusing solely on the motifs considered Mesoamerican, the similarities between more and less hierarchical sites are still quite evident. For Chihuahuan sites, there is a trend toward higher frequencies of Mesoamerican symbols at more hierarchical sites (Figure 6.27). These motifs have an occurrence rate of 53 percent at more hierarchical sites and 35 percent for less hierarchical communities. The only Mesoamerican motif that occurs more often at less hierarchical sites is the plumed/horned serpent, but this is only represented by three occurrences. One of these is the plumed serpent icon, and the other two are Salado-like in that they are variations of the triangle with an appendage and an eye. In addition, if spade and P-motifs are considered abstract forms of either the macaw, plumed/horned serpent, or both, then not only is the frequency of macaws and plumed/horned serpents much higher in the Casas Grandes region, but



6.27. Comparison of frequency of Mesoamerican motifs between more and less hierarchical sites among the Salado and Chihuahuan traditions.

they also occur more often at more hierarchical sites.

On average, Salado vessels rarely depict what others have considered Mesoamerican symbols. The combined frequency of occurrence of Mesoamerican symbols at more hierarchical sites is 32 percent, and less hierarchical is 32 percent as well. The percentages show that these motifs are equally frequent at all of the Salado sites (Figure 6.27). The largest difference in motif frequency for Mesoamerican symbols among Salado sites is that associated with plumed/horned serpents, which occur more frequently at more hierarchical sites. This is also the only Mesoamerican motif that was found to be significantly different ($p= 0.017$) in the comparison between more and less hierarchical sites. Twins/pairs occur at a slightly higher frequency at more hierarchical sites, but this is based on only four occurrences, and their frequencies are not significantly different ($p= 0.6$).

Finally, spade and P-motifs are only found at less hierarchical Salado sites, but this is due to the fact that they were found on Chihuahuan vessels at Slaughter Ranch, which is the southernmost Salado site that lies on the northern Casas Grandes periphery. Slaughter Ranch was likely engaged in trade with communities in northern Chihuahua due to evidence of trade items, including several Chihuahuan Polychrome vessels. Mills and Mills (1971:23-24) noted that approximately half of the painted pottery found at Slaughter Ranch was Salado, while the other half was Chihuahuan.

Discussion and Summary

Even though the differences in motif frequency between more and less hierarchical sites were slight, some of the differences may shed light on variation in social and political hierarchy. The remainder of this chapter highlights some of the contrasts in

each tradition and includes a summary of the results of the iconographical analysis. I also offer some possible reasons for these trends that will add to the interpretations that follow in subsequent chapters.

In general, the motifs recorded in this study occur at similar frequencies for more and less hierarchical sites for both the Casas Grandes and Salado regions. There are minor differences between the areas, with Mesoamerican motifs being slightly more common in more hierarchical sites in Chihuahua. These higher frequencies may correlate with the hypothesis that elites in the core of the Casas Grandes sphere used these symbols as tokens to legitimate their authority by expressing their ties to foreign communities, but in no way were any of these symbols exclusively used by those in the core. Instead, the relative frequencies between periphery and core areas are only slightly dissimilar, and so it is likely that all communities surrounding Paquimé participated in and shared a common ideology that involved these symbols, but it may have been at varying levels.

I noted earlier that other Mesoamerican interaction markers such as trade goods and architecture also indicate ways that people of Casas Grandes incorporated Mesoamerican culture into their own traditions. Whalen and Minnis (2000, 2001, 2009) have seen these to be more prominent in the core, and I suggest that in addition to imagery depicted on pottery, these interaction markers may point to how Paquimé elites and those with privileged status differentially expressed their ties to Mesoamerica.

The distribution of motifs among Salado sites is different than that found in the Casas Grandes region. There is a similar distribution of local and Mesoamerican motifs among both more and less hierarchical sites. These similarities may correlate with the hypothesis that Salado sites were less hierarchical in general, and therefore these

symbols acted as ideological girders. If this were the case, it supports Crown's (1994) interpretation that the production of Salado Polychrome pottery was a wide-spread phenomenon associated with a new religious cult meant to unite people of different ethnic backgrounds.

It is also important to note that the patterns among Salado sites may also be related to regional styles. The three more hierarchical sites (i.e., those with platform mounds) in this study are all located in the Tonto Basin, whereas those labeled less hierarchical are in southeastern Arizona and southwestern New Mexico. Platform mounds have been recorded in the San Pedro Valley and Tucson Basin of southeastern Arizona, but to my knowledge there are no whole vessels from these sites that were available for inclusion in this analysis and these may not be associated with the Salado tradition. While these trends may be indicative of the similarities between more and less hierarchical communities, they may also reflect regional patterns.

One example of a possible regional pattern is the prominence of thick inner circles on banded designs that appear on the interiors of some Gila Polychrome bowls. This thick inner circle is found most often on vessels from Tonto Basin sites with the motif occurring 19 times at Tonto Basin sites, but only twice at sites in southeastern Arizona (Figure 6.28).

Another phenomenon is the abundance of trade wares at certain sites. All 11 of the Chihuahuan trade wares at Salado sites in this sample are at Kuykendall and Slaughter Ranch, two sites in southeastern Arizona. There were also several Chihuahuan Polychrome vessels found at the Salado site of Dutch Ruin located on the Upper Gila River in southwestern New Mexico (Lekson 2002:27). Joyce Well lies in the

6.28. Gila Polychrome bowl with thick inner circle at base of banded design (GP11282 ASM).

southwestern boot heel of New Mexico, and it is one of the farthest outlying sites of the Casas Grandes region. Although not included in this analysis due to their fragmented condition, there are several Salado Polychrome vessels from this site in addition to the large amounts of Chihuahuan pottery. Evidence of trade wares introduces questions related to the sharing of symbols and ideology in marginal communities. Did people living in the Salado and Casas Grandes regions share a common system of beliefs? Did these commonalities serve to bring them together at sites like Slaughter Ranch, Kuykendall, and Joyce Well?

In summary, the results of the iconographical analysis showed that while there were not overwhelming significant differences in the distribution of iconography among more and less hierarchical sites, some patterns still indicate differences between the Salado and Casas Grandes regions. Importantly, I found that Mesoamerican symbols occurred at a higher rate at more hierarchical Casas Grandes sites, although they also occurred frequently at less hierarchical sites, whereas these symbols were similarly distributed among Salado sites of varying social hierarchy.

Chapter 7: Origins of Iconography and Other Markers of Interaction

The principle questions I aimed to answer in this study are how communities incorporate foreign symbols into their societies, and how these patterns of incorporation inform our understanding of their sociopolitical organization? In order to answer these questions, I first used pre-iconographical analysis to identify and describe the symbols found on pottery from the Salado and Casas Grandes regions. I then shifted to iconological interpretation by examining the context of foreign symbols in relation to communities of differing social complexity. The results of this analysis showed that Mesoamerican symbols were distributed relatively equally among more and less hierarchical sites in both the Salado and Casas Grandes regions. This is significant because these areas were socially and politically organized in distinctly different ways in that Salado communities generally involved dispersed regional centers, whereas Paquimé in the Casas Grandes region was the primary center for surrounding sites.

A closer examination of the differences in the data for Casas Grandes communities shows that Mesoamerican symbols were slightly more common at the more hierarchical Casas Grandes sites. Although this difference may be small, this chapter continues iconological interpretation of these symbols through an examination of the origins of this iconography and the distribution of other cultural attributes such as trade goods and architecture. These additional lines of evidence indicate that the intensity of interaction was stronger between Mesoamerica and Casas Grandes than between Salado communities and Mesoamerica.

I begin this chapter with a discussion of the possible local origins of "foreign"

Mesoamerican iconography. While some symbolism may have been introduced or reintroduced into the SW/NW after A.D. 1200, the symbols alternatively may have derived from earlier local groups who previously participated in long-distance interaction with Mesoamerican communities. If this were the case, these symbols may not be associated with the "outside" world. To address this issue, I briefly explore earlier iconographical traditions used by people from the Tusayan-Kayenta region located in present-day northeastern Arizona and southwestern Utah, the Hohokam in central and southeastern Arizona, and the Mimbres region in southwestern New Mexico. I argue that parts of these earlier systems were integrated into the later Casas Grandes and Salado iconographical traditions.

There are also other aspects of "outside" material culture that have been found at Casas Grandes and Salado communities. Nelson (2006) has described these as "Mesoamerican interaction markers," and they include foreign objects and ideas such as trade goods, architectural features, and ceramic styles. I explore the distributions of macaws, marine shell, copper bells, and ball courts among Salado and Casas Grandes sites, which provide further evidence to suggest that elites at more hierarchical sites in the Casas Grandes core zone did have increased access to and/or control of resources from the "outside" than less hierarchical sites. In addition, I argue that Salado communities may have had less direct interaction with Mesoamerica, and that the general distribution of symbols and foreign goods among both more and less hierarchical sites indicates a lower level of social hierarchy.

Origins of Mesoamerican Items and Ideas

When foreign iconography or trade goods are found in the SW/NW, this does not

necessarily connote direct interaction. It may be the result of down-the-line trade or of interaction with local communities who once had direct contact with Mesoamerica in one form or another. Artifacts may be heirlooms that were passed down through many generations, as has been noted with items such as manos and metates (Searcy 2011). As with artifacts, ritual practices and ideology may have survived through time or were passed on from another community who originally had contact with Mesoamerica.

The following section is a brief review of iconography from SW/NW traditions preceding the late prehistoric period (A.D. 1200-1450). Here I argue that Salado interaction with Mesoamerica was indirect and that the foreign symbols in that region after A.D. 1200 likely derived from earlier ancestral groups in the SW/NW. While many aspects of Casas Grandes iconography also may have derived from local sources in the SW/NW, the discussion in the second section looks at other Mesoamerican interaction markers that suggest a stronger and more direct relationship between people in the Casas Grandes region and Mesoamerica than between people in the Salado region and Mesoamerica. This direct connection with peoples in Mesoamerica likely reassociated these symbols in the Casas Grandes region with the "outside," imbuing them with renewed power and meaning.

Origins of Salado and Casas Grandes Iconography

As discussed in Chapter 3, the Salado tradition partially developed from the aggregation of several migrant and local groups during the thirteenth century. Several archaeologists (c.f. Clark 2001; Haruy 1958; Neuzil 2008) have recognized that architectural attributes along with other material items provide evidence of migration and reorganization. Crown (1994:84-85, 221-222) noted that many Salado designs and icons

were previously used on Tusayan-Kayenta and Mimbres pottery. She suggested that "the imagery associated with the Mimbres ancestor cult was utilized at different times and places in the Southwest for many centuries and coalesced in the Southwestern Regional Cult in the late 1200s" (Crown 1994:222).

Some of the Salado motifs and designs that first appeared on Mimbres pottery include the plumed/horned serpents, macaws, stepped triangles, terraces, scrolls, and flowers/stars (see Brody [2004] for examples). Tusayan-Kayenta designs that were later applied to Salado ceramics were triangles with appendages, interlocked triangle bands, curvilinear feathers, interlocked stepped triangles, and macaws (Smith 1971). I also identified the rectangular panel with interlocking, scrolled triangles on Tusayan Black-on-white as well as Classic Mimbres Black-on-white (Fewkes 1925:45, Figure 123; Smith 1971:236, Figure 138j). Crown (1994:166) mentioned that there has only been one plumed/horned serpent noted on Hohokam red-on-buff pottery, and that it was painted differently than those seen on Salado Polychromes. The scroll and triangle with an appendage (hooked/scrolled) is also a common motif on Hohokam red-on-buff vessels (Haury 1976; Wallace 2001). Each of these pottery traditions precede the emergence of Salado pottery, which suggests that much of the Salado iconography derived from other regions and cultural traditions.

As mentioned earlier, people in the Casas Grandes region likely participated in more direct interaction with Mesoamerica. As will be discussed in the next section, large amounts of foreign commodities such as marine shell, copper artifacts, and macaws attest to this direct and continuous contact. Although long-distance interaction resulted in the adoption of some aspects of foreign design styles and symbols, Casas Grandes pottery

also attests to some earlier local influence.

Some of the design similarities between Chihuahuan Polychrome and Mimbres Classic Black-on-white pottery include plumed/horned serpents, interlocked stepped triangles, and macaws. As with Salado ceramics, Tusayan-Kayenta pottery designs are also present on Chihuahuan Polychromes, including triangles with hooks and interlocking triangle bands. There are also similarities in design layout seen in the use of zigzag and multi-lined continuous bands, the latter occurring most often on both Chihuahuan bowl and jar forms. As mentioned above, the hooked triangle motif also appears on Tusayan-Kayenta, Mimbres, and Hohokam pottery before the production of Chihuahuan Polychromes. VanPool and VanPool (2007:42) also noted two instances of the interlocking triangle bands on Viejo period (A.D. 700-1200) pottery, which precedes the Medio period Casas Grandes polychrome pottery analyzed in this study. Finally, Medio period Ramos Polychrome human effigies found in the Casas Grandes region are also reminiscent of Hohokam human effigy vessels (Haury 1976:181, Figure 11.10).

Although this is only a preliminary review of earlier designs, these similarities may suggest that the appearance of Chihuahuan Polychrome pottery in the Casas Grandes region was partially the result of other processes at work to the north. If migration and aggregation were occurring north of Chihuahua, some groups of migrants may have continued south, as Lekson (1999) has suggested. A closer examination of the continuity of designs through time on pottery in the SW/NW would add significantly to this notion. For example, more work on the Viejo period pottery tradition will inevitably provide a clearer picture of the relationship between Medio period Casas Grandes communities and their neighbors to the north in terms of trade or migration.

The appearance of Mesoamerican iconography in the SW/NW before the emergence of the Salado and Casas Grandes societies presents a problem: if these symbols preexisted in local contexts, were they considered by people in the Casas Grandes and Salado regions to be from the "outside" and/or linked to a source of external power? To apply the label of "Mesoamerican" to specific icons that are more reminiscent of previous local traditions, such as macaws or the plumed/horned serpent, may be a misinterpretation of ideological heritage, but I argue that an examination of the level of interaction between these two regions in the SW/NW and Mesoamerica helps to clarify whether these symbols were associated with foreign contexts. The next section reviews evidence that suggests people in the Casas Grandes region interacted more directly with Mesoamerica than communities in the Salado region. If this were the case, Mesoamerican symbols that were locally derived from previous SW/NW traditions became reassociated with their original "donor culture," renewing their link to the power associated with those on the outside. In contrast, it appears that there may have been little direct contact between people in the Salado region and those of Mesoamerica, and if this were the case, the "Mesoamerican" images on Salado pottery were more likely linked to the local traditions from which they derived. I would further suggest that the Southwestern Regional Cult, as manifest symbolically on Salado Polychrome pottery, represents some type of resurgence or revival of local ideologies. It may be that it was a syncretic religion in that it integrated the ideologies of people living in the Mimbres, Hohokam, and Tusayan-Kayenta regions.

Mesoamerican Interaction Markers in the SW/NW

As stated above, several other Mesoamerican interaction markers have been

identified in the SW/NW, and I look at four that are considered key identifiers of long-distance interaction with the "outside" Mesoamerican world: ballcourts, macaws, copper bells, and shell. In this section, I compare their patterns of distribution within the Salado and Casas Grandes regions with those that resulted from the iconographical analysis. I first review patterns associated with two major symbolic themes that resulted from the iconographical analysis of the Salado and Casas Grandes ceramics. In particular, I look more in-depth at the prevalence of the plumed/horned serpent as well as the macaw and their distributions among sites of varying social hierarchy. I then present other evidence of the adoption of Mesoamerican culture by these communities, including architecture and exotic goods to suggest that more direct interaction between Casas Grandes and Mesoamerican communities solidify the notion that symbols such as macaws and plumed/horned serpents were considered to be linked to a foreign source. This information also indicates that less direct interaction occurred between Salado and Mesoamerican communities, and in this case, Mesoamerican symbols were likely associated more with previous local traditions who had adopted these symbols at an earlier period of time.

Symbolism: Plumed/Horned Serpents and Macaws. Crown (1994) and VanPool (2003b) have noted that the plumed/horned serpent is a prominent symbol on both Salado and Casas Grandes pottery, and they have offered various interpretations of the meaning of this imagery. VanPool and VanPool (2007:121) consider the plumed/horned serpent to represent a mythological being whose "union of snake, fish, and bird into a single entity creates a powerful water creature that could span the watery underworld and the upper world (sky) and that serves as the focus of shamanic activity." Crown (1994:166)

noted that the meaning of this icon on Salado pottery may be related to Puebloan and Mesoamerican peoples who associated the plumed/horned serpent with rain, water, clouds, springs, and fertility.

Although only two plumed/horned serpent motifs and one icon were noted in the Chihuahuan sample, I also considered other abstract forms to represent the plumed/horned serpent. Di Peso et al. (1974:6:99) noted that spade motifs were one of the most common motifs on Ramos Polychrome pottery at Paquimé, although they identified them (along with the P-motif) as macaws. As described in Chapter 4, I agree with previous interpretations (Crown 1994:165-166; Schaafsma 1998:40; VanPool and VanPool 2007:114-115) that spade and P-motifs are likely a combination of the plumed/horned serpent and macaw. The P-motif occurred more often than any other possible Mesoamerican motif on Chihuahuan Polychromes, and if they do in fact represent some abstract form of the macaw or plumed/horned serpent, this would further strengthen the interpretation that these were the predominate symbols of Casas Grandes iconography.

I suggest that the duality represented in these types of combined motifs should be emphasized. Macaws and plumed/horned serpents were both pervasive symbols in the Casas Grandes region, and evidence of this extends beyond their depiction on pottery. For example, the plumed serpent mound built along the western edge of Paquimé and the numerous macaw breeding pens and sacrificial remains at the site (Di Peso 1974:554-555; Di Peso et al. 1974:5:478) build upon the idea that both creatures were significant symbolically and ideologically to the Casas Grandes people. This evidence at Paquimé also illustrates how elites or ritual leaders residing at this ceremonial center elaborated upon these important symbolic themes. Association with these embellished forms of

commonly shared symbols likely legitimized their authority and served as tokens of power.

At Salado sites, plumed/horned serpents were most often depicted as triangular shaped heads with some type of an appendage and an eye. VanPool et al. (2008:87) note that a difference between the Salado and Chihuahuan traditions is that the plumed/horned serpent is not a predominant motif on the Salado Polychromes, only representing half of the serpent imagery found in Crown's (1994) sample. While this is true, plumed/horned serpents occur more frequently than any other Mesoamerican motif at Salado communities included in this study and were more common at Salado platform mound sites. These results suggest that although the plumed/horned serpent was not the focus of the Salado symbolic system, it was important and especially to those that operated at a higher level of social hierarchy.

One interesting observation was that only two occurrences of the plumed/horned serpent *motif* were found in Chihuahua. These plumed/horned serpent motifs were of the Salado style, appearing as triangles with some type of appendage and an eye (see Figure 4.9b). These were depicted on pottery found at site CH A:16:2, which lies on the northern periphery of the Casas Grandes region, about 19 km north of Janos on the Casas Grandes River. Possible interaction between people at this site and those at Salado sites located close to the north may indicate why Salado-style plumed/horned serpents were found on these Chihuahuan vessels. This also illustrates the idea that people living at this peripheral site may have participated in the ideology centralized at Paquimé and other hierarchical Casas Grandes sites, but obviously did not follow precise decorative structures established and perpetuated by communities more integrated with the Casas

Grandes core. Just as Salado and Chihuahuan sites along the borderlands of these two traditions shared pottery, they likely shared decorative styles and possibly similar ideological beliefs.

I have already addressed in part the importance of macaws in the symbolic systems of the Casas Grandes and Salado regions. For sites in the Casas Grandes region, macaw symbolism depicted on pottery was distributed widely. Even though it was less common at less hierarchical sites on the periphery, symbolism associated with macaws was available to all, suggesting that they were ideological girders shared by members of this society.

Casas Grandes pottery exhibits an abundance of macaw symbolism, including combinations of the macaw and plumed/horned serpent in the form of spade and P-motifs, which suggests that it was an important theme. Depictions of macaws on Salado Polychromes, on the other hand, were less common. Of the 307 Salado Polychrome vessels in this study, only 13 depicted macaws, which were generally evenly distributed among both more and less hierarchical sites. As Crown (1994) has noted, macaws were one of several reoccurring symbols that were associated with the Southwestern Regional Cult. These patterns also suggest a less stratified system of organization where symbolic expression and possession were rather homogeneous across all levels of society.

In summary, both plumed/horned serpent and macaw imagery seem to have been major themes for the Casas Grandes people during the Medio Period. While these symbols were widespread, sacrificed macaw remains and the elaborated plumed/horned serpent symbol as an effigy mound were found only among the elite at the core of the

Casas Grandes region. In contrast, these symbols were only part of a larger, more diverse iconographical system among Salado communities. Their distribution among both more and less hierarchical sites and the absence of elaborated forms among more hierarchical sites suggests that they were principally used as part of a regional ideology.

Architecture: Ballcourts. Mesoamerican interaction markers have also been identified in architectural forms, including ballcourts. Haury (1976:346-347) notes that between A.D. 500 and 1200, these architectural features "stand preeminently" as markers of a time when "the Hohokam received the most massive infusions out of the south." He goes on to suggest that ballcourts and other architectural forms "are only the tangible evidence for a complex of ideas, activities, and behavior patterns associated with them," and they "may have been the main 'vehicles' on which lesser and perhaps unrelated ideas and things rode in."

Ballcourts were constructed and used *en masse* across the Hohokam landscape between A.D. 750-1000, but they were falling out of use by the thirteenth century, with the last being built around 1250 (Cordell 1997:337; Doyel 1991:255; Wilcox 1991). Ballcourts were typically oval-shaped depressions with berms built up on the sides, and it is presumed that a form of the Mesoamerican ballgame was played on them (Scarborough and Wilcox 1991; Wilcox 1991). While Abbott et al. (2007) and Wilcox (1991) have documented their importance in regional exchange and ritual among the Hohokam, Salado sites in general are not associated with this architectural feature. The only record that I could find of a ballcourt at a Salado site was at Buena Vista/Curtis Site on the Gila River just east of Safford, Arizona (Neuzil 2008:18; Wilcox 1991:112), and the ballcourts may or may not have been associated with the Salado occupation of this site.

Lekson (2008:171) has suggested that the discontinuation of ballcourts and the surge in platform mound construction in the Hohokam region in the thirteenth century A.D. is one indication of a shift in the "Hohokam canon." This time also marks the appearance of the Salado phenomenon evidenced by the wide-spread production of Salado Polychrome pottery. I would further suggest that the abandonment of ballcourts and the increase in platform mound construction may indicate a shift away from "outside" sources of interaction and a focus on the building and strengthening of local cultural traditions. The lack of ballcourts at Salado sites may suggest that not only had this tradition fallen out of favor, but that interaction with Mesoamerica had also faded.

In the Casas Grandes region, ballcourts are present not only at Paquimé, but also at sites within close proximity (<30 km) of this central site (Harmon 2005, 2006; Whalen and Minnis 2001, 2003, 2009). There are three courts at Paquimé, two of which are the classic I-shaped court found in Mesoamerica. Although other ballcourts at sites outside of Paquimé were not all constructed in the I- or T-shape, Whalen and Minnis (2003:327) only identified them at sites in the core zone, those that were more integrated into the Casas Grandes political and social system (i.e., those I have labeled more hierarchical). Harmon (2005; 2006:192) also suggests that ballcourts in the Casas Grandes region represent a strong link to those in Mesoamerica, which would include similar I-shaped and open-ended ballcourts at La Quemada in Zacatecas and the La Ferrería Site in Durango to the south (Kelley 1991:88).

To summarize, patterns associated with ballcourts add to interpretations of the sociopolitical organization at Casas Grandes and Salado sites. For Salado sites, the lack of ballcourts and the likely adoption of platform mound construction from

people participating in the Hohokam tradition suggest that interaction between Salado communities and Mesoamerica may have been less intense than that with Casas Grandes. The adoption of I- and T-shaped ballcourts indicates more direct contact with Mesoamerica for those in the Casas Grandes region, and the restricted construction of these features at sites in the core zone of Paquimé suggests that leaders used their connection to and knowledge of the "outside" world to increase their influence over those participating in the Casas Grandes ritual system.

Exotic Artifacts: Macaws, Copper Bells, and Shell. Three of the most numerous foreign items found in the SW/NW that derive from Mesoamerica are macaws, shell, and copper bells. These artifacts have been traced to the coastal regions of southeastern (macaws), northwestern (shell) and western (copper bells) Mexico, and their patterns of distribution at both Salado and Chihuahuan sites provide evidence for how these goods were being used. These patterns also reinforce the arguments concerning the difference in the nature of sociopolitical organization for each of these areas.

Macaw remains have been found in both the Salado and Casas Grandes regions. They have also been identified at other contemporaneous SW/NW sites, including Kinishba, Grasshopper, Point of Pines, Turkey Creek, Reeve Ruin, and Freeman Ranch (Di Peso et al. 1974:8:273; Hargrave 1970:43-48; McKusick 1982:92), but the number found at these sites combined are less than were discovered at Paquimé alone.

The excavations at Paquimé resulted in 503 macaws, and of these many were likely sacrificed as part of ritual tradition (Di Peso 1974:554-555; Di Peso et al. 1974:8:272). Macaw breeding pens as well as the remains of birds in many growth stages also provide evidence of aviculture. At sites in the core zone within 30 kilometers

of Paquimé, Whalen and Minnis (2000:176) identified circular stones that were perforated in the center, considered to be macaw pen doors. Although the practice of macaw aviculture occurred at sites outside of Paquimé, this evidence of aviculture indicate that the distribution of this activity was found to be restricted to more hierarchical sites. These patterns suggest that the possession and distribution of macaws were controlled by elites at the core sites, including Paquimé and its nearest neighbors.

Copper bells have been found in the SW/NW at several Hohokam sites, and the largest known quantities were discovered at Gatlin (n=55) and Snaketown (n=28) (Haury 1976:278; Vargas 2001:202). They have also been found at Salado sites, although in lesser quantity. Gila Pueblo, for example, had the most copper bells of any site after A.D. 1250 with 40 bells (Vargas 2001:203). Other contemporary sites where copper bells have also been found include Grasshopper Pueblo and Kinishba (Vargas 2001:203). Interestingly, Cline Terrace Mound and Schoolhouse Point Mound, two of the Salado platform mound sites included in this study, do not have evidence of any copper bells, even though they were exhaustively excavated during the Roosevelt Platform Mound Study (c.f. Lindauer 1996, Jacobs and Rice 1997). This may indicate that copper bell trade to this area slowed after A.D. 1250, or that it shifted to Casas Grandes.

Excavations at Paquimé resulted in 115 copper bells, the largest quantity and widest variety ever found in the SW/NW (Vargas 2001:203). Initial research on the copper artifacts at Paquimé suggested they were manufactured there using smelting and lost-wax techniques (Di Peso et al. 1974:7:500), but further work by Vargas (1995; 2001:200) suggests that the evidence of copper production of this type is tentative. Using technological and stylistic analysis, Vargas was also able to trace all but one type of

bell to the copper manufacturing tradition of West Mexico, suggesting that most of the copper items at Paquimé were originally manufactured in Mesoamerica. In addition, Vargas (2001:203) investigated the distribution of copper bell types across the SW/NW and found that few bells were found at sites thought to have received copper items from Paquimé, leading to her interpretation that Paquimé was more of a consumer than a trading post for exotic goods. Whalen and Minnis (2009:249-250) report that only one copper bell was found at Site 204, a site located within 30 km of Paquimé, and they also reference Sayles (1936:58-59, Plate XIX) who reported the discovery of only two bells and a few items of copper jewelry at the Ramos site, which is also located within the core zone of Casas Grandes.

Shell was also abundant at sites in both the Salado and Chihuahuan regions. Evidence from Paquimé suggests that it was the principal receiver of marine shell items from west coast regions in Mexico with millions of pieces being found at this primary center (Di Peso et al. 1974:6:401). As with copper bells, shell artifacts brought to the Casas Grandes region were concentrated at Paquimé. Whalen and Minnis (2009:238) carried out excavations at sites within 30 km of Paquimé (more hierarchical) and these resulted in fewer than 200 pieces of shell. Although the paucity of data from less hierarchical sites prevents us from comparing shell distribution beyond the core zone in Casas Grandes, there is likely a limited distribution of this artifact type restricted and controlled by Paquimé.

Turning to Salado sites, shell was widespread in this region and has been found at several sites including VIV, Kuykendall, Slaughter Ranch, Cline Terrace Mound and Schoolhouse Point Mound. Shell items include beads, tinklers, pendants, bracelets, and

even trumpets. In her analysis of shell exchange across the SW/NW, Bradley (1999:219) noted that Salado sites in southern Arizona and southwestern New Mexico showed relatively little variety in the types of shell artifacts. There were many more beads than any other shell item.

The shell artifact inventory from Cline Terrace and Schoolhouse Point Mounds was very detailed (Bradley and Rice 1996; Jacobs and Rice 1997). The results from this analysis provide interesting patterns related to the intrasite distribution of shell within these two Salado platform mound communities. At Schoolhouse Point, 2,572 shell artifacts were recovered, the majority of which were beads. While 42 percent of the artifacts derived from freshwater contexts, the majority were marine shell that was probably transported from the Gulf of California into the Tonto Basin. Included in this category were four large trumpets that have been associated with communal rituals that were likely the focus of activity at this mound site (Bradley and Rice 1996:595). At Cline Terrace, 612 shell items were found, the majority of which were marine (83 percent) and for the most part were finished ornaments (Bradley and Rice 1997:458). Furthermore, Jacobs and Rice (1997:581) noted that rooms constructed at the top of the platform did not contain more scarce resources than those at ground-level, leading them to suggest that this community represented a ranked segmentary society. They describe these types of societies as those in which "hierarchical organizations can be founded largely on ideological principles, and distinctions within the hierarchy need not be reflected in sumptuary items" (Jacobs and Rice 1997:581).

These patterns of macaw, copper bell, and shell distribution provide further evidence concerning the intensity of interaction with Mesoamerica and their roles in each

tradition. Macaws, shell, and copper bells are present in both Salado and Casas Grandes regions, but the numbers of these artifacts at Paquimé dwarf those found in the rest of the SW/NW. This evidence suggests that the intensity of interaction between Casas Grandes and Mesoamerica was much stronger. The fact that these exotic artifacts were also primarily found at the central site of Paquimé suggests that local leaders used them to legitimize their authority. As has been suggested by Jacobs and Rice (1997:581), the general distribution of resources among Salado communities of varying social hierarchy also correlates well with the results of the iconographical analysis and provides further evidence that people in these communities likely did not emphasize their association with Mesoamerica as an "outside" source of power or authority.

Summary

In addition to the pre-iconographical description presented in the previous chapter, I began an iconological interpretation of the foreign iconography by examining the patterns of distribution associated with Mesoamerican interaction markers among more and less hierarchical sites. This chapter has continued this interpretation by exploring two other lines of evidence. First, I found that several motifs were present in the SW/NW before the emergence of Salado and Chihuahuan Polychrome pottery. This suggests that some of the iconography may have derived from local sources rather than from Mesoamerica. In addition, I examined the distribution of other Mesoamerican interaction markers, including ballcourts, macaws, copper bells, and shell. While there is evidence to suggest that some macaws, copper bells, and shell were associated with sites in the Salado region, there were an extremely larger number of these artifacts found in the Casas Grandes region. In addition, these artifacts, as well as ballcourts, were

found principally in association with more hierarchical sites in the Casas Grandes region, whereas there was an absence of ballcourts and a general distribution of Mesoamerican artifacts among more and less hierarchical sites in the Salado region. I argue that this information indicates that interaction between Mesoamerica and the Casas Grandes region was much more intense and direct than that between Mesoamerica and Salado communities. Furthermore, I propose that this direct interaction with Casas Grandes sites reassociated symbols from previous local sources, such as the plumed/horned serpent and macaw, with Mesoamerica, also renewing their link to power from the outside world.

Chapter 8: Symbols as Local Reflections of Foreign Traditions

In this concluding chapter, I review the findings of this iconographical study and how they add to the models of sociopolitical organization for the Salado and Casas Grandes regions. For Casas Grandes, I argue that the evidence presented in the previous two chapters indicate that elites associated with the ritual system established at Paquimé used Mesoamerican symbols as tokens of authority. I also suggest that these symbols were integrated into a larger ideological system adopted by people at all Casas Grandes communities where they acted as ideological girders. People in the Salado region, on the other hand, were less centrally organized, and links to earlier SW/NW traditions suggest that their interaction with the "outside" Mesoamerican world was weaker than that found in the Casas Grandes region. They were likely using symbols as girders representative of a reorganized or revived local ideology.

Haury's (1976) interpretations of the nature of the long-distance relationship between the SW/NW and Mesoamerica were some of the first to suggest that this interaction was more a "reflection" of foreign ideology than evidence of influence from the south. I review his ideas and also suggest that interaction between these people varied in intensity over time and space. I also agree that the presence of Mesoamerican objects in the SW/NW indicates a "reflection" and local interpretation of foreign ideology rather than influence from the outside world.

Summary of Results

The iconographical analysis conducted in this study shows that the differential distributions of Mesoamerican symbols provide another line of evidence in clarifying

our understanding of the sociopolitical organization among late prehistoric societies in the SW/NW. This research was founded upon the theoretical ideas of Helms (1993), who suggested that midlevel societies recognize a dichotomy between inside and outside worlds. Elites and leaders have used power derived from objects and ideas associated with the outside to legitimize their authority. Foreign symbols can represent a link to the outside and in some cases were used as tokens of power and authority (Robb 1998). In other situations, their association with the outside may have been lost as symbols were locally reproduced and passed from one generation to another. In these cases, foreign symbols were integrated into local ideologies and became part of the worldview associated with the "inside" and were seen as symbolic girders that organized relationships within society.

In order to test these ideas, I conducted an iconographical analysis using methods adapted from Panofsky (1972[1955]). The first stage of this analysis was a pre-iconographical description of several motifs found on both Chihuahuan and Salado Polychrome pottery. The second stage began my iconological interpretation where I compared and contrasted the distribution of Mesoamerican symbols among more and less hierarchical communities in the Casas Grandes and Salado regions. For both the Casas Grandes and Salado regions, I found that Mesoamerican symbols were generally distributed among both more and less hierarchical sites, although they occurred at a slightly higher frequency among more hierarchical communities in the Casas Grandes area.

Data from the Casas Grandes region support the idea that these foreign symbols acted as tokens of authority or power at the site of Paquimé and at other more hierarchical

sites, where emerging elites and ritual specialists likely legitimized their control by demonstrating their links to the outside. Although these symbols were expressed more frequently and elaborately at more hierarchical sites in the Casas Grandes region, they were also present at less hierarchical communities on the periphery where they served as ideological girders connected to a unified system of belief or worldview. The Salado sample also provided evidence of a system in which symbols on pottery were distributed widely among people of differing positions of status. In this region, these were also symbolic girders that likely represented a reorganized, local religious canon serving to link distant participating groups. While the differences between elites and commoners were minimal at Salado sites, people who did have influential authority (i.e., those who lived on or were tied to the performance of ceremonies at platform mounds) maintained ritual prominence and seemingly supported an ideology of inclusion rather than exclusion.

Continuing the iconological interpretation, I examined two other lines of evidence that clarify these results. The Casas Grandes sociopolitical organization was focused on an elite network of communities where emerging elites used exotic goods and rituals, such as the Mesoamerican ballgame, as markers of authority. The smaller amounts of macaws, shell, copper bells and the absence of ballcourts at Salado sites indicate that interaction with Mesoamerica was less intense, and the equal distribution of resources among all echelons of Salado society suggest that these foreign goods and symbols were not generally utilized as tokens of authority.

Sociopolitical Organization in the Casas Grandes and Salado Regions

Evidence of large-scale aggregation, migration, and reorganization make the late

prehistoric period a truly extraordinary time in the SW/NW. The Casas Grandes and Salado regions are prime examples of this intense social transformation, and this section provides additional insights into previous models that demonstrate the sociopolitical diversity of this time period. It is important to first describe these regions in the appropriate light when discussing models related to social complexity and hierarchy. The scale at which Salado and Casas Grandes communities operated was much less complex than, for example, those of the Mesoamerican heartland. I suggest that communities in both traditions were intermediate societies, similar to how Whalen and Minnis (2000:176) have described Casas Grandes. They define these types of societies as:

> …those that developed beyond egalitarian, consensus-based decision making but that lack formal stratification, rigid-decision making hierarchies, and bureaucratic authority…These are societies in which emergent leaders lack the comprehensive, coercive power that characterized the highly developed complex societies of areas like Mesoamerica during the Classic and Postclassic periods. Emergent leaders in midlevel complex societies, lacking institutionalized power, operate by negotiating their statuses and by competing for positions of influence.

Negotiations of status for these emerging leaders include the possession and manipulation of symbols, especially those from foreign contexts. In addition, there are varying levels of complexity and social hierarchy within intermediate societies, which can be seen in this comparison of the models for the Salado and Casas Grandes regions.

Casas Grandes

The Casas Grandes region operated at an intensified level of centralized organization, with Paquimé serving as a ceremonial center for those who lived at other

sites. While people may have exerted some level of control over communities close to this center, emerging elites at Paquimé in the late 1300s and early 1400s were likely only beginning to explore political techniques, such as the exploitation of resources and labor, to gain power over those who participated in the Casas Grandes ritual system.

VanPool (2003a:712) has suggested that these leaders were shamans who "parlayed their spiritual power into political power as well." And in referencing Helms (1993), VanPool (2003b:361) stated elsewhere that "with their knowledge of distant places in the spiritual and physical worlds, the elites at Paquimé had power over the sacred, which also translated into political power" (VanPool 2003b:361). I would agree that the leaders who occupied hierarchical positions likely operated initially through religious and ceremonial association. They were able to encourage group ritual participation through their link to the supernatural world that was partially associated with Mesoamerica, and subsequently they gained the public's trust. As Cohen (1979) has noted, leaders likely acted not only to serve the ritual needs of their followers, but they also worked to serve their own egoistic desires. Furthermore, they were able to organize labor for the building of ritual architecture at Paquimé, such as the Serpent Mound and the Mound of the Cross, which likely further solidified the public's trust and the legitimacy of these ritual leaders.

While foreign symbols can be seen as tokens of authority and power in the hands of emerging leaders, this current study shows that their use and expression by members of all Casas Grandes communities was also important. These symbols acted as social girders, working to organize social relationships and representing inclusion in a commonly shared ideology that framed their worldview. The organization of Casas

Grandes communities as a whole was likely based on participation in this common religion, much of which may have been modeled after both local and foreign traditions.

The dual symbolic nature of foreign objects (symbols as tokens *and* girders) can be seen in the differential distribution of macaws and macaw imagery at Casas Grandes sites. While depictions of these birds were possessed by all in the region, evidence suggests that only those communities within close proximity of Paquimé and at this core site possessed macaws. Whalen and Minnis (2009:246) have argued that these patterns illustrate how ritual authority spread from Paquimé and likely did so at multiple levels:

> The first conceivably involved actual possession of the birds, which mostly was restricted to Casas Grandes and its neighbors of the outer part of the Core Zone. Macaw symbols also were plentiful here. Possession of macaws could imply a more direct or more intensive participation in ritual systems, as well as a more comprehensive extension of the ritual authority of the primate center. The second level of participation and extension of ritual authority may be reflected in the absence or near absence of the birds with the common presence of macaw symbols on ceramic vessels.

This explanation of "levels of participation" correlates well with the results of my iconographical analysis which shows that macaws, either as representational depictions or as abstract forms such as P-motifs and spades, appear commonly on vessels from both more and less hierarchical sites in the Casas Grandes region. I also found, though, that the images occurred more commonly on pottery at more hierarchical sites, suggesting a "more intensive participation" in the ritual system centered at Paquimé (Whalen and Minnis 2009:246). The distribution patterns of macaw imagery and evidence of macaw

possession support the idea that these symbols served as both ideological girders and as tokens of authority.

As others have also noted, Lekson (2008:244) recognizes that "Paquimé was more closely tied to Mesoamerica – both west and central – than were any other southwestern polities." He also states that like architectural forms, more Mesoamerican items were found at Casas Grandes than any other regions in the SW/NW. The strong link between Mesoamerica and Casas Grandes is undeniable, and the results of the iconographical analysis in this study contribute to the understanding of how elites/ritual leaders at Paquimé functioned, using this link to the outside to their advantage. While some of the Mesoamerican symbols, such as plumed/horned serpents and macaws, may have originally derived from previous local traditions, their connection to Mesoamerica was likely renewed as interaction between these two areas intensified through social mechanisms like exotic and ritual trade.

Symbolic participation *was* shared by all members of the Casas Grandes society, but it was expressed differently by those living in and around the center of Paquimé. Those at and around this core site elaborated these symbols through architecture and through elite possession of exotics, including macaws, shell, and copper bells. Mesoamerican symbols on pottery occurred less often further from Paquimé, strengthening the idea that those at an increased distance likely associated with and related to a common religious system, but may not have been tied to or directly controlled by those at Paquimé.

In describing their interpretation of the political organization of Casas Grandes, Whalen and Minnis (2009:278) state:

> …instead of a uniform hegemony, we expect a situation in which the central place projects its authority outward through a complex, negotiated set of relationships in fragmented political contexts. Furthermore, we presume that the center's control should become more discontinuous and less comprehensive with movement away from it.

As with the aspect of political control, symbolic expression, a marker of religious participation and social solidarity, was slightly weaker among less hierarchical communities on the periphery who likely were not as integrated with the core religious system tied to Paquimé.

Salado

In the case of Salado sociopolitical organization, it appears that these communities were less centralized than Casas Grandes. Their situation certainly did not involve a central polity like Paquimé, and there exists much more cultural diversity among those that participated in the Salado tradition. For example, architectural styles differed widely among sites across the broad region in which people participated in the production of Salado Polychrome pottery, *the* defining material trait of Salado communities. In addition, decorative motifs and symbols likely derived from a variety of ancestral regions like the Hohokam, Mimbres, and Ancestral Pueblo, from which people migrated to and reorganized in central/southeastern Arizona and southwestern New Mexico sometime around the twelfth and thirteenth centuries A.D.

Found among these diverse sites are those that include platform mounds, which likely were residences for elite members of society and/or were places to facilitate ritual ceremonies (Rice 1998:237). Those occupying platform mound sites as well as other

Salado communities shared common ideological beliefs, as evidenced by the wide-spread possession and production of Salado Polychrome pottery. Through this system of belief, emerging ritual leaders used their status to build public trust and recruit followers, but the extent of their power was limited and at a lesser scale than that among ritual leaders at Paquimé, as evidenced by the homogeneous possession of resources by all members of society in the Salado region. They may only have been able to exert very limited amounts of control, which was likely dependent upon a leader's ritual prominence.

In his synthesis of the Roosevelt Platform Mound Study, Rice (1998:237) found that there were not "appreciably greater quantities of trade goods, raw materials, or tools used for craft production" at platform mounds sites in comparison to surrounding sites. Evidence from my iconographical study also suggests that there was very little differentiation in the possession of symbols, including those symbols proposed to be Mesoamerican in nature between people at more and less hierarchical sites. These results further strengthen the idea that Salado elites/leaders associated with platform mound sites were not capable of exerting control over resources, but were convincing enough and obtained a high enough level of public trust to organize the building of platform mounds. This evidence also supports Rice's (2000:165) interpretation of Salado platform mound communities as those that likely operated as ranked segmentary societies, where there was an "absence of managerial control of surplus or production at the platform mound complexes." Furthermore, he states that "the platform mound centers differed from surrounding settlements only with respect to special ceremonial functions and status distinctions such as more elaborate architecture" (Rice 2000:165). And while this description may be more appropriate for the platform mound sites found in the Tonto

Basin, including those examined in this study, the level of social differentiation and authoritative control most certainly differed dependent on the circumstances found at other Salado sites (see Elson and Abbott 2000:134).

Before the large amounts of information concerning the Salado were available after the extensive archaeological work performed in the 1990s, Wilcox and Sternberg (1983:244) suggested that Salado communities could be characterized as "a weakly integrated system of exchange among a large series of small-scale regional systems." I agree that the Salado represent a "large series of small-scale regional systems," but iconographical analysis suggests that they were strongly integrated within a ritual and ideological system.

The Salado phenomenon was a large reorganization in not only sociopolitical structure, but also in the ritual framework associated with these communities. As Crown (1994) has suggested, the appearance of Salado pottery along with its suite of iconic motifs likely represents a widely accepted ideology, a model that my data also support. This new ideological framework, the Southwestern Regional Cult, worked to unite diverse people from different backgrounds, and whose ideological structure probably derived from existing and revived religious frameworks. Furthermore, the cult operated as a relatively egalitarian ritual system at both more and less hierarchical communities. At the conclusion of this iconographical analysis, I suggest that these communities focused more on participation in a ritual system rather than status within it — a socioreligious system that likely emphasized inclusion rather than exclusion.

Mesoamerican "Reflections" in the SW/NW

As was stated in the first chapter, many have viewed the relationship between

Mesoamerica and the SW/NW as one of a dominating influence from an outside, foreign entity. Haury (1976), in his synthesis of fieldwork at the Hohokam site of Snaketown, suggested that Mesoamerican traits in the SW/NW resemble more of a "reflection" of foreign traditions. At the conclusion of my research, I would also argue that his thoughts about the adoption of Mesoamerican traits by the Hohokam closely reflect the actual nature of this long-distance relationship for most of the SW/NW, and his interpretations are now supported by 30 more years of archaeological research.

In his summary of the transmission of culture from Mesoamerica to the Hohokam, Haury (1976:348) presented three ideas that are salient to this discussion in the following statement:

> Granted that Mesoamerica was the donor of cultural fundamentals and that the lifeline continued to feed vitality northward, it must also be recognized that the Hohokam reshaped the elements inherited from a polished and hierarchic social system to make them compatible with their own, which at best, was weakly class-structured and feebly hierarchical.

First, Haury recognized that the ideas and goods continued to flow to the SW/NW over time, evidenced by interaction markers such as architectural forms and exotic goods found across this region. The variable intensity of interaction with Mesoamerica was also reflected in the appearance of these foreign traditions and goods of interaction over time and space. For example, ballcourts were constructed across the Hohokam region until the thirteenth century. After this architectural tradition was abandoned there, it reappeared in the Casas Grandes region shortly after, sometime in the 1200s. While people in the Hohokam region were likely key participants in long-distance interaction

with Mesoamerican communities before A.D. 1200, I would argue that Paquimé later took its place as a major center of interaction.

The second idea that Haury proffered is that although the donor culture had a "polished and hierarchic social system," communities who adopted these traits in the SW/NW were in no way comparable to the social complexity or stratification of societies in Mesoamerica. Most archaeologists would agree with this observation, although some may suggest that SW/NW societies operated at a similar level of social complexity and hierarchy as was present in some Mesoamerican polities (see Lekson 2008:12).

Third, Haury (1976:348) makes the point that Mesoamerican interaction markers in both material and ideological form were integrated into existing, local social systems. Too often, the relationship between the SW/NW and Mesoamerica has been described as one dominated by the south. In other words, Mesoamerica was seen as the controlling force for change in select SW/NW societies through time. Haury (1976:347) suggested an alternative to the idea that Mesoamerican emigrants settled the Phoenix Basin and subsequently transformed the structure of the existing communities by referring to certain adopted traits as being "reflective of the Mesoamerican idiom." For the Hohokam, he further suggests that the period in which there is an influx of southern traits can be described as "one of great activity in the south and high receptivity of influences in the north, a state of affairs conditioned by some 800 years of exposure beforehand" (Haury 1976:347).

In describing the meaning of foreign items at Casas Grandes, Whalen and Minnis (2003:328) suggest that these were not the result of "distant developmental stimuli," but rather "imports used to support and augment the power of local political entrepreneurs."

Foster (1986:61) has also described the adoption of foreign elements as one that was locally adapted:

> Once adopted, traits were undoubtedly modified to local conditions and needs. Through time these traits were further elaborated upon and modified by these local cultures. Thus, although the various southwestern iconographic and ceremonial traits have their origins in mesoamerican mythology, they vary from their Mesoamerican roots.

Elements of Mesoamerican culture were integrated differently into existing social systems, and as was discussed above, many derived from ancestral communities who once had direct contact with Mesoamerican societies. Viewing these long-distance markers of interaction as "reflections" of Mesoamerica most appropriately describes the way in which they were integrated into societies in the SW/NW.

Summary

This research has reevaluated how local societies variably integrate foreign symbols and ideas, and it also sheds light on the nature of interaction between the SW/NW and Mesoamerica. Following a revised version of Panofsky's methods of iconographical analysis, I conducted pre-iconographical description and iconological interpretation of symbols that was depicted on polychrome pottery, the results of which support the idea that the Salado and Casas Grandes systems were differentially linked to Mesoamerica. Furthermore, I suggest that the Casas Grandes region was founded upon a common ideology, shared by all within this society. While this ideology was expressed through symbolism on pottery, elaborated symbolic forms, such as effigy mounds, and the near exclusive possession of exotic commodities by elites living in the core of this

regional system indicate that leaders used their symbolic connection to Mesoamerica to legitimize their authority. For the Salado region, people also participated in a similar ideology as is represented in a common iconography found on Salado Polychrome pottery. In contrast to the Casas Grandes region, they were less centrally organized and resources such as exotic trade goods were found to be equally distributed among all classes of society. Also, many of the symbols found on Salado pottery derived from previous local traditions, and there was a paucity of Mesoamerican trade goods found in this region in comparison to Casas Grandes. Following these lines of evidence, I concluded that the Salado link to Mesoamerica was weak.

Finally, the broader implications of this research include contributions to the discussion of long-distance relationships within prehistoric societies by focusing on the local integration of foreign cultural elements. In addition to studies concerning the exchange of commodities between communities, I have shown how examining iconographical systems can increase our understanding of these distant relationships. And while more remains to be explored, this study represents the first few steps in developing and applying methodology appropriate for the study of iconography among prehistoric societies.

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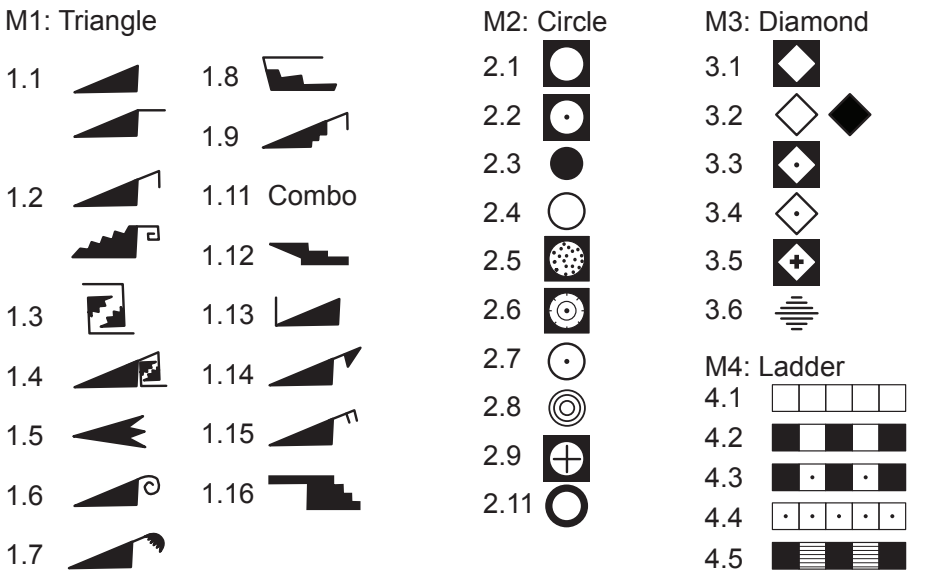
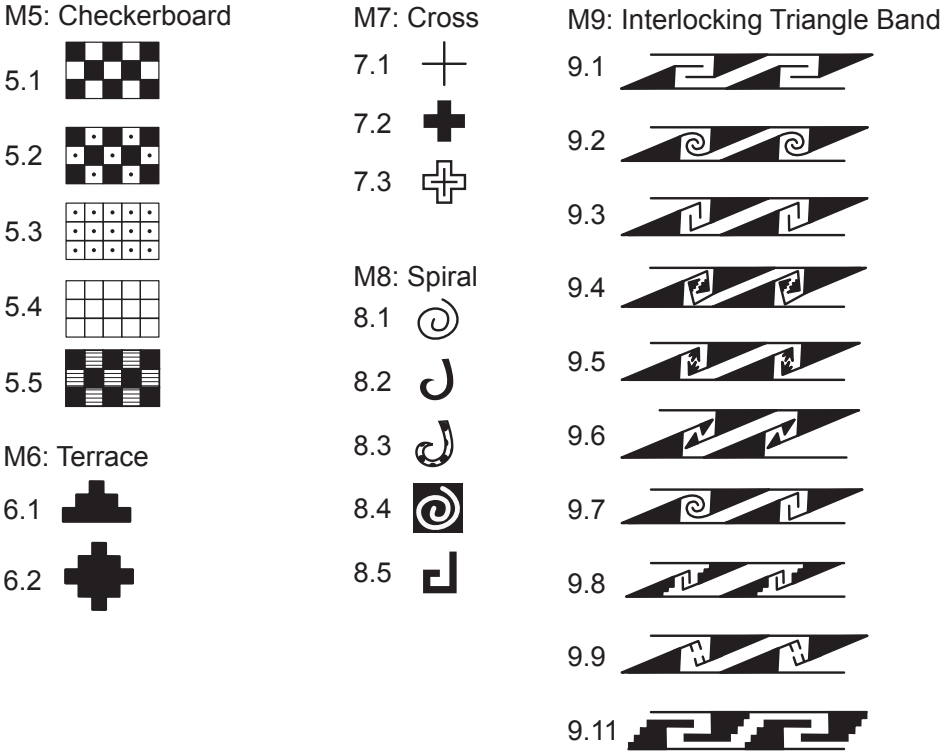
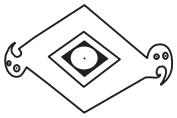
Appendix A
Recorded Motifs and Variations





M10: Twins/pairs

10.1 

10.2 Multiple pairs

10.3 

M11: Feather

11.1 

11.2 

11.3 

11.4 

11.5 

11.6 

M12: Horned Serp. head

12.1 

12.2 

12.3 

12.4 

12.5 

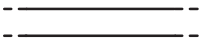
12.6 

12.7 

12.8 

12.9 

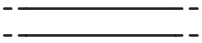
M13: Horned Serp. body

13.1 

13.2 

13.3 

M14: Serpents

14.1 

14.2 

14.3 

M15: Macaw

15.1 

15.2 

15.3 

15.4 

15.5 

M16: Butterfly

16.1 

16.2 

16.3 

M17: Flower/star

17.1 

17.2 

17.3 

17.4 

M18: Faces/masks

18.1 

18.2 

18.3 

18.4 

M19: Phallus

19.1 

19.2

19.3

M20: Sun

20.1 

20.2 

M22: Anthropomorphs

22.1 Male effigy

22.2 Female effigy

22.3 Androgenous effigy

22.4 

22.5 

22.6 

M23: Spade

23.1 

23.2 

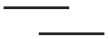
23.3 

23.4 

23.5 

23.6 

M24: Scroll ends

24.1 

24.2 

24.3 

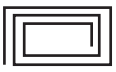
24.4 

24.5 

24.6 

24.7 

M25: Scroll shape

25.1 

25.2 

25.3 

25.4 

25.5 

25.6 

25.7 

M26: P Motif

26.1 

26.2 

26.3 

26.5 

M27: Zoomorphs

27.1 indeterminate

27.2 bird

27.3 bighorn sheep

27.4 frog

27.5 turtle

27.6 fish

27.7 owl

27.8 duck

Appendix B
Variable Codes

Code	Variable
Ware	
50	Roosevelt Red Ware
70	Chihuahuan Polychrome
Type	
31	Gila Polychrome (bowl)
32	Gila Polychrome: Gila Variety (bowl)
33	Gila Polychrome: Tonto Variety (bowl)
34	Gila Polychrome, exterior decoration only (bowl)
35	Gila Polychrome (other)
41	Tonto Polychrome (bowl)
42	Tonto Polychrome (other)
61	Cliff Polychrome
62	Cliff Polychrome: Gila Variety
63	Cliff Polychrome: Tonto Variety
72	Ninemile Polychrome: Gila Variety
73	Ninemile Polychrome: Tonto Variety
75	Phoenix Polychrome: Gila Variety
76	Phoenix Polychrome: Tonto Variety
78	Dinwiddie Polychrome: Gila Variety
79	Dinwiddie Polychrome: Tonto Variety
80	Gila Style body/Gila Style neck polychrome jar
81	Tonto Style body/Tonto Style neck polychrome jar
82	Tonto Style body/Gila Style neck polychrome jar
84	Los Muertos Polychrome
85	Gila Style body/Tonto Style neck polychrome jar
90	Cliff White-on-red
5005	Pinto Polychrome
5093	Gila Polychrome: Salmon Variety (bowl)

Code	Variable
Type (continued)	
7000	El Paso Polychrome
7001	Ramos Polychrome
7002	Villa Ahumada Polychrome
7003	Huerigos Polychrome
7004	Ramos Black
7005	Babícora Polychrome
7006	Dublán Polychrome
7007	Carretas Polychrome
7008	Corralitos Polychrome
7009	Ramos Black-on-white
7010	Playas Red
7011	Escondida Polychrome
7012	Medanos Red on Brown
7013	Madera Black on Red
7090	Indeterminate Chihuahuan Polychrome
7091	Indeterminate Chihuahuan Bichrome
7092	Indeterminate Chihuahuan Bichrome or Polychrome
Vessel Shape	
0	indeterminate bowl or jar
1	bowl
2	jar
3	scoop
4	indeterminate "flare-rim"
5	pitcher
6	ladle
7	effigy vessel
8	legged vessel
9	cup
10	elongated vessel
11	ceramic censor
12	canteen
13	pinch pot
14	indeterminate bowl or seed jar
15	indeterminate bowl or scoop
16	cornucopia
17	pipe
90	other ceramic item

Code	Variable
Vessel Form	
101	flare-rim bowl
102	plate/platter
103	outcurved bowl
104	hemispherical bowl
105	straight-walled bowl
106	incurved bowl
120	semi-flare rim, hemispherical bowl
121	semi-flare rim, incurved bowl
122	semi-flare outcurved bowl
124	recurved bowl
127	low shouldered bowl
210	tall flare-rim jar
211	short flare-rim jar
213	short straight collared jar
214	tall straight collared jar
215	seed jar
217	neckless jar
218	semi-flaring tall straight collared jar
219	incurved straight collared jar
230	double jar
231	Jar-in-a-bowl
242	semi-flaring angled long collared jar
243	semi-flaring short straight collared jar
290	other jar
710	bird effigy
711	other animal
712	fish
720	anthropomorph effigy
790	effigy vessel
900	conjoined jars
9000	other ceramic vessel/item
Effigy Type	
1	bird
2	human (female)
3	human (male)
4	human (sex indeterminate)
5	animal (non-bird/fish)
6	human head (hooded or head only)
7	fish
8	human body part
-9	Indeterminate

Code	Variable
Reconstructed	
0	whole vessel
1	reconstructed whole vessel (RV)
2	reconstructed partial vessel > 50% (RPV)
3	partial vessel >50%
4	partial vessel <50%
Rim holes	
0	no rim holes
1	rim holes
2	handles at rim
Banding Line/Location	
0	no banding line
1	banding line at rim
2	distance between rim and banding line is less than the width of the banding line
3	distance between rim and banding line is equal to the width of the banding line
4	distance between rim and banding line is more than the width of the banding line
Line Break	
-9	indeterminate
0	absent
1	present
Design Layout	
	Banded
500	unsectioned band/banded continuous
501	horizontally sectioned band
502	vertically sectioned band
503	diagonally sectioned band
504	zigzag band
505	double zigzag sectioned band
506	y-frame band
507	top band only
508	unbanded continuous
509	isolated linear (no banding lines)
510	multi-lined continuous

Code	Variable
Design Layout (continued)	
	Finite
600	bisected
601	offset bisected
602	trisected
603	negative offset trisected
604	spaced trisected
605	quartered
606	offset quartered
607	negative offset quartered
608	double quartered
609	checkerboard
610	central spiral
611	repeated
612	asymmetric
613	banded with center design
614	zigzag
-9	indeterminate
Design Field Location	
	Bowls
701	primary interior, secondary exterior
702	primary exterior, secondary interior
703	full interior and exterior
704	exterior only
705	interior only
780	interior and exterior of unknown extent
799	other
	Jars
800	exterior only
801	interior only
802	primary interior, secondary exterior
803	primary exterior, secondary interior
890	only neck design present
899	other

Code	Variable
Triangles	
1.1	simple
1.2	hooked
1.3	stepped
1.4	hooked/stepped
1.5	barbed
1.6	scrolled
1.7	curvilinear feather
1.8	elongated stepped
1.9	notched/hooked
1.11	Combination (2 or more styles)
1.12	triangle step
1.13	front hook
1.14	triangular appendage
1.15	fretted
1.16	stepped with line
Circles	
2.1	negative
2.2	negative with dot
2.3	painted (solid)
2.4	single line circumference
2.5	negative with dots
2.6	negative stylized
2.7	single line circumference with dot
2.8	concentric circles
2.9	negative circle with cross
2.11	thick inner circle
Diamonds	
3.1	negative
3.2	painted/outline
3.3	negative with dot
3.4	outline with dot
3.5	negative stylized
3.6	painted stylized
Ladders	
4.1	lines only
4.2	alternating colors
4.3	alternating colors with dots
4.4	empty squares with dots
4.5	alternating fill/hatched

Code	Variable
Checkerboards	
5.1	alternating colors
5.2	alternating colors with dots
5.3	empty squares with dots
5.4	empty squares
5.5	alternating fill/hatched
Terraces	
6.1	half
6.2	full
Crosses	
7.1	thin line
7.2	block
7.3	outline with center fill line
Spirals/Scrolls	
8.1	thin line
8.2	bold line
8.3	stylized/painted
8.4	negative
8.5	angular
Hooked Triangle Bands	
9.1	single line
9.2	scrolled
9.3	hooked
9.4	stepped
9.5	barbed
9.6	triangle
9.7	combination
9.8	notched hook
9.9	fretted
9.11	stepped with line
Twins/Pairs	
10.1	single pair
10.2	multiple pairs
10.3	single pair (effigy)
Feathers	
11.1	fretted
11.2	triangular
11.3	rectangular
11.4	curvilinear
11.5	knife-wing
11.6	rounded

Code	Variable
Horned/Plumed Serpent Heads (a=forward pointing; b=backward pointing)	
12.1	spiral
12.2	feathered
12.3	rectilinear scroll/hooked
12.4	fretted
12.5	double-plume
12.6	stepped
12.7	stepped with line
12.8	knife-wing
12.9	barbed
12.11	indeterminate
Horned/Plumed Serpent Bodies	
13.1	no fill
13.2	bold/filled
13.3	stylized
Serpents	
14.1	no fill
14.2	bold/filled
14.3	stylized
Macaws	
15.1	bold hooked head
15.2	diamond macaw (two-headed)
15.3	full body
15.4	effigy vessel/appliquéed
15.5	Salado style
Butterflies	
16.1	opposing isosceles triangle
16.2	opposing right angle
16.3	rectangular
Flowers/Stars	
17.1	pointed
17.2	rounded
17.3	realistic flower
17.4	defined by design layout (pointed)
Faces/Masks	
18.1	single face
18.2	double-faced effigy
18.3	motif (painted)
18.4	multiple (face effigy)

Code	Variable
Phallus	
19.1	protruding from effigy
19.2	painted motif
19.3	protruding from effigy/being held
Suns	
20.1	triangular rays
20.2	square with triad corners
Anthropomorphs	
22.1	male effigy vessel
22.2	female effigy vessel
22.3	androgenous effigy vessel
22.4	full-bodied (painted)
22.5	head effigy only/hooded
22.6	face only on vessel (not above rim)
Spades	
23.1	half spade
23.2	whole spade
23.3	whole spade/truncated point
23.4	whole spade/rounded point
23.5	abstract/other
23.6	half spade/truncated point
Scroll Shapes	
25.1	rectangular
25.2	triangular
25.3	composite triangular scroll
25.4	P triangle
25.5	composite triangular scroll (right angle)
25.6	circular
25.7	diamond
Scroll Ends	
24.1	simple (lines)
24.2	stepped
24.3	spiral
24.4	hooked
24.5	P shape
24.6	barbed
24.7	triangle/front hook

Code	Variable
P Motifs	
26.1	negative
26.2	negative with simple center fill line
26.3	negative with stylized center fill line (or boldly painted)
26.4	painted stylized
26.5	double P
Other Zoomorphs	
27.1	indeterminate zoomorph
27.2	birds
27.3	bighorn sheep
27.4	frogs
27.5	turtle
27.6	fish
27.7	owl
27.8	duck

Appendix C
Data Summary

Table AC.1. Summary of whole vessel data.

Catalog #	Sec. Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
GP38571		ASM	CH A:16:2(GP)	70	7001	7	720	6
GP38572		ASM	CH A:16:2(GP)	70	7001	7	710	1
GP38573		ASM	CH A:16:2(GP)	70	7002	7	711	5
GP38574		ASM	CH A:16:2(GP)	70	7005	7	720	6
GP38575		ASM	CH A:16:2(GP)	70	7002	7	720	3
GP38576		ASM	CH A:16:2(GP)	70	7005	7	712	7
GP38577		ASM	CH A:16:2(GP)	70	7001	7	720	6
GP38578		ASM	CH A:16:2(GP)	70	7005	7	720	6
GP38579		ASM	CH A:16:2(GP)	70	7005	2	217	
GP38580		ASM	CH A:16:2(GP)	70	7005	2	211	
GP38581		ASM	CH A:16:2(GP)	70	7005	2	211	
GP38582		ASM	CH A:16:2(GP)	70	7001	2	213	
GP38583		ASM	CH A:16:2(GP)	70	7002	2	211	
GP38584		ASM	CH A:16:2(GP)	70	7002	2	213	
GP38585		ASM	CH A:16:2(GP)	70	7001	2	211	
GP38586		ASM	CH A:16:2(GP)	70	7006	2	213	
GP38587		ASM	CH A:16:2(GP)	70	7005	2	243	
GP38588		ASM	CH A:16:2(GP)	70	7005	2	217	
GP38589		ASM	CH A:16:2(GP)	70	7005	2	213	
GP38590		ASM	CH A:16:2(GP)	70	7001	2	213	
GP38591		ASM	CH A:16:2(GP)	70	7001	2	213	
GP38592		ASM	CH A:16:2(GP)	70	7001	2	217	
GP38593		ASM	CH A:16:2(GP)	70	7002	2	211	
GP38594		ASM	CH A:16:2(GP)	70	7001	2	211	
GP38595		ASM	CH A:16:2(GP)	70	7002	2	213	
GP38596		ASM	CH A:16:2(GP)	70	7002	2	242	
GP38597		ASM	CH A:16:2(GP)	70	7001	2	211	
GP38598		ASM	CH A:16:2(GP)	70	7001	2	243	
GP38599		ASM	CH A:16:2(GP)	70	7001	2	213	
GP38600		ASM	CH A:16:2(GP)	70	7001	2	213	
GP38601		ASM	CH A:16:2(GP)	70	7005	2	211	
GP38602		ASM	CH A:16:2(GP)	70	7005	2	210	
GP38603		ASM	CH A:16:2(GP)	70	7005	2	217	
GP38604		ASM	CH A:16:2(GP)	70	7002	2	213	
GP38605		ASM	CH A:16:2(GP)	70	7001	2	213	
GP38607		ASM	CH A:16:2(GP)	70	7005	2	218	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
GP38571	17.2	12.6	6.99	502		2	800
GP38572	13.1	15.5	8.97	502		1	800
GP38573	10.7	26.4	8.4	510		1	800
GP38574	21	19.5	11.26	501		1	800
GP38575	16.2	16.6	7.64	502		1	800
GP38576	9.4	16.4	7.71	501		1	800
GP38577	14.7	18.1	10.01	501		1	800
GP38578	20	16.3	9.41	501		1	800
GP38579	12.6	17.8	9.66	501		1	800
GP38580	13.9	16.8	8.81	501		1	800
GP38581	13.6	16.9	8.52	510		2	800
GP38582	17	20.4	10.75	504		1	800
GP38583	15.6	24.5	13.02	501		1	800
GP38584	13	15.1	8.33	510		1	800
GP38585	22.3	24.2	12.77	510		1	800
GP38586	13	15.1	7.18	501		1	800
GP38587	14	16.5	8.48	501		1	800
GP38588	15.6	20.5	10.68	510		1	800
GP38589	11	13.8	5.9	510		1	800
GP38590	19.5	23.3	11.55	510		1	800
GP38591	19.5	21.2	10.39	502		1	800
GP38592	14.4	18.3	9.82	510		1	800
GP38593	18.2	19	10.92	510		1	800
GP38594	14.7	18	10.28	510		1	800
GP38595	15.4	24.4	10.6	510		1	800
GP38596	20.5	23.2	11.91	501		1	800
GP38597	21	23	10.92	502		1	800
GP38598	20.2	24.7	12.59	504		1	800
GP38599	18.7	21.2	11.06	501		1	800
GP38600	16.8	22.1	12.47	510		1	800
GP38601	14.6	17.2	8.81	501		1	800
GP38602	16.4	20.2	11.93	501		1	800
GP38603	11.6	14.3	8.01	510		1	800
GP38604	21.3	23.7	11.73	501		1	800
GP38605	16	18.4	9.22	510		1	800
GP38607	21	22.2	10.71	501		1	800

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
GP38608		ASM	CH A:16:2(GP)	70	7001	2	213	
GP38609		ASM	CH A:16:2(GP)	70	7002	2	217	
GP38610		ASM	CH A:16:2(GP)	70	7002	2	217	
GP38612		ASM	CH A:16:2(GP)	70	7007	2	217	
GP38613		ASM	CH A:16:2(GP)	70	7001	2	214	
GP38614		ASM	CH A:16:2(GP)	70	7001	2	211	
GP38615		ASM	CH A:16:2(GP)	70	7009	2	211	
GP38616		ASM	CH A:16:2(GP)	70	7006	2	242	
GP38619		ASM	CH A:16:2(GP)	70	7001	2	211	
GP38621		ASM	CH A:16:2(GP)	70	7001	2	211	
GP38622		ASM	CH A:16:2(GP)	70	7011	2	218	
GP38623		ASM	CH A:16:2(GP)	70	7005	2	211	
GP38624		ASM	CH A:16:2(GP)	70	7001	2	211	
GP38625		ASM	CH A:16:2(GP)	70	7001	2	211	
GP38626		ASM	CH A:16:2(GP)	70	7002	7	711	5
GP38627		ASM	CH A:16:2(GP)	70	7010	7	710	1
GP38628		ASM	CH A:16:2(GP)	70	7002	1	124	
GP38629		ASM	CH A:16:2(GP)	70	7001	1	104	
GP38630		ASM	CH A:16:2(GP)	70	7014	1	103	
GP38631		ASM	CH A:16:2(GP)	70	7002	1	106	
GP38632		ASM	CH A:16:2(GP)	70	7005	1	106	
GP38633		ASM	CH A:16:2(GP)	70	7001	1	106	
GP38634		ASM	CH A:16:2(GP)	70	7001	1	106	
GP38635		ASM	CH A:16:2(GP)	70	7005	1	104	
GP38636		ASM	CH A:16:2(GP)	70	7007	1	106	
GP38637		ASM	CH A:16:2(GP)	70	7005	1	106	
GP38638		ASM	CH A:16:2(GP)	70	7001	1	101	
GP38639		ASM	CH A:16:2(GP)	70	7002	1	106	
GP38640		ASM	CH A:16:2(GP)	70	7005	1	104	
GP38641		ASM	CH A:16:2(GP)	70	7005	2	211	
GP38649		ASM	CH A:16:2(GP)	70	7008	2	211	
GP40047		ASM	CH A:16:2(GP)	70	7002	2	211	
GP40048		ASM	CH A:16:2(GP)	70	7005	2	217	
GP38542		ASM	CH B:13:1(GP)	70	7001	2	211	
GP38543		ASM	CH B:13:1(GP)	70	7005	2	211	
GP38544		ASM	CH B:13:1(GP)	70	7014	2	211	
GP38545		ASM	CH B:13:1(GP)	70	7001	2	213	
GP38546		ASM	CH B:13:1(GP)	70	7001	2	213	
GP38547		ASM	CH B:13:1(GP)	70	7001	2	211	
GP38548		ASM	CH B:13:1(GP)	70	7011	2	213	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
GP38608	17	18.3	9.97	504		1	800
GP38609	13.2	16.7	8.95	510		1	800
GP38610	12.6	16.1	8.16	501		1	800
GP38612	13.9	19.6	9.46	510		1	800
GP38613	20.2	24.8	12.26	502		1	800
GP38614	12.7	15.6	8.08	502		1	800
GP38615	16.9	19.4	9.54	504		1	800
GP38616	12.4	15.3	7.95	501		1	800
GP38619	24.5	25.5	12.9	501		1	800
GP38621	22.1	24.4	12.6	502		1	800
GP38622	20.8	28.1	12.52	508		1	800
GP38623	13.8	16.5	7.56	510		1	800
GP38624	16.9	20	9.7	502		1	800
GP38625	15.6	18.5	10.49	510		1	800
GP38626	12.5	29.1	10.3	-9		1	800
GP38627	15.1	23.6	12.52	-9		1	800
GP38628	14.2	23.1	18.1		504	1	704
GP38629	7.6	15.7	14.5		510	1	704
GP38630	4	10.3	9.61	605	605	2	703
GP38631	5.2	10.1	7.86		510	1	704
GP38632	6.3	11.4	10.12		510	1	704
GP38633	10.6	20.4	17.8		510	1	704
GP38634	10.2	17.4	13.15		502	1	704
GP38635	8.9	18.17	17.1	605	510	2	701
GP38636	13.4	24.6	20.9		510	1	704
GP38637	10.5	15	11		510	1	704
GP38638	9.9	15.6	13.56		502	1	704
GP38639	10.8	16.4	13.36		509	1	704
GP38640	7.5	15.4	14.05		510	1	704
GP38641	16.1	18.9	8.93	501		1	800
GP38649	11.7	12.7	7.75	502		1	800
GP40047	20.2	24.3	11.12	510		1	800
GP40048	16.1	18.9	8.82	501		1	800
GP38542	20.6	20.9	10.5	510		1	800
GP38543	19.3	23.3	10.07	501		1	800
GP38544	17.5	20.3	10.75	510		1	800
GP38545	22.3	23.3	11.9	502		1	800
GP38546	19.7	22.3	10.74	502		1	800
GP38547	21.4	25	12.25	502		1	800
GP38548	16.5	20.6	9.51	509		1	800

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
GP38551		ASM	CH B:13:1(GP)	70	7005	2	211	
GP38552		ASM	CH B:13:1(GP)	70	7001	2	213	
GP38553		ASM	CH B:13:1(GP)	70	7005	2	230	
GP38554		ASM	CH B:13:1(GP)	70	7001	2	211	
GP38555		ASM	CH B:13:1(GP)	70	7001	7	710	1
GP38556		ASM	CH B:13:1(GP)	70	7005	2	213	
GP38557		ASM	CH B:13:1(GP)	70	7005	2	213	
GP38558		ASM	CH B:13:1(GP)	70	7005	2	213	
GP38559		ASM	CH B:13:1(GP)	70	7005	2	217	
GP38560		ASM	CH B:13:1(GP)	70	7005	2	211	
GP38561		ASM	CH B:13:1(GP)	70	7002	2	211	
GP38562		ASM	CH B:13:1(GP)	70	7005	2	211	
GP38563		ASM	CH B:13:1(GP)	70	7010	7	720	6
GP38564		ASM	CH B:13:1(GP)	70	7001	1	106	
GP38565		ASM	CH B:13:1(GP)	70	7002	1	106	
GP38566		ASM	CH B:13:1(GP)	70	7001	1	106	
GP38567		ASM	CH B:13:1(GP)	70	7001	1	106	
GP38568		ASM	CH B:13:1(GP)	70	7014	1	104	
GP38569		ASM	CH B:13:1(GP)	70	7090	2	211	
A-32146		ASM	Janos Vicinity	70	7001	2	215	
A-32147		ASM	Janos Vicinity	70	7001	2	211	
A-32148		ASM	Janos Vicinity	70	7007	1	106	
A-32149		ASM	Janos Vicinity	70	7009	1	104	
A-32150		ASM	Janos Vicinity	70	7002	2	211	
A-32151		ASM	Janos Vicinity	70	7001	2	211	
GP38527		ASM	CH D:3:1(GP)	70	7008	7	712	7
20621		ASM	Col. Enrique Vicinity	70	7001	2	211	
20623		ASM	Col. Enrique Vicinity	70	7001	2	211	
20624		ASM	Col. Enrique Vicinity	70	7001	2	213	
20626		ASM	Col. Enrique Vicinity	70	7091	7	720	6
20640		ASM	Col. Enrique Vicinity	50	75	2	211	
20641		ASM	Col. Enrique Vicinity	70	7008	2	900	
GP10064		ASM	Rancho Corralitos	70	7002	2	213	
GP10067		ASM	Rancho Corralitos	70	7001	2	213	
GP10084		ASM	Rancho Corralitos	70	7001	2	211	
GP10085		ASM	Rancho Corralitos	70	7001	2	211	
GP10097		ASM	Rancho Corralitos	70	7002	2	211	
GP10099		ASM	Rancho Corralitos	70	7005	2	211	
GP10101		ASM	Rancho Corralitos	70	7002	2	211	
GP10102		ASM	Rancho Corralitos	70	7002	2	211	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
GP38551	15	16.8	9.48	510		1	800
GP38552	15.4	16.9	7.95	501		1	800
GP38553	19.1	17.6	9.65	502		1	800
GP38554	14.3	16.4	9.1	510		1	800
GP38555	12.6	16.7	8.56	510		1	800
GP38556	14.5	17.8	8.83	510		1	800
GP38557	14.1	18.5	10.9	510		1	800
GP38558	13.4	17.9	8.79	510		1	800
GP38559	12.1	14.5	7.86	510		1	800
GP38560	15	18.4	8.92	501		1	800
GP38561	16.3	19.3	9.03	504		1	800
GP38562	16.3	21.2	10.43	502		1	800
GP38563	12.3	13.4	6.43	-9		1	800
GP38564	9.4	17	14.55		510	1	704
GP38565	9.6	19.5	14.85		504	1	704
GP38566	6.7	12.2	10.45		510	1	704
GP38567	5.7	10.4	8.9		502	1	704
GP38568	7.2	12.1	10.53	509	510	2	701
GP38569	9.3	10	6.3	509		1	800
A-32146	13	19.8	9.08	509		1	800
A-32147	19.3	20.6	12.6	510		1	800
A-32148	5.2	10.3	10.14	605	510	2	701
A-32149	6.7	13	11.5		510	1	704
A-32150	22.5	24.5	12.8	502		1	800
A-32151	18.5	21.7	11.2	502		1	800
GP38527	10.2	19.1	7.53	502		1	800
20621	21	22.4	10.88	502		1	800
20623	16.1	18.1	9.12	510		1	800
20624	15.2	16.6	9.44	510		1	800
20626	15.2	15.4	10.2	510		1	800
20640	14.8	21.7	9.94	507, 508		1	800
20641	14.2	29.6	8.24	510		1	800
GP10064	16.9	18.1	9.54	502		1	800
GP10067	16.2	21	11.53	502		1	800
GP10084	25.7	26.6	10.7	502		1	800
GP10085	25.2	26.4	10.9	501		1	800
GP10097	13.6	16.7	8.47	510		1	800
GP10099	13.7	15.4	9.3	510		1	800
GP10101	13.6	15.9	8.75	501		1	800
GP10102	12.8	15.2	8.38	501		1	800

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
GP10103		ASM	Rancho Corralitos	70	7002	2	211	
GP10104		ASM	Rancho Corralitos	70	7002	2	211	
GP10105		ASM	Rancho Corralitos	70	7005	2	211	
GP10107		ASM	Rancho Corralitos	70	7002	2	211	
GP10108		ASM	Rancho Corralitos	70	7005	2	211	
GP10109		ASM	Rancho Corralitos	70	7002	2	211	
GP10111-X-1		ASM	Rancho Corralitos	70	7002	2	243	
GP10118		ASM	Rancho Corralitos	70	7002	2	213	
GP10121		ASM	Rancho Corralitos	70	7005	2	211	
GP10126		ASM	Rancho Corralitos	70	7014	2	290	
GP10132		ASM	Rancho Corralitos	70	7005	2	217	
GP10133		ASM	Rancho Corralitos	70	7002	2	217	
GP10134		ASM	Rancho Corralitos	70	7005	2	211	
GP10135		ASM	Rancho Corralitos	70	7005	2	211	
GP10138		ASM	Rancho Corralitos	70	7005	2	211	
GP10139		ASM	Rancho Corralitos	70	7002	2	211	
GP10142		ASM	Rancho Corralitos	70	7002	2	290	
GP10143		ASM	Rancho Corralitos	70	7002	2	290	
GP10144		ASM	Rancho Corralitos	70	7006	2	243	
GP10145		ASM	Rancho Corralitos	70	7006	2	211	
GP10149		ASM	Rancho Corralitos	70	7006	2	242	
GP10170		ASM	Rancho Corralitos	70	7002	1	106	
GP10175		ASM	Rancho Corralitos	70	7002	1	106	
GP10184		ASM	Rancho Corralitos	70	7001	7	711	5
GP10185		ASM	Rancho Corralitos	70	7005	7	711	5
GP10188		ASM	Rancho Corralitos	70	7001	7	711	5
GP10189		ASM	Rancho Corralitos	70	7005	7	710	1
GP10190		ASM	Rancho Corralitos	70	7005	7	711	5
GP10198		ASM	Rancho Corralitos	70	7001	7	720	4
GP10199		ASM	Rancho Corralitos	70	7001	7	720	6
GP3623		ASM	Rancho Corralitos	70	7002	2	211	
GP3625		ASM	Rancho Corralitos	70	7002	2	211	
GP3637		ASM	Rancho Corralitos	70	7001	2	213	
GP3655		ASM	Rancho Corralitos	70	7005	2	290	
GP3659		ASM	Rancho Corralitos	70	7001	2	213	
GP3663		ASM	Rancho Corralitos	70	7002	90	9000	
GP3671		ASM	Rancho Corralitos	70	7007	2	211	
GP3673		ASM	Rancho Corralitos	70	7006	2	242	
GP3677		ASM	Rancho Corralitos	70	7005	2	217	
GP3682		ASM	Rancho Corralitos	70	7001	7	720	6

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
GP10103	11	14	7.39	510		1	800
GP10104	22	24.4	10.83	501		1	800
GP10105	15	17	8.43	510		1	800
GP10107	22.7	26.5	10.2	502		1	800
GP10108	12.7	15	9.87	501		1	800
GP10109	18.1	21.6	10.58	501		1	800
GP10111-X-1	14.4	16.4	7.52	501		1	800
GP10118	18.5	21.3	10.35	510		1	800
GP10121	11.1	13	7.48	502		1	800
GP10126	11.7	16.3	8.17	510		1	800
GP10132	10.1	15.3	8.06	510		1	800
GP10133	9	13.2	7.38	510		1	800
GP10134	13	14.6	8.23	501		1	800
GP10135	12.8	14.9	8.19	508		1	800
GP10138	13.7	16	8.06	501		1	800
GP10139	16	17	8.56	504		1	800
GP10142	17.8	21.7	10.12	502		1	800
GP10143	19	21.8	11.4	510		1	800
GP10144	12.9	14	7.78	502		1	800
GP10145	11.3	3.4	7.53	504		1	800
GP10149	14	16	7.76	501		1	800
GP10170	8.7	5.7	13.69		510	1	704
GP10175	11.5	19.6	15.5		502	1	704
GP10184	17.5	30.8	11.86	502		1	800
GP10185	12.1	20.9	8.26	510		1	800
GP10188	13	21.8	7.8	510		1	800
GP10189	12.7	20.9	8.09	510		1	800
GP10190	9.8	20	9.35	604		1	800
GP10198	17	16	8.04	502		1	800
GP10199	21.7	16.4	9.81	510		1	800
GP3623	24.4	26.6	12.52	501		1	800
GP3625	26.8	27.8	14.12	504		1	800
GP3637	22.2	23.9	10.73	510		1	800
GP3655	19.8	20.3	10.28	510		1	800
GP3659	22.7	26.9	13.39	504		1	800
GP3663	4.9	14.7	13.37	510		1	704
GP3671	11.9	13.2	8.01	504		1	800
GP3673	22.8	27.5	12.26	501		1	800
GP3677	15	17.2	8.81	501		1	800
GP3682	15.2	13.7	8.51	502		1	800

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
GP3684		ASM	Rancho Corralitos	70	7009	7	720	6
GP3687		ASM	Rancho Corralitos	70	7001	7	720	2
GP3691		ASM	Rancho Corralitos	70	7001	2	211	
GP3692		ASM	Rancho Corralitos	70	7001	2	211	
GP3695		ASM	Rancho Corralitos	70	7001	2	211	
GP3700		ASM	Rancho Corralitos	70	7001	2	211	
GP3701		ASM	Rancho Corralitos	70	7001	2	213	
GP3704		ASM	Rancho Corralitos	70	7001	2	213	
GP3712		ASM	Rancho Corralitos	70	7001	7	720	2
GP3715		ASM	Rancho Corralitos	70	7001	7	711	5
GP3717		ASM	Rancho Corralitos	70	7001	7	711	5
GP3722		ASM	Rancho Corralitos	70	7002	7	720	8
GP3728		ASM	Rancho Corralitos	70	7001	7	720	3
GP3729		ASM	Rancho Corralitos	70	7001	7	720	8
GP3731		ASM	Rancho Corralitos	70	7001	7	720	2
GP3732		ASM	Rancho Corralitos	70	7001	7	720	3
GP3734		ASM	Rancho Corralitos	70	7001	7	720	2
GP3736		ASM	Rancho Corralitos	70	7001	2	211	
GP3737		ASM	Rancho Corralitos	70	7001	2	211	
GP3738		ASM	Rancho Corralitos	70	7001	2	211	
GP3739		ASM	Rancho Corralitos	70	7001	7	213	6
GP3740		ASM	Rancho Corralitos	70	7001	2	213	
GP3741		ASM	Rancho Corralitos	70	7001	2	211	
GP3747		ASM	Rancho Corralitos	70	7007	1	106	
GP3752		ASM	Rancho Corralitos	70	7011	1	106	
GP3754		ASM	Rancho Corralitos	70	7007	1	106	
GP3757		ASM	Rancho Corralitos	70	7002	1	103	
GP3758		ASM	Rancho Corralitos	70	7002	1	104	
GP3759		ASM	Rancho Corralitos	70	7007	1	103	
GP3761		ASM	Rancho Corralitos	70	7005	1	106	
GP3772		ASM	Rancho Corralitos	70	7001	7	711	5
GP3773		ASM	Rancho Corralitos	70	7001	7	712	7
GP3774		ASM	Rancho Corralitos	70	7001	2	217	
GP3775		ASM	Rancho Corralitos	70	7001	2	211	
GP3776		ASM	Rancho Corralitos	70	7001	2	213	
GP3778		ASM	Rancho Corralitos	70	7006	2	211	
GP3780		ASM	Rancho Corralitos	70	7002	2	211	
GP3781		ASM	Rancho Corralitos	70	7001	2	211	
GP3832		ASM	Rancho Corralitos	70	7005	7	711	5
GP3844		ASM	Rancho Corralitos	70	7001	2	230	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
GP3684	19	14.5	9.37	510		1	800
GP3687	16.3	14.2	8.19	502		1	800
GP3691	17.9	21.2	9.45	501		1	800
GP3692	15	16.2	8	502		1	800
GP3695	15.5	16.2	8.17	502		1	800
GP3700	20.2	21.1	10	502		1	800
GP3701	20.8	23	10.26	502		1	800
GP3704	17	20.2	10.1	502		1	800
GP3712	16.4	22.2	10.72	510		1	800
GP3715	13.3	19.8	11.98	510		1	800
GP3717	10.9	21	9.62	502		1	800
GP3722	5.7	15.4	5.89	605		1	800
GP3728	13.1	12.7	7.33	503		1	800
GP3729	7.5	7.1	1.6	-9		1	800
GP3731	12.5	29.1	8.94	501		1	800
GP3732	13.8	20.4	8.71	510		1	800
GP3734	14	24.4	10.4	-9		1	800
GP3736	25.5	27.2	11.98	510		1	800
GP3737	19.2	20.6	9.72	510		1	800
GP3738	19	20.8	9.48	501		1	800
GP3739	16.8	19.4	9.53	502		1	800
GP3740	24.9	25.7	12.58	510		1	800
GP3741	17.5	19.4	9.09	502		1	800
GP3747	13.2	22.2	18.2		510	1	704
GP3752	11.1	17.4	14.82	504	509	2	701
GP3754	4.2	9	7.64		510	1	704
GP3757	6	13.6	13.28	600		1	705
GP3758	9	18.9	17.2		510	1	704
GP3759	3.4	9.2	8.44	600	501	2	701
GP3761	7.3	12.4	9.95		502	1	704
GP3772	11.4	19.6	9.43	501		1	800
GP3773	8.5	16	7.3	502		1	800
GP3774	10.6	12.8	7.7	502		1	800
GP3775	9.5	10.7	7.11	510		1	800
GP3776	9.9	12	7.01	505		1	800
GP3778	13.9	15.4	8.25	510		1	800
GP3780	12	14	8.46	502		1	800
GP3781	12.4	15.7	8.5	510		1	800
GP3832	15.1	23	9.38	502		1	800
GP3844	19.4	21.1	10.95	502		1	800

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
GP3845		ASM	Rancho Corralitos	70	7001	2	211	
GP3846		ASM	Rancho Corralitos	70	7001	2	211	
GP3852		ASM	Rancho Corralitos	70	7001	2	211	
GP3859		ASM	Rancho Corralitos	70	7005	2	211	
GP3863		ASM	Rancho Corralitos	70	7001	7	720	6
GP3871		ASM	Rancho Corralitos	70	7001	2	213	
GP3875		ASM	Rancho Corralitos	70	7001	2	213	
GP3881		ASM	Rancho Corralitos	70	7001	2	213	
GP3882		ASM	Rancho Corralitos	70	7001	2	213	
GP3883		ASM	Rancho Corralitos	70	7001	2	211	
GP3884		ASM	Rancho Corralitos	70	7001	2	213	
GP3885		ASM	Rancho Corralitos	70	7001	2	211	
GP3886		ASM	Rancho Corralitos	70	7001	2	211	
GP3887		ASM	Rancho Corralitos	70	7005	2	211	
GP3962		ASM	Rancho Corralitos	70	7005	2	211	
GP3974		ASM	Rancho Corralitos	70	7001	2	213	
GP3977		ASM	Rancho Corralitos	70	7001	2	211	
GP3983		ASM	Rancho Corralitos	70	7002	1	104	
GP3987		ASM	Rancho Corralitos	70	7001	1	106	
GP3991		ASM	Rancho Corralitos	70	7007	1	106	
GP4012		ASM	Rancho Corralitos	70	7091	1	106	
GP4016		ASM	Rancho Corralitos	70	7002	1	106	
GP4017		ASM	Rancho Corralitos	70	7001	1	106	
GP4023		ASM	Rancho Corralitos	70	7005	2	211	
GP4028		ASM	Rancho Corralitos	70	7002	2	211	
GP4057		ASM	Rancho Corralitos	70	7001	2	211	
GP4074		ASM	Rancho Corralitos	70	7005	2	211	
GP4090		ASM	Rancho Corralitos	70	7005	2	211	
GP4104		ASM	Rancho Corralitos	70	7002	1	106	
GP4107		ASM	Rancho Corralitos	70	7001	1	106	
GP4127		ASM	Rancho Corralitos	70	7005	2	217	
GP4137		ASM	Rancho Corralitos	70	7005	2	218	
GP4138		ASM	Rancho Corralitos	70	7005	2	215	
GP4142		ASM	Rancho Corralitos	70	7005	2	230	
GP4151		ASM	Rancho Corralitos	70	7005	2	214	
14421		ASM	CH D:9:1(ASM)	70	7006	2	242	
14422		ASM	CH D:9:1(ASM)	70	7002	2	242	
14424		ASM	CH D:9:1(ASM)	70	7001	2	213	
14425		ASM	CH D:9:1(ASM)	70	7006	2	242	
14426		ASM	CH D:9:1(ASM)	70	7002	2	242	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
GP3845	19.1	22.2	11.28	502		1	800
GP3846	17.9	19.3	8.59	504		1	800
GP3852	13.5	14.3	8.29	502		1	800
GP3859	12.9	17.4	9.29	510		1	800
GP3863	19.1	16	9.1	510		1	800
GP3871	21	20.7	10.58	510		1	800
GP3875	14.3	17.6	8.68	510		1	800
GP3881	16.8	21.5	9.98	510		1	800
GP3882	20.3	21.9	10.33	510		1	800
GP3883	16.6	20.8	10.4	502		1	800
GP3884	20.3	23.7	12.42	510		1	800
GP3885	23	24.7	11.32	504		1	800
GP3886	22.4	25	11.9	502		1	800
GP3887	14.8	19.3	9.94	501		1	800
GP3962	8.6	11.8	6.74	510		1	800
GP3974	16.5	24	11.36	510		1	800
GP3977	26.9	27.9	12.31	501		1	800
GP3983	6.5	14	11.95		510	1	704
GP3987	9.1	13.7	11.21		510	1	704
GP3991	9.4	18.5	16.2		510	1	704
GP4012	11.3	18.5	15.2		500	1	704
GP4016	9.9	16.7	13.5		510	1	704
GP4017	10.7	20.6	17.3		510	1	704
GP4023	13.3	15	8.1	501		1	800
GP4028	14.2	16.1	9.04	501		1	800
GP4057	22.2	23.7	11.72	502		1	800
GP4074	13.8	16.6	9.55	510		1	800
GP4090	13.7	16.8	8.06	501		1	800
GP4104	8.6	18.7	17		510	1	704
GP4107	6.9	13.8	10.99		510	1	704
GP4127	16.4	19.4	9.33	501		1	800
GP4137	19.7	19.7	10.24	510		1	800
GP4138	13.4	18.8	9.98	510		1	800
GP4142	16.2	18	9.04	500		1	800
GP4151	15.2	18.3	8.03	504		1	800
14421	21.3	23.6	11.05	501		1	800
14422	20.3	23.6	10.6	501		1	800
14424	19.2	22.3	11.18	504		1	800
14425	25	26	12.03	501		1	800
14426	24.3	25.5	9.88	501		1	800

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
14427		ASM	CH D:9:1(ASM)	70	7014	2	211	
14428		ASM	CH D:9:1(ASM)	70	7001	2	213	
14430		ASM	CH D:9:1(ASM)	70	7001	2	213	
14431		ASM	CH D:9:1(ASM)	70	7005	2	211	
14432		ASM	CH D:9:1(ASM)	70	7005	2	211	
14433		ASM	CH D:9:1(ASM)	70	7002	2	211	
14434		ASM	CH D:9:1(ASM)	70	7001	2	213	
14435		ASM	CH D:9:1(ASM)	70	7002	2	219	
14436		ASM	CH D:9:1(ASM)	70	7002	1	106	
14437		ASM	CH D:9:1(ASM)	70	7002	1	106	
14439		ASM	CH D:9:1(ASM)	70	7001	1	101	
14440		ASM	CH D:9:1(ASM)	70	7001	1	106	
14441		ASM	CH D:9:1(ASM)	70	7001	1	106	
14442		ASM	CH D:9:1(ASM)	70	7005	2	215	
14444		ASM	CH D:9:1(ASM)	70	7011	2	213	
5719		ASM	CH D:9:1(ASM)	70	7001	2	211	
A-31503		ASM	CH D:9:1(ASM)	70	7015	2	210	
A-32116		ASM	CH D:9:1(ASM)	70	7001	2	213	
A-4130		ASM	CH D:9:1(ASM)	70	7001	7	710	1
GP316		ASM	CH D:9:1(ASM)	70	7002	2	213	
GP317		ASM	CH D:9:1(ASM)	70	7002	2	217	
GP318		ASM	CH D:9:1(ASM)	70	7002	7	710	1
GP319		ASM	CH D:9:1(ASM)	50	42	2	211	
GP43017		ASM	CH D:9:1(ASM)	70	7015	2	242	
GP43018		ASM	CH D:9:1(ASM)	70	7006	2	211	
GP4830		ASM	CH D:9:1(ASM)	70	7001	2	213	
GP885		ASM	CH D:9:1(ASM)	70	7001	2	217	
GP888		ASM	CH D:9:1(ASM)	70	7011	2	218	
GP889		ASM	CH D:9:1(ASM)	70	7005	2	211	
GP891		ASM	CH D:9:1(ASM)	70	7002	1	104	
GP892		ASM	CH D:9:1(ASM)	70	7002	2	213	
GP893		ASM	CH D:9:1(ASM)	70	7002	2	211	
GP895		ASM	CH D:9:1(ASM)	70	7006	2	211	
GP38529		ASM	CH E:14:5(GP)	70	7001	7	720	6
GP38530		ASM	CH E:14:5(GP)	70	7001	2	219	
GP38531		ASM	CH E:14:5(GP)	70	7001	2	211	
GP38532		ASM	CH E:14:5(GP)	70	7002	2	211	
GP38534		ASM	CH E:14:5(GP)	70	7002	1	106	
GP38535		ASM	CH E:14:5(GP)	70	7002	1	104	
GP38536		ASM	CH E:14:5(GP)	70	7002	1	106	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
14427	19.8	21.7	10.5	501		1	800
14428	17.5	20.8	10.8	502		1	800
14430	18.3	20.7	10.85	504		1	800
14431	17.1	19	10.22	502		1	800
14432	18.9	20.3	9.52	501		1	800
14433	15.8	18.8	9.19	501		1	800
14434	12.6	14.3	8.7	502		1	800
14435	13.9	17.7	9.96	510		1	800
14436	9.2	16.8	14.5		510	1	704
14437	11.7	22.3	16.4		510	1	704
14439	7.1	12	10.6	605	504	2	702
14440	5.8	9.1	7.33		502	1	704
14441	10	15.8	12.76		501	1	704
14442	8.2	10.8	6.17	510		1	800
14444	12	17.8	11.04	504		1	800
5719	19.3	21.6	11.04	502		1	800
A-31503	18	19.5	9.43	502		1	800
A-32116	19.6	19	8.95	502		1	800
A-4130	14.3	22.2	9.88	504		1	800
GP316	11.1	15.2	9.71	510		1	800
GP317	11.3	16	8.52	504		1	800
GP318	11.2	17.6	8.76	502		1	800
GP319	12.2	19	10.5	507		1	800
GP43017	20.9	30.2	12.82	509		1	800
GP43018	15.5	19	8.68	510		1	800
GP4830	21.6	23.6	20.06	504		1	800
GP885	13	17.1	7.71	502		1	800
GP888	12.8	18.8	8.2	510		1	800
GP889	11.3	13.8	8.03	510		1	800
GP891	8	14.8	13.67		510	1	704
GP892	14.2	16	8.16	501		1	800
GP893	13	15.9	9.7	502		1	800
GP895	14.7	16.1	8.41	501		1	800
GP38529	15.2	17.3	8.72	510		1	800
GP38530	23.2	23.9	11.81	510		1	800
GP38531	23.5	23.5	12.72	510		1	800
GP38532	15.3	18.3	9.31	504		1	800
GP38534	4.5	8.6	7.22		510	1	704
GP38535	5.7	12.9	11.47		510	1	704
GP38536	7.6	13.8	11.83		505	1	704

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
GP38537		ASM	CH E:14:5(GP)	70	7002	1	104	
GP38538		ASM	CH E:14:5(GP)	70	7002	1	106	
GP38460		ASM	CH E:5:8(GP)	70	7005	2	215	
GP38462-X-1		ASM	CH E:5:8(GP)	70	7001	7	710	1
GP38462-X-2		ASM	CH E:5:8(GP)	70	7001	7	720	6
GP38463		ASM	CH E:5:8(GP)	70	7009	7	710	1
GP38464		ASM	CH E:5:8(GP)	70	7001	7	720	3
GP38465		ASM	CH E:5:8(GP)	70	7001	7	720	6
GP38466		ASM	CH E:5:8(GP)	70	7002	7	720	6
GP38468		ASM	CH E:5:8(GP)	70	7002	7	712	7
GP38469		ASM	CH E:5:8(GP)	70	7001	7	720	6
GP38470		ASM	CH E:5:8(GP)	70	7005	2	211	
GP38471		ASM	CH E:5:8(GP)	70	7005	2	211	
GP38472		ASM	CH E:5:8(GP)	70	7005	2	217	
GP38473		ASM	CH E:5:8(GP)	70	7005	2	217	
GP38475		ASM	CH E:5:8(GP)	70	7001	7	711	5
GP38479		ASM	CH E:5:8(GP)	70	7002	2	211	
GP38481		ASM	CH E:5:8(GP)	70	7005	2	215	
GP38482		ASM	CH E:5:8(GP)	70	7001	2	211	
GP38483		ASM	CH E:5:8(GP)	70	7002	2	211	
GP38484		ASM	CH E:5:8(GP)	70	7001	2	211	
GP38485		ASM	CH E:5:8(GP)	70	7005	2	217	
GP38486		ASM	CH E:5:8(GP)	70	7007	2	290	
GP38487		ASM	CH E:5:8(GP)	70	7005	2	213	
GP38488		ASM	CH E:5:8(GP)	70	7014	2	217	
GP38489		ASM	CH E:5:8(GP)	70	7006	2	211	
GP38490		ASM	CH E:5:8(GP)	70	7090	2	211	
GP38491		ASM	CH E:5:8(GP)	70	7005	7	711	5
GP38492-X-1		ASM	CH E:5:8(GP)	70	7001	1	106	
GP38493		ASM	CH E:5:8(GP)	70	7005	1	106	
GP38494		ASM	CH E:5:8(GP)	70	7009	1	106	
GP38495		ASM	CH E:5:8(GP)	70	7005	1	106	
GP38496		ASM	CH E:5:8(GP)	70	7005	1	106	
GP38497		ASM	CH E:5:8(GP)	70	7001	1	106	
GP38498		ASM	CH E:5:8(GP)	70	7090	7	720	6
GP38522		ASM	CH E:5:8(GP)	70	7001	1	106	
GP40049		ASM	CH E:5:8(GP)	70	7001	7	711	5
GP39935		ASM	CH E:5:9(GP)	70	7011	2	211	
GP38525		ASM	CH I:9:11(GP)	70	7005	2	231	
GP38526		ASM	CH I:9:11(GP)	70	7005	2	211	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
GP38537	6.1	12.3	11.15		510	1	704
GP38538	9.6	17.7	14.97		510	1	704
GP38460	14.1	19.3	9.89	504		1	800
GP38462-X-1	20.1	19.7	12.5	502		1	800
GP38462-X-2	19.3	17.4	8.63	510		1	800
GP38463	14.7	14.2	9.81	500		1	800
GP38464	19	15.5	10.81	502		1	800
GP38465	15.4	16.8	7.34	510		1	800
GP38466	18.1	16.8	10.93	510		1	800
GP38468	13.8	29	10.09	510		1	800
GP38469	14.9	13.4	8.43	510		1	800
GP38470	17.5	20.8	9.53	502		1	800
GP38471	20.5	21.4	11.08	501		1	800
GP38472	15.7	21	8.78	501		1	800
GP38473	14.3	16.3	8.55	510		1	800
GP38475	11.9	14.1	8.37	502		1	800
GP38479	14.5	17.1	8.98	510		1	800
GP38481	13.5	18.7	9.42	500		1	800
GP38482	22.1	24.5	11.64	510		1	800
GP38483	13	15.1	8.23	510		1	800
GP38484	15	17.4	9.46	510		1	800
GP38485	12.8	16.6	8.49	510		1	800
GP38486	12.2	17.3	10.44	510		1	800
GP38487	11.3	4.3	6.78	504		1	800
GP38488	11.3	13.7	8.43	510		1	800
GP38489	12.8	14.4	8.23	501		1	800
GP38490	12.1	14	10.83	510		1	800
GP38491	10.3	15	7.59	501		1	800
GP38492-X-1	10.7	16.6	12		504	1	704
GP38493	9.3	16.8	14.15		510	1	704
GP38494	7.3	15.4	13.67		500	1	704
GP38495	9	19	15.25		510	1	704
GP38496	10.2	17.2	14.42		510	1	704
GP38497	8.8	13	11.07		501	1	704
GP38498	9	8.3	4.95	510		1	800
GP38522	5.9	10.7	9.19		510	1	704
GP40049	19.8	24.9	11.56	510		1	800
GP39935	8.5	11.7	9.39	602		1	801
GP38525	12.2	15.8	9.27	502		1	800
GP38526	12.8	14.2	7.3	510		1	800

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
GP40042		ASM	CH I:9:11(GP)	70	7091	2	211	
GP40043		ASM	CH I:9:11(GP)	70	7005	2	211	
GP40044		ASM	CH I:9:11(GP)	70	7005	2	211	
GP40045		ASM	CH I:9:11(GP)	70	7005	7	710	1
GP53509		ASM	CH I:9:11(GP)	70	7091	1	102	
90-5-1378	7626CS	EAC	Curtis	50	90	1	121	
90-5-1490	7624CS	EAC	Curtis	50	31	1	106	
90-5-1609	7493CS	EAC	Curtis	50	34	1	106	
90-5-1617	7496CS	EAC	Curtis	50	80	2	211	
91-1-51	7623CS	EAC	Curtis	50	72	1	121	
90-28-14	6147D	EAC	Dinwiddie	50	82	2	211	
90-5-797	5014D	EAC	Dinwiddie	50	82	2	211	
90-5-798	6221D	EAC	Dinwiddie	50	78	1	121	
90-5-799	6156D	EAC	Dinwiddie	50	80	2	211	
90-5-802	6195D	EAC	Dinwiddie	50	80	2	211	
90-5-811	5054D	EAC	Dinwiddie	50	79	1	121	
90-5-812	6150D	EAC	Dinwiddie	50	90	1	121	
90-5-813	6163D	EAC	Dinwiddie	50	90	1	121	
90-5-817	6194D	EAC	Dinwiddie	50	90	1	121	
90-5-818	6190D	EAC	Dinwiddie	50	79	1	121	
90-5-819	6219D	EAC	Dinwiddie	50	90	1	124	
90-5-827	6010D	EAC	Dinwiddie	50	31	1	106	
90-5-828	6143D	EAC	Dinwiddie	50	90	1	121	
90-5-829	6140D	EAC	Dinwiddie	50	61	1	121	
90-5-830	6146D	EAC	Dinwiddie	50	79	1	121	
90-5-834	6049D	EAC	Dinwiddie	50	72	1	121	
90-5-835	6092D	EAC	Dinwiddie	50	79	1	121	
90-5-836	6189D	EAC	Dinwiddie	50	81	2	211	
90-5-837	6145D	EAC	Dinwiddie	50	82	2	219	
90-5-838	4073D	EAC	Dinwiddie	50	90	1	121	
90-5-839	6061D	EAC	Dinwiddie	50	82	2	211	
90-5-84	6149D	EAC	Dinwiddie	50	90	1	121	
90-5-840	6216D	EAC	Dinwiddie	50	79	1	121	
94-1-49	6148D	EAC	Dinwiddie	50	90	1	121	
48165		MIAC	Joyce Well	70	7001	1	106	
48170		MIAC	Joyce Well	70	7001	2	211	
1385K	1385K	EAC	Kuykendall	50	78	1	121	
748K	748K	EAC	Kuykendall	50	80	2	211	
90-5-100	1058K	EAC	Kuykendall	50	80	2	211	
90-5-1001	1386K	EAC	Kuykendall	50	81	2	211	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
GP40042	12.5	15.1	7.29	500		1	800
GP40043	13.7	15.5	7.86	504		1	800
GP40044	13.5	17.6	9.18	502		1	800
GP40045	12.4	23.1	9.25	510		1	800
GP53509	2.3	13.4	0	605	605	2	703
90-5-1378	10.8	18.5	17.5		510	1	704
90-5-1490	8.9	19.8	17.9	610		1	705
90-5-1609	6.6	13.5	12		510	1	704
90-5-1617	8.3	20.8	6.3	504		1	800
91-1-51	14.6	32.8	29.1	504	510	2	702
90-28-14	24.3	37.5	19	508		1	800
90-5-797	30.6	49.7	22.3	508		1	800
90-5-798	18.9	37.1	32		503	1	704
90-5-799	11.1	17.1	10.1	505		1	800
90-5-802	27.6	39.2	18.1	506		1	800
90-5-811	17.9	34.4	32.3		507	1	704
90-5-812	14.1	30.2	26.5		500	1	704
90-5-813	19.3	41	34.9		503	1	704
90-5-817	16.1	36	31.5		507	1	704
90-5-818	18.2	42.2	37.3		507	1	704
90-5-819	15.3	35.9	32.6		500	1	704
90-5-827	10.5	26.3	23.7	503		1	705
90-5-828	18.6	39	35.3		507	1	704
90-5-829	14.8	30.9	27.1	607		1	705
90-5-830	13.5	25.6	23.4	606		1	705
90-5-834	18.1	35.7	28.9	510	504	2	702
90-5-835	18.7	37.7	33.4		507	1	704
90-5-836	21.6	39.7	16.5	507		1	800
90-5-837	15.1	23	12.5	507		1	800
90-5-838	17.6	38	33.2		507	1	704
90-5-839	24.1	40.3	17.5	508		1	800
90-5-84	17.6	32.4	28.4		507	1	704
90-5-840	19.3	41.1	35.7		507	1	704
94-1-49	16.1	34	29.3		507	1	704
48165	14.4	30	26.5		510	1	704
48170	23	26.9	14.3	503		1	800
1385K	17.2	33.5	30.1		505	1	704
748K	22.9	33.7	16.3	510		1	800
90-5-100	22.5	35.4	15.7	510		1	800
90-5-1001	33.6	45	18.2	508		1	800

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
90-5-1002	1387K	EAC	Kuykendall	50	80	2	211	
90-5-1004	1067K	EAC	Kuykendall	50	81	2	210	
90-5-1005	1637K	EAC	Kuykendall	50	80	2	213	
90-5-1007	6142K	EAC	Kuykendall	50	61	1	121	
90-5-1008	4046K	EAC	Kuykendall	50	81	2	211	
90-5-1009	1697K	EAC	Kuykendall	50	61	1	121	
90-5-101	773K	EAC	Kuykendall	50	80	2	210	
90-5-1010	890K	EAC	Kuykendall	50	80	2	211	
90-5-1012	1459K	EAC	Kuykendall	50	80	2	211	
90-5-1013	1388K	EAC	Kuykendall	50	82	2	211	
90-5-1014	1428K	EAC	Kuykendall	50	80	2	211	
90-5-1018	945K	EAC	Kuykendall	50	81	2	211	
90-5-1019	1571K	EAC	Kuykendall	50	61	1	121	
90-5-102	3015K	EAC	Kuykendall	50	82	2	211	
90-5-1025	1570K	EAC	Kuykendall	50	61	1	121	
90-5-1029	1713K	EAC	Kuykendall	50	82	2	230	
90-5-1030	1479K	EAC	Kuykendall	50	80	2	210	
90-5-1031	1605K	EAC	Kuykendall	50	81	2	211	
90-5-1035	1818K	EAC	Kuykendall	50	82	2	211	
90-5-1038	1717K	EAC	Kuykendall	70	7000	2	211	
90-5-1040	3050K	EAC	Kuykendall	50	82	2	211	
90-5-1048	1447K	EAC	Kuykendall	50	82	2	211	
90-5-1049	3044K	EAC	Kuykendall	50	61	1	121	
90-5-1053	6157K	EAC	Kuykendall	50	82	2	211	
90-5-1054	3027K	EAC	Kuykendall	70	7000	2	211	
90-5-1055	1416K	EAC	Kuykendall	50	82	2	211	
90-5-1059	1414K	EAC	Kuykendall	50	61	1	121	
90-5-1063	1413K	EAC	Kuykendall	50	61	1	121	
90-5-1064	1674K	EAC	Kuykendall	50	81	2	211	
90-5-1065	1418K	EAC	Kuykendall	50	80	2	242	
90-5-1066	803K	EAC	Kuykendall	50	80	2	211	
90-5-1090	1874K	EAC	Kuykendall	50	82	2	211	
90-5-1092	865K	EAC	Kuykendall	50	61	1	121	
90-5-1093	1450K	EAC	Kuykendall	70	7091	2	211	
90-5-1094	1476K	EAC	Kuykendall	50	31	1	106	
90-5-1103	1430K	EAC	Kuykendall	50	31	1	106	
90-5-1104	1685K	EAC	Kuykendall	50	61	1	124	
90-5-1106	1686K	EAC	Kuykendall	50	61	1	121	
90-5-1110	887K	EAC	Kuykendall	50	80	7	790	-9
90-5-1120	1628K	EAC	Kuykendall	50	72	1	121	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
90-5-1002	26.3	42.5	20.9	506		1	800
90-5-1004	15.1	15	7.5	507		1	800
90-5-1005	12.8	13.9	8.3	510		1	800
90-5-1007	15.1	30.7	28.8	601		1	705
90-5-1008	27.3	42.3	19.6	507, 508		1	800
90-5-1009	16.6	33.7	29.7	601		1	705
90-5-101	23.1	33.9	15.2	503		1	800
90-5-1010	29.5	38.7	18.3	504		1	800
90-5-1012	30.9	36	16	504		1	800
90-5-1013	29.6	39	16.1	508		1	800
90-5-1014	22.1	35.8	18.3	500		1	800
90-5-1018	33.9	52.7	21.7	507, 508		1	800
90-5-1019	14.8	33.9	30.1	602		1	705
90-5-102	30.1	38.9	17.8	508		1	800
90-5-1025	15	28.4	26.3	606		1	705
90-5-1029	14.4	21.6	10.8	507		1	800
90-5-1030	15.6	19.2	9.4	501		1	800
90-5-1031	28.1	39.3	19.1	500		1	800
90-5-1035	23.8	35.9	16.5	508		1	800
90-5-1038	38.6	41.2	23.7	510		1	800
90-5-1040	18.8	32.2	15.6	507		1	800
90-5-1048	28.1	41.6	20.3	508		1	800
90-5-1049	16.5	32.2	30.2	607		1	705
90-5-1053	25.6	35.9	19.9	508		1	800
90-5-1054	35.4	39.1	23.1	508		1	800
90-5-1055	26.6	44.6	22.2	509		1	800
90-5-1059	14.9	32.9	31.5	600		1	705
90-5-1063	16.9	30.9	24.3	606		1	705
90-5-1064	15.6	25.8	13.5	507		1	800
90-5-1065	28.8	32.9	14.9	503		1	800
90-5-1066	17.1	26.8	12.8	506		1	800
90-5-1090	27.2	41.3	16	507		1	800
90-5-1092	15.9	33.3	29.6	607		1	705
90-5-1093	16.1	18.5	11	510		1	800
90-5-1094	14.6	27.5	24.5	604		1	705
90-5-1103	11.6	23.4	21.5	603		1	705
90-5-1104	13.3	30.6	26	601		1	705
90-5-1106	15.1	26.5	25	601		1	705
90-5-1110	15.6	20.1	9	504		1	800
90-5-1120	13.2	23	21.2	507	510	2	702

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
90-5-1121	1478K	EAC	Kuykendall	50	5005	1	106	
90-5-1142	1533K	EAC	Kuykendall	50	82	2	230	
90-5-1144	1522K	EAC	Kuykendall	50	61	1	124	
90-5-1145	1429K	EAC	Kuykendall	50	31	1	106	
90-5-1155	951K	EAC	Kuykendall	50	61	1	121	
90-5-1156	1687K	EAC	Kuykendall	70	7005	1	106	
90-5-1157	771K	EAC	Kuykendall	50	61	1	121	
90-5-1176	1057K	EAC	Kuykendall	50	80	2	211	
90-5-1177	3043K	EAC	Kuykendall	50	61	1	121	
90-5-1178	1714K	EAC	Kuykendall	50	31	1	104	
90-5-1179	1688K	EAC	Kuykendall	50	41	1	106	
90-5-1195	1446K	EAC	Kuykendall	50	31	1	106	
90-5-1197	6162K	EAC	Kuykendall	70	7005	1	106	
90-5-1199	1694K	EAC	Kuykendall	50	61	1	121	
90-5-1200	1475K	EAC	Kuykendall	50	31	1	104	
90-5-1213	1420K	EAC	Kuykendall	70	7005	1	106	
90-5-1214	888K	EAC	Kuykendall	70	7005	1	106	
90-5-1224	1307K	EAC	Kuykendall	70	7005	1	106	
90-5-1225	930K	EAC	Kuykendall	70	7005	1	106	
90-5-1226	1672K	EAC	Kuykendall	50	82	2	211	
90-5-1227	1412K	EAC	Kuykendall	50	61	1	121	
90-5-1228	1389K	EAC	Kuykendall	50	82	2	211	
90-5-1229	1453K	EAC	Kuykendall	50	81	2	211	
90-5-1232	1382K	EAC	Kuykendall	50	82	2	211	
90-5-1233	750K	EAC	Kuykendall	50	81	2	211	
90-5-1235	1875K	EAC	Kuykendall	50	82	2	230	
90-5-1236	3014K	EAC	Kuykendall	50	80	2	211	
90-5-1237	912K	EAC	Kuykendall	50	81	2	211	
90-5-1480	932K	EAC	Kuykendall	50	31	1	104	
90-5-1489	1559K	EAC	Kuykendall	50	31	1	106	
90-5-1492	1720K	EAC	Kuykendall	50	31	1	106	
90-5-1505	1056K	EAC	Kuykendall	50	81	2	211	
90-5-1625	1775K	EAC	Kuykendall	50	82	2	211	
90-5-85	1621K	EAC	Kuykendall	50	61	1	121	
90-5-88	766K	EAC	Kuykendall	50	31	1	106	
90-5-933	1477K	EAC	Kuykendall	50	31	1	106	
90-5-97	1873K	EAC	Kuykendall	50	82	2	211	
90-5-982	1152K	EAC	Kuykendall	50	81	2	211	
90-5-985	6144K	EAC	Kuykendall	50	61	1	121	
90-5-986	770K	EAC	Kuykendall	50	80	2	211	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
90-5-1121	13.5	28.9	26.9	606		1	705
90-5-1142	12.9	20.3	12	509		1	800
90-5-1144	10.1	19.6	18	607		1	705
90-5-1145	14.9	29.7	27.2	608		1	705
90-5-1155	18.5	33.6	21.8	607		1	705
90-5-1156	13.6	26.1	24		510	1	704
90-5-1157	13.1	28.7	26.2	607		1	705
90-5-1176	12.9	17.1	8	510		1	800
90-5-1177	10	19.8	18	602		1	705
90-5-1178	6.3	19.8	18.5	607		1	705
90-5-1179	12.1	23.4	20	601		1	705
90-5-1195	13.1	24.8	22.5	601		1	705
90-5-1197	12.3	23.3	21.3	600	510	2	701
90-5-1199	16.1	31.6	29.1	607		1	705
90-5-1200	9.7	17.4	16.6	501		1	705
90-5-1213	13.1	26	24.2		510	1	704
90-5-1214	13.1	24.5	22		510	1	704
90-5-1224	13.4	26.6	25		510	1	704
90-5-1225	13.1	24.9	21.7		510	1	704
90-5-1226	24.6	37.9	16.3	507, 508		1	800
90-5-1227	18.1	34	30.5	601		1	705
90-5-1228	26.7	46.8	23.5	504		1	800
90-5-1229	27.6	39.5	17.5	507, 508		1	800
90-5-1232	35	51.1	25.7	508		1	800
90-5-1233	28.6	40.4	18.3	507, 508		1	800
90-5-1235	31.1	38.8	17.8	508		1	800
90-5-1236	24.4	36.2	15.6	504		1	800
90-5-1237	26.1	37.5	16.3	509		1	800
90-5-1480	7.6	19.4	18.6	610		1	705
90-5-1489	8.9	19.1	17.5	601		1	705
90-5-1492	8.9	16.9	15.5	608		1	705
90-5-1505	14.6	23.2	10.4	509		1	800
90-5-1625	32.7	48.5	21.5	510		1	800
90-5-85	15.8	30.8	28.6	606		1	705
90-5-88	12.1	25.3	2.2	602		1	705
90-5-933	17.2	33	28.2	602		1	705
90-5-97	24.5	36.6	16.3	509		1	800
90-5-982	9.6	13.8	9.6	507, 508		1	800
90-5-985	14.8	28	26.6	601		1	705
90-5-986	29.9	38.7	20.9	504		1	800

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
90-5-987	6139K	EAC	Kuykendall	50	81	2	211	
90-5-99	922K	EAC	Kuykendall	50	80	2	211	
90-5-990	6069K	EAC	Kuykendall	50	82	2	211	
90-5-992	1718K	EAC	Kuykendall	50	80	2	211	
90-5-995	1602K	EAC	Kuykendall	50	80	2	211	
90-5-996	1516K	EAC	Kuykendall	50	82	2	211	
91-1-8	1721K	EAC	Kuykendall	50	80	2	211	
17972		MIAC	Ormand Village	50	80	7	710	1
17973		MIAC	Ormand Village	50	82	2	242	
17976		MIAC	Ormand Village	50	80	2	243	
17980		MIAC	Ormand Village	50	80	2	211	
17981		MIAC	Ormand Village	50	41	1	121	
46627		MIAC	Ormand Village	50	62	1	121	
46628		MIAC	Ormand Village	50	90	1	121	
441	90-5-903	EAC	Nine Mile	50	76	1	121	
709	90-5-900	EAC	Nine Mile	50	78	1	121	
711	711	EAC	Nine Mile	50	82	2	211	
90-5-794	710	EAC	Nine Mile	50	82	2	211	
90-5-851	417	EAC	Nine Mile	50	75	1	121	
90-5-870	587	EAC	Nine Mile	50	31	1	101	
90-5-871	586	EAC	Nine Mile	50	61	1	121	
90-5-872	448	EAC	Nine Mile	50	61	1	124	
90-5-879	631	EAC	Nine Mile	50	31	1	104	
90-5-880	592	EAC	Nine Mile	50	31	1	106	
90-5-91	626	EAC	Nine Mile	50	72	1	121	
90-5-915	449	EAC	Nine Mile	50	82	2	211	
90-5-934	589	EAC	Nine Mile	50	85	2	211	
90-5-935	414	EAC	Nine Mile	50	73	1	121	
90-5-936	708	EAC	Nine Mile	50	81	2	211	
90-5-943	443	EAC	Nine Mile	50	76	1	121	
90-5-944	627	EAC	Nine Mile	50	80	2	211	
90-5-945	442	EAC	Nine Mile	50	80	2	211	
90-5-946	629	EAC	Nine Mile	50	82	2	211	
90-5-98	447	EAC	Nine Mile	50	82	2	211	
GP11210		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11212		ASM	Roosevelt:5:10(GP)	50	31	1	103	
GP11213		ASM	Roosevelt:5:10(GP)	50	41	1	105	
GP11214		ASM	Roosevelt:5:10(GP)	50	41	1	105	
GP11215		ASM	Roosevelt:5:10(GP)	50	80	2	242	
GP11239		ASM	Roosevelt:5:10(GP)	50	31	1	106	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
90-5-987	27.5	46.6	18.2	509		1	800
90-5-99	21.7	35.2	17.6	506		1	800
90-5-990	27.4	43.3	20.8	509		1	800
90-5-992	26.1	37.1	16.5	504		1	800
90-5-995	22.1	36.5	15.6	510		1	800
90-5-996	24.7	39.3	18.6	508		1	800
91-1-8	32.9	49.5	25.2	500		1	800
17972	16.3	25.9	13.1	504		1	800
17973	16.1	21.2	11.7	509		1	800
17976	11.6	16.5	9.8	501		1	800
17980	23.1	36	15.7	502		1	800
17981	15.4	30.7	27.6	509	507	2	701
46627	13.2	28.6	26.5	607		1	705
46628	16.6	31.5	28.7		504	1	704
441	18.8	33	29.5	508	507	2	702
709	16.8	37.5	32.7		510	1	704
711	33.7	47.8	23.1	507		1	800
90-5-794	30.4	46.6	18.4	508		1	800
90-5-851	15.1	31.2	25.7		502	1	704
90-5-870	3.3	8.8	7.1	606		1	705
90-5-871	16.6	31.4	29.1	607		1	705
90-5-872	18	36.3	31.1	606		1	705
90-5-879	6.4	13.9	13.1	603		1	705
90-5-880	15.7	30.7	27	607		1	705
90-5-91	18.1	37.9	33.9	508	510	2	702
90-5-915	19.6	33	13.7	507		1	800
90-5-934	27	40	17.7	501		1	800
90-5-935	23	35.9	28.1	502	507	2	702
90-5-936	23.1	36.8	17.5	509		1	800
90-5-943	18.1	37.8	33.2		508	1	704
90-5-944	16.3	22	10.5	508		1	800
90-5-945	16.9	28.8	15.9	503		1	800
90-5-946	21.6	38.6	13.2	507		1	800
90-5-98	28.1	43.7	15.7	509		1	800
GP11210	0	0	0	600		1	705
GP11212	0	0	0	505		1	705
GP11213	0	0	0	501	505	2	702
GP11214	0	0	0	505	504	2	703
GP11215	0	0	0	500	502	2	803
GP11239	0	0	0	600		1	705

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
GP11240		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11245		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11247		ASM	Roosevelt:5:10(GP)	50	41	1	106	
GP11248		ASM	Roosevelt:5:10(GP)	50	5005	1	104	
GP11253		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11254		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11255		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11257-X-1		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11257-X-2		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11258		ASM	Roosevelt:5:10(GP)	50	31	1	103	
GP11259		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11260		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11261		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11262		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11264		ASM	Roosevelt:5:10(GP)	50	31	1	103	
GP11265		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11266		ASM	Roosevelt:5:10(GP)	50	85	2	214	
GP11267		ASM	Roosevelt:5:10(GP)	50	81	2	243	
GP11268		ASM	Roosevelt:5:10(GP)	50	80	2	214	
GP11269		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11271		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11281		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11282		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11283		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11284		ASM	Roosevelt:5:10(GP)	50	41	1	106	
GP11285		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11286		ASM	Roosevelt:5:10(GP)	50	80	2	218	
GP11287		ASM	Roosevelt:5:10(GP)	50	80	7	710	1
GP11293		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11297		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11302		ASM	Roosevelt:5:10(GP)	50	80	2	218	
GP11303		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11304		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11306		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11309		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11316		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11317		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11319		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11320		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11343		ASM	Roosevelt:5:10(GP)	50	31	1	103	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
GP11240	0	0	0	600	502	2	701
GP11245	0	0	0	613		1	705
GP11247	0	0	0	613	501	2	701
GP11248	0	0	0	612		1	705
GP11253	0	0	0	610		1	705
GP11254	0	0	0	504		1	705
GP11255	0	0	0	601		1	705
GP11257-X-1	0	0	0	600		1	705
GP11257-X-2	0	0	0	604		1	705
GP11258	0	0	0	601		1	705
GP11259	0	0	0	503		1	705
GP11260	0	0	0	610		1	705
GP11261	0	0	0	607		1	705
GP11262	0	0	0	601		1	705
GP11264	0	0	0	614		1	705
GP11265	0	0	0	607		1	705
GP11266	0	0	0	501		1	800
GP11267	0	0	0	509		1	800
GP11268	0	0	0	501		1	800
GP11269	0	0	0	601		1	705
GP11271	0	0	0	504	507	2	701
GP11281	0	0	0	601		1	705
GP11282	0	0	0	505		1	705
GP11283	0	0	0	612		1	705
GP11284	0	0	0	601	501	2	701
GP11285	0	0	0	601		1	705
GP11286	0	0	0	503		1	800
GP11287	0	0	0	502		1	800
GP11293	0	0	0	601		1	705
GP11297	0	0	0	601		1	705
GP11302	0	0	0	510		1	800
GP11303	0	0	0	600		1	705
GP11304	0	0	0	600		1	705
GP11306	0	0	0	614		1	705
GP11309	0	0	0	606		1	705
GP11316	0	0	0	607	510	2	701
GP11317	0	0	0	601		1	705
GP11319	0	0	0	504		1	705
GP11320	0	0	0	613		1	705
GP11343	0	0	0	605	504	2	701

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
GP11344		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11345		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11346		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11348		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11360		ASM	Roosevelt:5:10(GP)	50	81	2	211	
GP11361		ASM	Roosevelt:5:10(GP)	50	31	1	122	
GP11362		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11363		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11364		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11365		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11366		ASM	Roosevelt:5:10(GP)	50	41	1	103	
GP11367		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11369		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11370		ASM	Roosevelt:5:10(GP)	50	41	1	106	
GP11371		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11373		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11375		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11377		ASM	Roosevelt:5:10(GP)	50	80	2	218	
GP11382		ASM	Roosevelt:5:10(GP)	50	80	2	218	
GP11383		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11384		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11386		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11415		ASM	Roosevelt:5:10(GP)	50	41	1	106	
GP11416		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11417		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11419		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11420		ASM	Roosevelt:5:10(GP)	50	81	2	218	
GP11426		ASM	Roosevelt:5:10(GP)	50	41	1	105	
GP11427		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11428		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11429		ASM	Roosevelt:5:10(GP)	50	80	2	214	
GP11435		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11437		ASM	Roosevelt:5:10(GP)	50	41	1	106	
GP11438		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11439		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11440		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11472		ASM	Roosevelt:5:10(GP)	50	80	2	213	
GP11475		ASM	Roosevelt:5:10(GP)	50	80	2	214	
GP11476		ASM	Roosevelt:5:10(GP)	50	81	2	211	
GP11477		ASM	Roosevelt:5:10(GP)	50	31	1	104	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
GP11344	0	0	0	614		1	705
GP11345	0	0	0	502		1	705
GP11346	0	0	0	600		1	705
GP11348	0	0	0	614		1	705
GP11360	0	0	0	507, 508		1	800
GP11361	0	0	0	501		1	705
GP11362	0	0	0	604		1	705
GP11363	0	0	0	503		1	705
GP11364	0	0	0	604		1	705
GP11365	0	0	0	601		1	705
GP11366	0	0	0	510	509	2	701
GP11367	0	0	0	504		1	705
GP11369	0	0	0	605		1	705
GP11370	0	0	0	607	510	2	701
GP11371	0	0	0	613		1	705
GP11373	0	0	0	505		1	705
GP11375	0	0	0	601		1	705
GP11377	0	0	0	504		1	800
GP11382	0	0	0	504		1	800
GP11383	0	0	0	502		1	705
GP11384	0	0	0	602		1	705
GP11386	0	0	0	604		1	705
GP11415	0	0	0	600	509	2	701
GP11416	0	0	0	601		1	705
GP11417	0	0	0	600		1	705
GP11419	0	0	0	607		1	705
GP11420	0	0	0	509		1	800
GP11426	0	0	0	507	508	2	701
GP11427	0	0	0	614		1	705
GP11428	0	0	0	601		1	705
GP11429	0	0	0	510		1	800
GP11435	0	0	0	604		1	705
GP11437	0	0	0	503	510	2	702
GP11438	0	0	0	503	510	2	702
GP11439	0	0	0	609		1	705
GP11440	0	0	0	610		1	705
GP11472	0	0	0	500		1	800
GP11475	0	0	0	510		1	800
GP11476	0	0	0	507		1	800
GP11477	0	0	0	607		1	705

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
GP11479		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11480		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11481		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11482		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11483		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11484		ASM	Roosevelt:5:10(GP)	50	31	1	101	
GP11486		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11487		ASM	Roosevelt:5:10(GP)	50	41	1	106	
GP11492		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11493		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11494		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11501		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11502		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11506		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11508		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11509		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11510		ASM	Roosevelt:5:10(GP)	50	31	1	104	
GP11513		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11514		ASM	Roosevelt:5:10(GP)	50	31	1	106	
GP11928		ASM	Roosevelt:5:10(GP)	50	85	2	214	
GP12836		ASM	Roosevelt:5:10(GP)	50	80	2	230	
GP7725		ASM	Roosevelt:9:11(GP)	50	62	1	121	
GP7728		ASM	Roosevelt:9:11(GP)	50	31	1	103	
GP7729		ASM	Roosevelt:9:11(GP)	50	31	1	106	
GP7730		ASM	Roosevelt:9:11(GP)	50	31	1	104	
GP7731		ASM	Roosevelt:9:11(GP)	50	80	2	214	
GP7732		ASM	Roosevelt:9:11(GP)	50	63	2	230	
GP7736		ASM	Roosevelt:9:11(GP)	50	31	1	106	
GP7737		ASM	Roosevelt:9:11(GP)	50	31	1	104	
GP7738		ASM	Roosevelt:9:11(GP)	50	31	1	104	
GP7739		ASM	Roosevelt:9:11(GP)	50	31	1	106	
GP7740		ASM	Roosevelt:9:11(GP)	50	31	1	106	
GP7741		ASM	Roosevelt:9:11(GP)	50	31	1	104	
GP7742		ASM	Roosevelt:9:11(GP)	50	31	1	106	
GP7743		ASM	Roosevelt:9:11(GP)	50	41	1	106	
GP7744		ASM	Roosevelt:9:11(GP)	50	31	1	104	
GP7745		ASM	Roosevelt:9:11(GP)	50	82	2	214	
GP7746		ASM	Roosevelt:9:11(GP)	50	42	90	9000	
GP7771		ASM	Roosevelt:9:11(GP)	50	31	1	104	
GP7772		ASM	Roosevelt:9:11(GP)	50	31	1	104	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
GP11479	0	0	0	504		1	705
GP11480	0	0	0	609		1	705
GP11481	0	0	0	609		1	705
GP11482	0	0	0	601		1	705
GP11483	0	0	0	607		1	705
GP11484	0	0	0	613		1	705
GP11486	0	0	0	601		1	705
GP11487	0	0	0	609	509	2	703
GP11492	0	0	0	600		1	705
GP11493	0	0	0	607		1	705
GP11494	0	0	0	600		1	705
GP11501	0	0	0	607		1	705
GP11502	0	0	0	609		1	705
GP11506	0	0	0	607		1	705
GP11508	0	0	0	606	502	2	701
GP11509	0	0	0	606	502	2	701
GP11510	0	0	0	601		1	705
GP11513	0	0	0	601		1	705
GP11514	0	0	0	605		1	705
GP11928	0	0	0	501		1	800
GP12836	0	0	0	505		1	800
GP7725	0	0	0	610		1	705
GP7728	0	0	0	606		1	705
GP7729	0	0	0	601	510	2	701
GP7730	0	0	0	601		1	705
GP7731	0	0	0	510		1	800
GP7732	0	0	0	500		1	800
GP7736	0	0	0	600		1	705
GP7737	0	0	0	604		1	705
GP7738	0	0	0	610		1	705
GP7739	0	0	0	601	510	2	701
GP7740	0	0	0	601		1	705
GP7741	0	0	0	604		1	705
GP7742	0	0	0	607		1	705
GP7743	0	0	0	601	601	2	703
GP7744	0	0	0	600	509	2	701
GP7745	0	0	0	502		1	800
GP7746	0	0	0	509		1	800
GP7771	0	0	0	606		1	705
GP7772	0	0	0	612		1	705

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
90-5-1220	5059S	EAC	Slaughter Ranch	70	7001	2	217	
90-5-1221	4070S	EAC	Slaughter Ranch	70	7001	2	211	
91-1-4	4069S	EAC	Slaughter Ranch	50	80	7	710	1
90-5-1033	1975V	EAC	VIV	50	82	2	211	
90-5-1337	2078V	EAC	VIV	50	80	2	210	
90-5-1376	1962V	EAC	VIV	50	31	1	104	
90-5-1391	1963V	EAC	VIV	50	61	1	121	
90-5-1439	1980V	EAC	VIV	50	80	2	242	
90-5-1486	2011V	EAC	VIV	50	80	2	210	
90-5-1487	1998V	EAC	VIV	50	84	2	211	
90-5-1495	2068V	EAC	VIV	50	82	2	230	
90-5-15-4	2017V	EAC	VIV	50	80	2	230	
90-5-736	1960V	EAC	VIV	50	31	1	104	
90-5-737	2024V	EAC	VIV	50	31	1	106	
90-5-738	2069V	EAC	VIV	50	33	1	106	
90-5-739	2023V	EAC	VIV	50	80	2	211	
90-5-740	1938V	EAC	VIV	50	61	1	124	
90-5-741	1981V	EAC	VIV	50	33	1	106	
90-5-746	1978V	EAC	VIV	50	82	2	210	
90-5-748	3006V	EAC	VIV	50	82	2	211	
90-5-749	1991V	EAC	VIV	50	32	1	104	
90-5-750	3052V	EAC	VIV	50	80	2	211	
90-5-753	3004V	EAC	VIV	50	80	2	211	
90-5-754	2037V	EAC	VIV	50	80	2	210	
90-5-757	2079V	EAC	VIV	50	31	1	106	
90-5-758	3028V	EAC	VIV	50	61	1	121	
90-5-759	2038V	EAC	VIV	50	63	1	121	
90-5-765	3007V	EAC	VIV	50	82	2	211	
90-5-768	2075V	EAC	VIV	50	32	1	106	
90-5-769	1983V	EAC	VIV	50	82	2	211	
90-5-771	1974V	EAC	VIV	50	31	1	106	
90-5-772	1973V	EAC	VIV	50	33	1	106	
90-5-773	2077V	EAC	VIV	50	80	2	211	
90-5-774	1990V	EAC	VIV	50	31	1	106	
90-5-780	2076V	EAC	VIV	50	80	2	211	
90-5-781	2036V	EAC	VIV	50	82	2	211	
90-5-782	3048V	EAC	VIV	50	81	2	211	
90-5-783	2022V	EAC	VIV	50	82	2	211	
90-5-784	3051V	EAC	VIV	50	82	2	211	
90-5-785	2033V	EAC	VIV	50	81	2	242	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
90-5-1220	23.6	27.5	11.8	504		1	800
90-5-1221	15.4	17.3	9.8	510		1	800
91-1-4	17	37	14.5	502		1	800
90-5-1033	27.1	39	13.8	507		1	800
90-5-1337	19.6	18.7	9.3	509		1	800
90-5-1376	8	16.5	15.5	601		1	705
90-5-1391	9.1	16.8	14.9	612		1	705
90-5-1439	17.8	20	6.5	510		1	800
90-5-1486	11.9	13.2	4	510		1	800
90-5-1487	10.1	13.4	7.2	508		1	800
90-5-1495	15.1	18.2	7.5	507		1	800
90-5-15-4	11.2	17.4	9.5	510		1	800
90-5-736	6.9	13.1	12.1	607		1	705
90-5-737	11.6	23.6	21.5	606		1	705
90-5-738	14.5	30.6	26.5	606	509	2	701
90-5-739	29.3	43.6	16.1	501		1	800
90-5-740	16.8	31.7	29.6	607		1	705
90-5-741	12.8	25.6	24.4	606	510	2	701
90-5-746	28.3	40.5	15.5	502		1	800
90-5-748	27.3	40	18.1	508		1	800
90-5-749	6.1	13.3	12.5	607	504	2	701
90-5-750	24.3	35.6	15.5	501		1	800
90-5-753	28.5	39.9	15	504		1	800
90-5-754	20.1	30.2	14.4	505		1	800
90-5-757	12.9	30.2	28.3	601		1	705
90-5-758	17.9	36	33.6	601		1	705
90-5-759	21.7	36.3	31.4	601	507	2	701
90-5-765	23.6	36.3	14.7	509		1	800
90-5-768	15.9	31.8	27.9	607	500	2	705
90-5-769	19.1	30.3	15.7	508		1	800
90-5-771	18.2	33.9	30.5	606		1	705
90-5-772	8.9	19.5	17.9	510	509	2	701
90-5-773	19.1	27.5	11.2	504		1	800
90-5-774	14.8	32.5	31	505		1	705
90-5-780	26.9	33.1	15.8	510		1	800
90-5-781	15.8	24.5	11.8	501		1	800
90-5-782	26.1	36.5	14.4	508		1	800
90-5-783	23.1	43.4	16.5	509		1	800
90-5-784	26.5	41.5	16.6	509		1	800
90-5-785	13.6	19.4	9	509		1	800

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Sec.Cat. #	Repository	Site	Ware	Type	Shape	Form	Effigy Type
90-5-96	4026V	EAC	VIV	50	31	1	106	
90-5-483	1323W	EAC	Webb	50	31	1	106	
90-5-526	1322W	EAC	Webb	50	31	1	106	

Table AC.1. Summary of whole vessel data (continued).

Catalog #	Height (cm)	Max Diam. (cm)	Orifice Diam. (cm)	Exterior Design Layout	Interior Design Layout	Design Fields	Design Field Location
90-5-96	9.8	19.9	17.8	600		1	705
90-5-483	12.1	25.9	24.3	606		1	705
90-5-526	13.8	26.4	23.8	502		1	705

Table AC.2. Summary of data for motif variables 1-13.

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP38571	1.1, 1.3, 1.8			4.4									
GP38572	1.3, 1.6	2.2		4.3					9.3		11.3		
GP38573	1.1, 1.6, 1.8				5.2								
GP38574	1.2, 1.6, 1.8	2.3							9.2, 9.3				
GP38575	1.2												
GP38576	1.5, 1.6, 1.8								9.2				
GP38577	1.1, 1.3				5.1					10.2			
GP38578	1.2, 1.3								9.3				
GP38579	1.1, 1.5												
GP38580	1.3, 1.8												
GP38581	1.12												
GP38582	1.1, 1.3												
GP38583	1.6								9.2				
GP38584	1.1, 1.3												
GP38585	1.1, 1.3, 1.8												
GP38586						6.1	7.1						
GP38587	1.2, 1.6												
GP38588	1.5								9.5				
GP38589	1.3, 1.8												
GP38590	1.1, 1.3												
GP38591	1.1, 1.3, 1.6												
GP38592	1.2, 1.11												
GP38593	1.6	2.2										12.1b	
GP38594	1.1, 1.3, 1.4												
GP38595					5.4			8.2, 8.3					
GP38596	1.1, 1.6								9.2				

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP38597	1.1, 1.2, 1.4								9.3				
GP38598	1.1, 1.3												
GP38599	1.1, 1.4	2.5											
GP38600	1.1, 1.6												
GP38601	1.2, 1.9, 1.12												
GP38602	1.3	2.1											
GP38603	1.2				5.1								
GP38604	1.4,												
GP38605	1.1, 1.3, 1.6												
GP38607	1.2, 1.3, 1.5, 1.6			4.4					9.3				
GP38608	1.1, 1.3												
GP38609	1.3												
GP38610	1.1, 1.3												
GP38612	1.6												
GP38613	1.2, 1.3, 1.4, 1.6											12.1b	
GP38614	1.1, 1.3, 1.6												
GP38615	1.1, 1.2, 1.3, 1.5								9.3				
GP38616	1.5	2.3											
GP38619	1.1, 1.2, 1.3, 1.4,		3.2										
GP38621	1.2, 1.4, 1.6								9.4				
GP38622	1.2, 1.3, 1.9												
GP38623	1.3, 1.6, 1.8												
GP38624	1.2												
GP38625	1.3, 1.8												
GP38626										10.3			
GP38627													
GP38628	1.1												

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP38629	1.6								9.2				
GP38630	1.1										11.4		
GP38631	1.3												
GP38632	1.2, 1.3, 1.5, 1.6												
GP38633	1.3, 1.8												
GP38634	1.1, 1.3												
GP38635	1.2, 1.8							8.4					
GP38636	1.3, 1.8												
GP38637	1.1, 1.4			4.4									
GP38638	1.1, 1.2	2.2											
GP38639	1.3												
GP38640	1.6								9.2				
GP38641	1.1, 1.3, 1.5,												
GP38649	1.1, 1.3												
GP40047	1.6, 1.3												
GP40048	1.1, 1.2, 1.6								9.2, 9.3				
GP38542	1.1, 1.3, 1.6												
GP38543	1.4, 1.6								9.4				
GP38544	1.6								9.2				
GP38545	1.2, 1.3, 1.6								9.3				
GP38546	1.2, 1.3, 1.8								9.3				
GP38547	1.1, 1.2, 1.3			4.2, 4.4	5.1			8.3	9.3				
GP38548	1.1, 1.3, 1.4, 1.5, 1.6												
GP38551	1.2, 1.3												
GP38552	1.5								9.5				
GP38553	1.1												
GP38554	1.1, 1.13, 1.14												

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP38555	1.8												
GP38556	1.6												
GP38557	1.5												
GP38558	1.3, 1.4, 1.6												
GP38559	1.1, 1.6												
GP38560	1.3, 1.4, 1.5, 1.6			4.4									
GP38561	1.1, 1.3				5.3							2.11	13.3
GP38562	1.1, 1.6	2.2											
GP38563													
GP38564	1.2												
GP38565	1.6												
GP38566	1.3, 1.4												
GP38567	1.1									10.2			
GP38568	1.6			4.4									
GP38569	1.1, 1.3												
A-32146		2.2								10.2			
A-32147	1.1, 1.2, 1.3, 1.6								9.3				
A-32148	1.1, 1.2, 1.5			4.2									
A-32149	1.2												
A-32150	1.1, 1.3												
A-32151	1.1, 1.2, 1.3, 1.6								9.3				
GP38527													
20621	1.1, 1.6												
20623	1.1, 1.3, 1.6												
20624	1.6												
20626	1.2, 1.3				5.4			8.1					
20640		2.2									11.1, 11.4		

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
20641													
GP10064	1.1, 1.3, 1.4												
GP10067	1.1	2.7			5.3					10.1	11.6		
GP10084	1.1, 1.3, 1.13			4.2									
GP10085	1.1, 1.3, 1.4												
GP10097	1.1, 1.3, 1.4, 1.8												
GP10099	1.1												
GP10101	1.2, 1.3, 1.8												
GP10102	1.6								9.2				
GP10103	1.6												
GP10104	1.1, 1.2, 1.3, 1.4												
GP10105	1.1, 1.3												
GP10107	1.1, 1.3	2.2									11.3		
GP10108	1.1, 1.2, 1.4								9.7				
GP10109	1.1, 1.4, 1.6, 1.7, 1.8										11.3, 11.4		
GP10111-X-1	1.6			4.4									
GP10118	1.1, 1.2, 1.3, 1.4							8.2					
GP10121	1.3, 1.6				5.1								
GP10126	1.3												
GP10132	1.1, 1.2												
GP10133	1.3												
GP10134	1.1												
GP10135													
GP10138	1.1	2.3	3.1				7.1						
GP10139	1.1, 1.3	2.7								10.2	11.3		
GP10142	1.6	2.4			5.1								
GP10143	1.1, 1.3, 1.6, 1.8	2.4								10.1			

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP10144	1.1	2.3											
GP10145	1.1												
GP10149	1.1												
GP10170	1.3, 1.4												
GP10175	1.3, 1.4, 1.6												
GP10184	1.1, 1.3	2.2		4.4	5.2								
GP10185	1.1, 1.3, 1.6, 1.14	2.7											
GP10188	1.1, 1.6				5.1					10.3			
GP10189	1.3, 1.6	2.7			5.4								
GP10190				4.4	5.1								
GP10198	1.2, 1.5							8.1					
GP10199	1.3, 1.4												
GP3623	1.4, 1.8												
GP3625	1.3	2.7								10.2	11.3, 11.6		
GP3637	1.3	2.7, 2.8									11.3, 11.6		
GP3655	1.1, 1.3, 1.6												
GP3659	1.1, 1.3			4.2									
GP3663	1.3, 1.6												
GP3671	1.1, 1.3, 1.4	2.2	3.2							10.1			
GP3673	1.1, 1.5												
GP3677	1.1, 1.2, 1.3, 1.5, 1.12												
GP3682	1.1, 1.2, 1.4, 1.3			4.3					9.3				
GP3684	1.1, 1.3	2.3											
GP3687	1.1, 1.2, 1.3, 1.5	2.3, 2.7									11.3, 11.6		
GP3691	1.1, 1.5				5.5								
GP3692	1.1, 1.2, 1.3	2.2							9.3				
GP3695	1.1, 1.2, 1.3, 1.6								9.3		11.6		

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP3700	1.1, 1.2, 1.3		3.4						9.3		11.3		
GP3701	1.1, 1.3					6.1					11.3		
GP3704	1.1, 1.3, 1.6	2.4								10.1			
GP3712	1.1, 1.2, 1.3, 1.6												
GP3715	1.1, 1.3, 1.6	2.3											
GP3717	1.1, 1.3	2.2		4.3	5.1, 5.2					10.3			
GP3722	1.1, 1.6												
GP3728	1.2	2.2, 2.4							9.3		11.3		
GP3729	1.2												
GP3731	1.1, 1.3				5.3								
GP3732	1.1, 1.2, 1.3	2.2, 2.3, 2.4		4.4					9.3		11.6		
GP3734	1.1, 1.3	2.7		4.4	5.2, 5.3					10.2			
GP3736	1.1, 1.3, 1.6, 1.8	2.2		4.4							11.3		
GP3737	1.1, 1.3, 1.5, 1.6	2.2, 2.8		4.3	5.2					10.2			
GP3738	1.2	2.1							9.3				
GP3739	1.3, 1.6	2.2		4.3	5.1					10.1			
GP3740	1.6				5.3			8.2, 8.3			11.3		
GP3741	1.1, 1.13												
GP3747	1.8	2.2											
GP3752	1.1, 1.6	2.4	3.2		5.1								
GP3754	1.3, 1.8												
GP3757	1.3												
GP3758	1.1, 1.2												
GP3759	1.2, 1.3, 1.4								9.3				
GP3761	1.6												
GP3772		2.3		4.4	5.2			8.3					
GP3773	1.1, 1.2, 1.3	2.2			5.4						11.6		

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP3774	1.1, 1.3, 1.4	2.2		4.2, 4.3, 4.4									
GP3775	1.1												
GP3776	1.1	2.2	3.1, 3.2							10.2			
GP3778	1.2								9.3				
GP3780	1.2, 1.8									10.1			
GP3781	1.3, 1.4, 1.6, 1.8												
GP3832	1.1, 1.3, 1.8	2.2								10.3			
GP3844	1.1, 1.2, 1.3, 1.4, 1.5, 1.8	2.2		4.4	5.2				9.3				
GP3845	1.1, 1.3	2.2, 2.5											
GP3846	1.3, 1.6	2.5									11.3		
GP3852	1.1, 1.3, 1.4	2.2									11.3		
GP3859	1.1, 1.3, 1.5, 1.8				5.1								
GP3863	1.3, 1.13, 1.14												
GP3871	1.1, 1.2, 1.3								9.3				
GP3875	1.4, 1.8												
GP3881	1.1, 1.3, 1.6												
GP3882	1.1, 1.6												
GP3883	1.1			4.4						10.2			
GP3884	1.1, 1.3,		3.2										
GP3885	1.1	2.7, 2.6		4.2							11.3, 11.6		
GP3886	1.1, 1.3, 1.6	2.6							9.2				
GP3887	1.14								9.6				
GP3962	1.6												
GP3974	1.8			4.4									
GP3977	1.1, 1.5												
GP3983	1.1, 1.5												

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP3987	1.4								9.4		11.3		
GP3991	1.6												
GP4012		2.6	3.2										
GP4016	1.4, 1.8								9.4				
GP4017	1.8												
GP4023	1.3, 1.5, 1.6, 1.8												
GP4028	1.1, 1.6								9.2				
GP4057	1.1, 1.6												
GP4074	1.6												
GP4090	1.1, 1.5												
GP4104	1.6								9.2				
GP4107	1.6												
GP4127	1.1, 1.3, 1.5, 1.9			4.4									
GP4137	1.1, 1.6				5.1								
GP4138	1.1, 1.8												
GP4142	1.1, 1.5												
GP4151	1.6							8.2					
14421	1.1, 1.8	2.3											
14422	1.3, 1.8												
14424	1.1, 1.3		3.2	4.1	5.1					10.2			
14425	1.6	2.3											
14426	1.8												
14427	1.6								9.2				
14428	1.1, 1.2, 1.3, 1.4, 1.5			4.4					9.3, 9.7				
14430	1.1, 1.2, 1.3								9.3				
14431	1.1, 1.3	2.2		4.4									
14432	1.1, 1.2, 1.3, 1.5, 1.6												

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
14433	1.6				5.1								
14434	1.1, 1.2, 1.3, 1.6								9.7				
14435	1.2												
14436	1.9								9.8				
14437	1.8								9.4				
14439	1.1, 1.3					6.1							
14440		2.6			5.1								
14441	1.1, 1.3, 1.6				5.1, 5.3				9.2		11.6		
14442	1.5, 1.6, 1.7								9.7		11.4		
14444	1.1, 1.5, 1.6	2.2		4.3	5.2						11.3		
5719	1.1									10.1			
A-31503	1.1												
A-32116	1.1, 1.2	2.7							9.3		11.3		
A-4130	1.1, 1.4, 1.8	2.1, 2.2						8.4		10.3			
GP316	1.4, 1.8												
GP317	1.1									10.3			
GP318	1.1				5.1								
GP319	1.1, 1.3												
GP43017													
GP43018	1.13												
GP4830	1.1, 1.2, 1.3, 1.4, 1.6								9.7	10.2			
GP885	1.1, 1.2, 1.3	2.7, 2.8											
GP888													
GP889	1.6												
GP891	1.1												
GP892	1.2, 1.3, 1.6								9.2				
GP893	1.3, 1.6												

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP895	1.5, 1.6								9.7				
GP38529	1.1, 1.3, 1.5		3.4							10.1	11.3, 11.6		
GP38530	1.1, 1.3										11.6		
GP38531	1.1, 1.2, 1.3							8.3	9.3				
GP38532	1.1, 1.2, 1.3, 1.6								9.3				
GP38534	1.6												
GP38535	1.1, 1.8												
GP38536	1.1		3.2										
GP38537	1.2												
GP38538	1.6												
GP38460	1.1, 1.4, 1.8												
GP38462-X-1	1.1	2.3		4.2	5.1								
GP38462-X-2	1.3, 1.8												
GP38463	1.2	2.2, 2.7							9.3				
GP38464	1.1, 1.4	2.3	3.2										
GP38465	1.1, 1.4												
GP38466	1.1, 1.3, 1.4, 1.13												
GP38468	1.6	2.4											
GP38469	1.1, 1.2, 1.3								9.3				
GP38470	1.1, 1.3, 1.6	2.7		4.2									
GP38471	1.1, 1.3, 1.8				5.4						11.6		
GP38472	1.1, 1.5, 1.6												
GP38473	1.1, 1.3, 1.5, 1.6			4.4									
GP38475	1.1, 1.3		3.2, 3.6		5.2				9.3		11.6		
GP38479	1.2, 1.3, 1.8												
GP38481	1.3												
GP38482	1.6									10.2			

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP38483	1.5												
GP38484	1.2, 1.3, 1.6												
GP38485	1.2, 1.5												
GP38486	1.3												
GP38487	1.1, 1.3, 1.4												
GP38488	1.1, 1.6												
GP38489	1.1, 1.3												
GP38490	1.1, 1.3, 1.4												
GP38491	1.6				5.1			8.1					
GP38492-X-1	1.1, 1.3												
GP38493	1.2, 1.3, 1.11	2.1											
GP38494		2.2											
GP38495	1.5									10.1			
GP38496	1.1, 1.6, 1.14												
GP38497	1.2								9.3				
GP38498	1.1, 1.3							8.1					
GP38522	1.3, 1.4												
GP40049	1.3, 1.8	2.8		4.4	5.1, 5.5					10.2	11.3		
GP39935	1.1, 1.3	2.7	3.2	4.3									
GP38525	1.1, 1.2, 1.5												
GP38526	1.6												
GP40042	1.1		3.1, 3.2										
GP40043	1.1, 1.6												
GP40044	1.1, 1.5, 1.6		3.2										
GP40045	1.1, 1.3, 1.6, 1.8												
GP53509	1.1, 1.5	2.7								10.2	11.3		
90-5-1378	1.3												

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
90-5-1490								8.3					
90-5-1609	1.16								9.11				
90-5-1617	1.1				5.2								
91-1-51	1.3, 1.15					6.1					11.1		
90-28-14	1.1, 1.3			4.2	5.1								
90-5-797	1.1, 1.3, 1.6, 1.15	2.2	3.3	4.3					9.7		11.1, 11.4		
90-5-798	1.3, 1.4, 1.6, 1.11				5.2							12.6b	
90-5-799		2.2	3.3		5.2	6.1, 6.2							
90-5-802	1.1, 1.3, 1.6	2.2		4.2, 4.3									
90-5-811	1.1, 1.3, 1.4, 1.16								9.4, 9.11				
90-5-812			3.1										
90-5-813	1.8												
90-5-817	1.1		3.3		5.4						11.4		
90-5-818	1.1, 1.16		3.3						9.11		11.4		
90-5-819	1.1, 1.6	2.1											
90-5-827	1.3, 1.6		3.3										
90-5-828	1.3		3.3		5.2								
90-5-829	1.1				5.4								
90-5-830	1.1, 1.3, 1.6												
90-5-834	1.3, 1.6												
90-5-835	1.1, 1.3, 1.7		3.3								11.4		
90-5-836	1.1, 1.3, 1.6		3.3	4.3					9.2				
90-5-837	1.1		3.3, 3.5		5.1		7.1						
90-5-838	1.1				5.2								
90-5-839	1.1, 1.3, 1.4			4.3		6.1							
90-5-84	1.1												
90-5-840	1.1, 1.7										11.4		

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
94-1-49	1.1, 1.7										11.4		
48165	1.4, 1.8												
48170	1.1, 1.3, 1.6	2.7											
1385K	1.1, 1.3, 1.4		3.5										
748K	1.1, 1.3, 1.6										11.4		
90-5-100	1.1, 1.7		3.3	4.3		6.1					11.4		
90-5-1001	1.1, 1.3, 1.4, 1.6, 1.15	2.1, 2.2				6.2		8.3	9.7		11.1		
90-5-1002	1.1, 1.3, 1.6	2.2	3.3									12.1b	
90-5-1004				4.2				8.3					
90-5-1005	1.1, 1.3												
90-5-1007	1.3, 1.4			4.3	5.2	6.1		8.3					
90-5-1008	1.1, 1.3, 1.4		3.5	4.2			7.2	8.5	9.4			12.6b	
90-5-1009	1.1, 1.3, 1.4, 1.8, 1.15										11.1		
90-5-101	1.1, 1.3	2.2	3.3										
90-5-1010	1.1, 1.3, 1.8												
90-5-1012	1.1, 1.2, 1.3, 1.8								9.7				
90-5-1013	1.1, 1.6		3.1, 3.3			6.1					11.4		
90-5-1014	1.1, 1.6		3.6										
90-5-1018	1.1, 1.3, 1.6		3.3	4.3									
90-5-1019	1.1, 1.5				5.4						11.4		
90-5-102	1.1, 1.3, 1.4, 1.6, 1.15		3.3, 3.5	4.2, 4.3	5.2, 5.4		7.2				11.1, 11.4		
90-5-1025	1.1												
90-5-1029	1.7, 1.16								9.11		11.4		
90-5-1030	1.3, 1.4					6.3			9.4				
90-5-1031	1.1, 1.14, 1.16								9.11				

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
90-5-1035	1.6, 1.15	2.1, 2.2				6.1					11.1		
90-5-1038	1.1, 1.3		3.2								11.4		
90-5-1040	1.1, 1.2, 1.3, 1.4		3.3	4.2	5.1	6.1		8.5					
90-5-1048	1.1, 1.3, 1.6		3.5	4.2			7.2		9.2, 9.7			12.1b	
90-5-1049	1.1			4.3	5.2								
90-5-1053	1.1, 1.3, 1.4		3.3			6.1							
90-5-1054	1.3												
90-5-1055	1.1, 1.3, 1.4		3.3, 3.5				7.2					12.6b	
90-5-1059	1.1, 1.3, 1.4					6.1		8.3					
90-5-1063	1.1, 1.2			4.3									
90-5-1064	1.1, 1,3		3.5			6.1, 6.2	7.2						
90-5-1065	1.1, 1.3		3.3		5.2	6.1		8.5			11.4		
90-5-1066	1.1, 1.7, 1.15		3.3		5.2						11.1, 11.4	12.2b	
90-5-1090	1.1, 1.2, 1.6								9.7		11.4		
90-5-1092	1.1		3.5			6.1					11.5		
90-5-1093	1.1, 1.3							8.5					
90-5-1094	1.1		3.3		5.2				9.1			12.3b	
90-5-1103	1.1, 1.2, 1.3, 1.15		3.3		5.4			8.3, 8.5			11.1	12.4b	
90-5-1104	1.1, 1.3, 1.7										11.4		
90-5-1106	1.1, 1.3, 1.4, 1.15					6.1		8.3			11.1		
90-5-1110	1.1, 1.2								9.3				
90-5-1120	1.1, 1.3, 1.4												
90-5-1121	1.1, 1.3, 1.4				5.4								
90-5-1142	1.1, 1.3, 1.4	2.2	3.5			6.1							
90-5-1144	1.1, 1.2, 1.3		3.3, 3.5							10.2			
90-5-1145	1.1, 1.3	2.1											
90-5-1155	1.3, 1.4, 1.6		3.3			6.1						12.6b	

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
90-5-1156	1.6												
90-5-1157	1.1, 1.3, 1.6		3.3										
90-5-1176	1.3, 1.15								9.9		11.1		
90-5-1177	1.3, 1.7					6.1					11.4		
90-5-1178	1.1		3.3										
90-5-1179	1.1, 1.3, 1.4		3.3										
90-5-1195	1.1, 1.6, 1.8		3.3					8.3					
90-5-1197	1.1, 1.2, 1.3, 1.8			4.2				8.3					
90-5-1199	1.1, 1.6, 1.16												
90-5-1200		2.11			5.1								
90-5-1213	1.6												
90-5-1214	1.1, 1.6, 1.8												
90-5-1224	1.2												
90-5-1225	1.8												
90-5-1226	1.1, 1.3, 1.4, 1.6, 1.14	2.9	3.3		5.2, 5.4		7.1						
90-5-1227	1.3, 1.16					6.1			9.11				
90-5-1228	1.1, 1.3, 1.15		3.5	4.2			7.2		9.9		11.1		
90-5-1229	1.1, 1.2, 1.3, 1.6, 1.16			4.2		6.1			9.3, 9.11				
90-5-1232	1.1, 1.3, 1.6	2.2	3.2, 3.3, 3.5	4.3	5.2								
90-5-1233	1.1, 1.3, 1.4			4.3	5.2								
90-5-1235	1.1, 1.3, 1.4, 1.11												
90-5-1236	1.1, 1.6					6.1, 6.2							
90-5-1237	1.1, 1.2, 1.3							8.5	9.3				
90-5-1480	1.1, 1.3, 1.4												
90-5-1489	1.1			4.3		6.1		8.5					

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
90-5-1492	1.1		3.6		5.2								
90-5-1505	1.1	2.2			5.1								
90-5-1625	1.1, 1.3, 1.16			4.2					9.11		11.1		
90-5-85	1.1, 1.3, 1.6	2.6	3.3, 3.5			6.1						12.1b	
90-5-88	1.1, 1.3, 1.7					6.1					11.4		
90-5-933	1.1, 1.3, 1.6			4.2									
90-5-97	1.3							8.3					
90-5-982	1.1												
90-5-985	1.1, 1.3, 1.6												
90-5-986	1.1, 1.3, 1.6												
90-5-987	1.1, 1.3, 1.4			4.3	5.1								
90-5-99	1.1, 1.3, 1.6		3.3	4.3				8.5			11.1		
90-5-990	1.1, 1.3, 1.4, 1.6		3.6			6.1							
90-5-992	1.1, 1.3, 1.4, 1.15	2.2	3.3			6.1		8.3			11.1	12.1b	
90-5-995	1.1, 1.2, 1.3, 1.6, 1.16				5.4			8.3	9.11				
90-5-996	1.1, 1.16		3.5	4.2			7.2		9.11				
91-1-8	1.1, 1.3	2.2			5.1						11.4		
17972	1.3						7.2						
17973	1.1, 1.3, 1.4, 1.6	2.2	3.3, 3.5									12.1b	
17976	1.3				5.1								
17980	1.1, 1.3, 1.4		3.5		5.2, 5.4	6.1		8.3					
17981	1.1, 1.3					6.1							
46627	1.1, 1.3, 1.4, 1.6		3.3						9.4				
46628	1.1, 1.3												
441	1.1, 1.3, 1.8	2.9	3.3				7.1						
709	1.1, 1.3, 1.7										11.4		

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
711	1.1, 1.3, 1.6, 1.16		3.5			6.1		8.5	9.2, 9.11				
90-5-794	1.1, 1.3, 1.6			4.3									
90-5-851	1.1, 1.2, 1.6			4.3									
90-5-870	1.1, 1.3												
90-5-871	1.1, 1.3, 1.4			4.2									
90-5-872	1.1, 1.3, 1.8												
90-5-879	1.1												
90-5-880	1.1, 1.3, 1.4					6.1							
90-5-91	1.1, 1.3, 1.4								9.4				
90-5-915	1.1, 1.2, 1.3, 1.4, 1.16							8.5	9.11				
90-5-934	1.1, 1.3, 1.15	2.2									11.1		
90-5-935	1.1, 1.2, 1.3		3.3	4.3					9.3		11.4		
90-5-936	1.1, 1.3, 1.5		3.5	4.2		6.1, 6.2	7.2	8.3			11.4		
90-5-943	1.1, 1.3, 1.4		3.3										
90-5-944	1.1, 1.3, 1.4		3.3			6.1					11.4		
90-5-945	1.1, 1.3, 1.8, 1.16								9.11				
90-5-946	1.1, 1.3, 1.4, 1.6		3.3	4.3	5.2			8.5					
90-5-98	1.1							8.5					
GP11210	1.3, 1.16		3.3									12.7b	
GP11212		2.11				6.1							
GP11213	1.1, 1.3 1.15		3.2								11.1		
GP11214	1.1				5.4	6.1, 6.2							
GP11215	1.1, 1.2, 1.15							8.5			11.1		
GP11239	1.1, 1.2, 1.3												
GP11240	1.3, 1.2												
GP11245								8.5					

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP11247	1.2		3.6										
GP11248	1.1												
GP11253	1.15							8.3			11.1, 11.4		
GP11254						6.1							
GP11255	1.1, 1.3												
GP11257-X-1	1.3												
GP11257-X-2	1.1, 1.2, 1.3, 1.15		3.3								11.1	12.3b	
GP11258					5.2			8.5					
GP11259	1.3	2.11											
GP11260	1.1, 1.3				5.1, 5.4	6.1		8.3					
GP11261	1.2, 1.3												
GP11262	1.1												
GP11264	1.3												
GP11265	1.1, 1.3, 1.15		3.6								11.1		
GP11266	1.2, 1.3							8.5					
GP11267	1.1, 1.5							8.5					
GP11268	1.16								9.11				
GP11269	1.3												
GP11271	1.2, 1.15	2.11							9.3		11.1		
GP11281	1.1		3.3		5.3			8.2		10.1		12.1b	13.2
GP11282		2.11				6.1, 6.2							
GP11283	1.1												
GP11284	1.3, 1.2, 1.15	2.1									11.1		
GP11285	1.1, 1.3		3.3										
GP11286	1.3, 1.6, 1.16								9.2				
GP11287	1.3	2.2											
GP11293	1.1, 1.3		3.1										

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP11297	1.1							8.3					
GP11302	1.1, 1.2		3.3			6.1						12.3b	
GP11303	1.1, 1.3												
GP11304	1.1, 1.3, 1.16												
GP11306	1.3												
GP11309	1.15										11.1		
GP11316	1.3, 1.15								9.9		11.1		
GP11317		2.6	3.6		5.2								
GP11319						6.1							
GP11320		2.1, 2.8				6.1							
GP11343	1.1, 1.3												
GP11344	1.3												
GP11345	1.1, 1.3	2.11											
GP11346	1.1, 1.15								9.9		11.1		
GP11348	1.3												
GP11360	1.1, 1.3, 1.6, 1.15		3.3								11.1		
GP11361	1.3	2.11											
GP11362						6.1, 6.2	7.2						
GP11363	1.3	2.11											
GP11364	1.2, 1.3				5.4								
GP11365	1.1, 1.3												
GP11366	1.11, 1.15	2.11									11.1		
GP11367		2.11				6.1							
GP11369	1.1							8.5					
GP11370	1.1, 1.14		3.3				7.2		9.6		11.4, 11.5	12.8b	
GP11371	1.1, 1.15	2.11	3.3							10.1	11.1		
GP11373		2.11				6.1							

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP11375	1.1, 1.2, 1.3		3.5										
GP11377	1.1, 1.3, 1.15										11.1		
GP11382	1.1										11.1		
GP11383	1.3	2.11									11.1		
GP11384	1.2	2.1											
GP11386	1.3							8.1					
GP11415	1.1, 1.2, 1.3, 1.7		3.3								11.4	12.3b	
GP11416	1.1, 1.15				5.4						11.1		
GP11417	1.1, 1.15		3.3			6.1					11.1		
GP11419	1.1, 1.2, 1.3												
GP11420	1.3, 1.15										11.1		
GP11426	1.1							8.5					
GP11427	1.3		3.3										
GP11428	1.1, 1.3	2.6	3.6										
GP11429	1.3												
GP11435	1.1, 1.3							8.2		10.1	11.1		
GP11437	1.1, 1.3	2.11											
GP11438	1.1, 1.2, 1.3, 1.16					6.1			9.3				
GP11439	1.3				5.1			8.5					
GP11440	1.1		3.3								11.4		
GP11472	1.1										11.4		
GP11475	1.1, 1.5					6.1						12.9b	
GP11476	1.2, 1.3, 1.6								9.2				
GP11477	1.1	2.1											
GP11479		2.11				6.1							
GP11480					5.1								
GP11481					5.1								

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP11482	1.1, 1.3		3.3					8.5					
GP11483	1.1, 1.15					6.1					11.1		
GP11484		2.11				6.1, 6.2							
GP11486	1.1, 1.2, 1.3		3.3									12.3b	
GP11487						6.1, 6.2		8.5					
GP11492	1.1, 1.3				5.4								
GP11493	1.1, 1.2, 1.3												
GP11494	1.1, 1.15										11.1		
GP11501	1.3												
GP11502						6.1, 6.2	7.2						
GP11506	1.1, 1.3												
GP11508	1.1		3.3					8.5			11.5		
GP11509	1.3					6.3							
GP11510	1.1		3.3, 3.5								11.5		
GP11513	1.3			4.2									
GP11514	1.1, 1.3, 1.8				5.4								
GP11928	1.1, 1.2								9.3			12.3b	
GP12836	1.2, 1.3		3.5			6.2	7.2		9.3				
GP7725	1.1, 1.15		3.3		5.2			8.3			11.1	12.4b	
GP7728	1.1, 1.2, 1.6, 1.15					6.1			9.2		11.1		
GP7729	1.1, 1.2, 1.11										11.4	12.3b	
GP7730	1.1, 1.3												
GP7731	1.2								9.3			12.3b	
GP7732	1.1, 1.6				5.2								
GP7736	1.6, 1.15	2.2, 2.9					7.1		9.2		11.1		
GP7737													
GP7738	1.1							8.3					

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
GP7739	1.1, 1.15		3.3						9.9		11.1	12.4b	
GP7740	1.1, 1.2, 1.3												
GP7741													
GP7742	1.1, 1.3				5.2								
GP7743	1.1, 1.2, 1.3, 1.15	2.6		4.3							11.1		
GP7744	1.1, 1.2, 1.3, 1.15				5.2						11.1	12.3b, 12.4b	
GP7745	1.2, 1.3							8.5					
GP7746	1.3, 1.4			4.4					9.4			12.6b	
GP7771	1.1, 1.2, 1.3				5.2			8.5	9.3				
GP7772	1.3	2.1		4.3	5.2								
90-5-1220	1.1, 1.2, 1.3							8.1	9.7				
90-5-1221	1.1, 1.2, 1.3, 1.6,								9.3				
91-1-4	1.3, 1.15	2.2	3.1, 3.3			6.1, 6.2					11.1		
90-5-1033	1.1, 1.2, 1.3, 1.8		3.3, 3.5		5.2			8.3				12.1b	13.3
90-5-1337	1.1, 1.2, 1.3, 1.16												
90-5-1376	1.15		3.3						9.9		11.1	12.4b	
90-5-1391	1.1, 1.6												
90-5-1439	1.1, 1.3, 1.7							8.5			11.4		
90-5-1486	1.1												
90-5-1487						6.1							
90-5-1495	1.3				5.2			8.5					
90-5-15-4	1.6, 1.16		3.3						9.2, 9.11			12.1b	
90-5-736	1.1,		3.6										
90-5-737	1.1, 1.3		3.3										
90-5-738	1.1, 1.6, 1.15		3.3	4.3				8.5			11.1		
90-5-739	1.1, 1.2, 1.3							8.5				12.3b	

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
90-5-740	1.1, 1.3		3.3					8.5				12.3b	
90-5-741	1.1, 1.3, 1.15, 1.16		3.3						9.11		11.1	12.7b	
90-5-746	1.1, 1.6		3.3, 3.5, 3.6										
90-5-748	1.1, 1.3		3.3	4.2									
90-5-749	1.2, 1.3					6.1							
90-5-750	1.2, 1.11		3.3			6.1		8.5				12.3b	
90-5-753	1.1, 1.8					6.1		8.5					
90-5-754						6.1, 6.2							
90-5-757	1.1, 1.3		3.1		5.1			8.3					
90-5-758	1.1, 1.2, 1.15	2.1									11.1		
90-5-759	1.2, 1.3, 1.8		3.3									12.3b	
90-5-765	1.1, 1.2, 1.15, 1.16	2.6	3.6						9.3, 9.9		11.1		
90-5-768	1.1, 1.2, 1.3, 1.4												
90-5-769	1.1, 1.2, 1.3							8.5	9.3				
90-5-771	1.1, 1.2, 1.3	2.1	3.3, 3.5									12.3b	
90-5-772	1.1, 1.2, 1.3	2.1, 2.11	3.3									12.3b	
90-5-773	1.3, 1.6								9.2				
90-5-774		2.11				6.1, 6.2							
90-5-780	1.2, 1.3								9.3				
90-5-781	1.2, 1.16		3.3						9.3, 9.11			12.3b, 12.7b	
90-5-782	1.1, 1.2, 1.3	2.1						8.5			11.4		
90-5-783	1.2, 1.3, 1.15		3.3					8.5			11.1	12.3b	
90-5-784	1.1, 1.3		3.3			6.1, 6.2		8.5				12.6b	
90-5-785	1.3		3.6			6.1							
90-5-96	1.1							8.5					

Table AC.2. Summary of data for motif variables 1-13 (continued).

Catalog #	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
90-5-483	1.1, 1.3, 1.6		3.3										
90-5-526	1.1, 1.2	2.4, 2.11						8.3					

Table AC.3. Summary of data for motif variables 14-27.

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP38571								22.5		25.2	24.2		
GP38572									23.1, 23.3	25.1, 25.2, 25.5	24.2, 24.3	26.2	27.2
GP38573													
GP38574								22.5					
GP38575						19.1		22.1		25.1	24.4		
GP38576													
GP38577					18.4			22.5		25.1, 25.3	24.2	26.2	
GP38578								22.5					
GP38579													
GP38580													
GP38581													
GP38582										25.3	24.2		
GP38583													
GP38584										25.3, 25.4	24.2, 24.5	26.2	
GP38585										25.2	24.2		
GP38586				17.4									
GP38587													
GP38588													
GP38589										25.2	24.2		
GP38590										25.3	24.2		
GP38591										25.2, 25.3	24.3, 24.2		
GP38592													
GP38593													
GP38594										25.5	24.2		
GP38595													
GP38596													
GP38597												26.2	

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP38598										25.3	24.2		
GP38599													
GP38600										25.2, 25.4	24.3, 24.5	26.2	
GP38601													
GP38602													
GP38603													
GP38604										25.2	24.2		
GP38605										25.3, 25.4	24.2, 24.5	26.2	
GP38607													
GP38608										25.3, 25.2	24.2, 24.3	26.2	
GP38609										25.1	24.2		
GP38610													
GP38612										25.2	24.3		
GP38613													
GP38614									23.1	25.5	24.2		
GP38615										25.2	24.2		
GP38616													
GP38619													
GP38621									23.4	25.2, 25.4	24.3, 24.5	26.3	
GP38622										25.1	24.2		
GP38623										25.2	24.3, 24.2		
GP38624												26.3	
GP38625										25.1	24.2		
GP38626													27.3
GP38627		15.4											
GP38628												26.2	
GP38629													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP38630												26.1	
GP38631										25.1	24.2		
GP38632													
GP38633										25.1, 25.2	24.2		
GP38634										25.3	24.2		
GP38635													
GP38636													
GP38637													
GP38638													
GP38639										25.1	24.2		
GP38640													
GP38641													
GP38649										25.1	24.2		
GP40047										25.2	24.2		
GP40048													
GP38542										25.3, 25.4	24.2, 24.3, 24.5	26.3	
GP38543													
GP38544													
GP38545										25.3	24.2, 24.3		
GP38546										25.2	24.2	26.2	
GP38547										25.3	24.2, 24.3	26.2	
GP38548										25.3	24.2		
GP38551													
GP38552													
GP38553													
GP38554													
GP38555													27.2

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP38556													
GP38557													
GP38558										25.4	24.5	26.2	
GP38559													
GP38560													
GP38561	14.3	15.5								25.2, 25.3	24.3, 24.2		
GP38562													
GP38563								22.5					
GP38564													
GP38565													
GP38566													
GP38567												26.2	
GP38568													
GP38569													
A-32146					18.3			22.6					
A-32147										25.3	24.2, 24.3		
A-32148													
A-32149													
A-32150										25.4	24.5	26.1	
A-32151										25.3	24.2, 24.3		
GP38527													
20621										25.3	24.3		
20623										25.3	24.2, 24.3		
20624										25.4, 25.3	24.5, 24.3	26.3	
20626								22.5		25.6	24.1		
20640				17.4									
20641													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP10064										25.3	24.2	26.2	
GP10067		15.3											
GP10084										25.2, 25.3	24.5, 24.2, 24.7	26.3	
GP10085													
GP10097													
GP10099													
GP10101													
GP10102													
GP10103										25.3	24.3		
GP10104													
GP10105													
GP10107									23.5				
GP10108													
GP10109									23.3				
GP10111-X-1													
GP10118													
GP10121													
GP10126													
GP10132													
GP10133													
GP10134													
GP10135													
GP10138													
GP10139									23.4	25.4	24.5	26.1	
GP10142													
GP10143								22.4		25.3	24.3		
GP10144													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP10145													
GP10149													
GP10170													
GP10175													
GP10184													27.5
GP10185													27.1
GP10188										25.3, 25.4	24.3, 24.5	26.3	27.1
GP10189										25.3, 25.4	24.3, 24.5	26.2	27.8
GP10190													27.5
GP10198								22.3					
GP10199								22.5					
GP3623													
GP3625					18.3			22.6				26.2	27.2
GP3637									23.1, 23.2	25.1	24.2	26.2	
GP3655													
GP3659					18.3			22.6					
GP3663													
GP3671								22.4		25.3	24.2		27.1
GP3673													
GP3677													27.1
GP3682								22.5					
GP3684								22.5		25.3	24.5	26.2	
GP3687								22.2		25.3	24.5	26.2	
GP3691													
GP3692										25.3, 25.4	24.2, 24.5	26.2	
GP3695										25.3, 25.4	24.2, 24.3, 24.5	26.2	
GP3700									23.1	25.3	24.2		

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP3701									23.1	25.3	24.2		
GP3704		15.4								25.3	24.2, 24.3		
GP3712								22.2		25.3	24.2		
GP3715										25.3	24.2, 24.3, 24.5	26.2	
GP3717										25.4	24.5	26.1	27.1
GP3722										25.3	24.3	26.1	
GP3728						19.1		22.1	23.1				
GP3729													
GP3731							20.2	22.2					
GP3732						19.1		22.1		25.3	24.2	26.2	
GP3734							20.2	22.2					27.2
GP3736									23.2				
GP3737	14.3									25.3	24.3	26.1	
GP3738													
GP3739					18.2			22.5		25.3, 25.4	24.3, 24.5	26.1	
GP3740									23.5				
GP3741										25.3, 25.4	24.7, 24.5	26.1	
GP3747													
GP3752													
GP3754													
GP3757									23.1			26.1	
GP3758													
GP3759												26.2	
GP3761										25.3, 25.4	24.3, 24.5	26.2	
GP3772	14.3												27.5
GP3773													
GP3774									23.2, 23.5	25.4	24.5		

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP3775										25.3	24.5	26.2	
GP3776		15.2											
GP3778													
GP3780	14.3												
GP3781												26.2	
GP3832												26.1	27.1
GP3844										25.3, 25.4	24.2, 24.5		
GP3845										25.3, 25.4	24.2, 24.5	26.2, 26.3	
GP3846									23.1	25.4, 25.3	24.5, 24.3	26.2	
GP3852									23.1, 23.2	25.4	24.5	26.2	
GP3859													27.4
GP3863								22.5					
GP3871										25.3	24.2	26.2	
GP3875													
GP3881										25.3	24.2, 24.3		
GP3882										25.3	24.3, 24.5	26.2	
GP3883												26.2	
GP3884										25.3	24.2		
GP3885									23.5				
GP3886										25.3	24.2	26.1	
GP3887													
GP3962													
GP3974													
GP3977													
GP3983													
GP3987									23.1				
GP3991													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP4012													
GP4016													
GP4017													
GP4023													
GP4028													
GP4057									23.2	25.3	24.3		
GP4074													
GP4090													
GP4104													
GP4107													
GP4127													
GP4137										25.3	24.3, 24.6		
GP4138										25.2	24.2		
GP4142													
GP4151													
14421													
14422													
14424										25.3	24.2	26.2, 26.3, 26.5	
14425													
14426													
14427													
14428									23.6				
14430										25.3	24.2		
14431										25.3, 25.4	24.2, 24.5	26.2	
14432													
14433													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
14434										25.3	24.2		
14435													
14436													
14437													
14439													
14440													
14441													
14442													
14444									23.1				
5719												26.2, 26.5	
A-31503													
A-32116									23.1	25.4	24.5	26.3	
A-4130	14.3									25.4	24.5	26.2	27.2
GP316													
GP317													27.3
GP318												26.1	27.2
GP319				17.4									
GP43017													
GP43018													
GP4830										25.3	24.2, 24.3	26.2	
GP885									23.1	25.3	24.2		
GP888													
GP889													
GP891													
GP892													
GP893													
GP895													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP38529					18.2			22.5	23.1	25.4	24.5	26.2	
GP38530										25.3	24.2	26.2	
GP38531													
GP38532										25.3	24.3		
GP38534													
GP38535													
GP38536													
GP38537													
GP38538													
GP38460													
GP38462-X-1												26.3	27.7
GP38462-X-2								22.5					
GP38463		15.4											
GP38464						19.1		22.1		25.4	24.5	26.2	
GP38465					18.1			22.5		25.4	24.5	26.2	
GP38466								22.5					
GP38468													27.6
GP38469								22.5		25.3, 25.4	24.2, 24.5	26.1	
GP38470										25.3	24.2	26.1	
GP38471													
GP38472													
GP38473													
GP38475										25.3	24.2		
GP38479													
GP38481													
GP38482										25.3	24.3	26.1	
GP38483										25.7	24.6	26.2	

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP38484										25.3	24.3, 24.4		
GP38485													
GP38486										25.1	24.3		
GP38487				17.4						25.2	24.3, 24.7		
GP38488													
GP38489													
GP38490													
GP38491		15.5											27.5
GP38492-X-1												26.1	
GP38493													
GP38494													
GP38495	14.3												
GP38496													
GP38497													
GP38498								22.5					
GP38522													
GP40049	14.3								23.2				
GP39935													
GP38525													
GP38526													
GP40042													
GP40043													
GP40044													
GP40045										25.3	24.2		27.2
GP53509									23.5			26.2	
90-5-1378													
90-5-1490													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
90-5-1609													
90-5-1617				17.4									
91-1-51													
90-28-14													
90-5-797													
90-5-798													
90-5-799													
90-5-802				17.4									
90-5-811													
90-5-812													
90-5-813													
90-5-817		15.5											
90-5-818													
90-5-819													
90-5-827													
90-5-828													
90-5-829													
90-5-830													
90-5-834													
90-5-835													
90-5-836													
90-5-837	14.3												
90-5-838													
90-5-839													
90-5-84													
90-5-840													
94-1-49													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
48165													
48170									23.1, 23.4	25.1	24.2	26.1, 26.3	
1385K										25.7	24.2		
748K													
90-5-100													
90-5-1001		15.5	16.1										
90-5-1002				17.4									
90-5-1004													
90-5-1005													
90-5-1007													
90-5-1008													
90-5-1009													
90-5-101										25.7	24.2		
90-5-1010													
90-5-1012													
90-5-1013													
90-5-1014				17.4									
90-5-1018													
90-5-1019													
90-5-102													
90-5-1025													
90-5-1029													
90-5-1030													
90-5-1031				17.4									
90-5-1035				17.1									
90-5-1038													
90-5-1040													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
90-5-1048													
90-5-1049													
90-5-1053			16.1										
90-5-1054													
90-5-1055													
90-5-1059													
90-5-1063													
90-5-1064			16.1										
90-5-1065													
90-5-1066			16.1	17.4									
90-5-1090													
90-5-1092													
90-5-1093													
90-5-1094		15.5											
90-5-1103		15.5											
90-5-1104													
90-5-1106													
90-5-1110													
90-5-1120													
90-5-1121													
90-5-1142													
90-5-1144													
90-5-1145				17.4									
90-5-1155													
90-5-1156													
90-5-1157										25.7	24.2		
90-5-1176													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
90-5-1177		15.5											
90-5-1178													
90-5-1179													
90-5-1195													
90-5-1197													
90-5-1199													
90-5-1200													
90-5-1213													
90-5-1214													
90-5-1224													
90-5-1225										25.2	24.2		
90-5-1226				17.4									
90-5-1227													
90-5-1228													
90-5-1229													
90-5-1232				17.1									
90-5-1233													
90-5-1235													
90-5-1236													
90-5-1237													
90-5-1480													
90-5-1489													
90-5-1492							20.2						
90-5-1505							20.2						
90-5-1625													
90-5-85													
90-5-88													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
90-5-933													
90-5-97		15.5											
90-5-982				17.4									
90-5-985													
90-5-986			16.1										
90-5-987													
90-5-99			16.2	17.4									
90-5-990													
90-5-992													
90-5-995		15.5		17.4									
90-5-996													
91-1-8				17.4									
17972													27.2
17973													
17976													
17980													
17981													
46627													
46628													
441													
709													
711			16.1										
90-5-794													
90-5-851										25.1	24.3		
90-5-870													
90-5-871										25.7	24.2		
90-5-872													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
90-5-879													
90-5-880													
90-5-91													
90-5-915				17.4									
90-5-934				17.4									
90-5-935		15.5											
90-5-936													
90-5-943													
90-5-944													
90-5-945													
90-5-946													
90-5-98													
GP11210													
GP11212													
GP11213													
GP11214													
GP11215													
GP11239													
GP11240													
GP11245		15.3											
GP11247													
GP11248							20.2						
GP11253													
GP11254				17.4									
GP11255													
GP11257-X-1													
GP11257-X-2													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP11258													
GP11259													
GP11260													
GP11261													
GP11262													
GP11264													
GP11265													
GP11266													
GP11267				17.4	18.3								
GP11268													
GP11269										25.7	24.2		
GP11271													
GP11281													
GP11282													
GP11283													
GP11284													
GP11285													
GP11286													
GP11287													27.2
GP11293													
GP11297													
GP11302													
GP11303													
GP11304													
GP11306													
GP11309													
GP11316													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP11317													
GP11319													
GP11320				17.1									
GP11343													
GP11344													
GP11345													
GP11346													
GP11348													
GP11360			16.2	17.4									
GP11361													
GP11362													
GP11363													
GP11364													
GP11365													
GP11366		15.5											
GP11367													
GP11369													
GP11370													
GP11371		15.5		17.4									
GP11373													
GP11375													
GP11377													
GP11382				17.4									
GP11383													
GP11384				17.4									
GP11386													
GP11415													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP11416													
GP11417													
GP11419													
GP11420													
GP11426				17.4									
GP11427													
GP11428													
GP11429				17.4									
GP11435		15.5											
GP11437													
GP11438													
GP11439													
GP11440													
GP11472													
GP11475													
GP11476													
GP11477													
GP11479													
GP11480													
GP11481													
GP11482													
GP11483													
GP11484													
GP11486													
GP11487													
GP11492													
GP11493													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP11494			16.1										
GP11501													
GP11502													
GP11506													
GP11508													
GP11509													
GP11510													
GP11513													
GP11514					18.3								
GP11928													
GP12836													
GP7725													
GP7728													
GP7729		15.5											
GP7730													
GP7731													
GP7732													
GP7736													
GP7737													
GP7738													
GP7739													
GP7740													
GP7741													
GP7742													
GP7743													
GP7744													
GP7745													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
GP7746													
GP7771													
GP7772													
90-5-1220									23.2	25.3, 25.4	24.2, 24.5	26.2	
90-5-1221										25.3, 25.4	24.2, 24.5	26.1, 26.2	
91-1-4													27.2
90-5-1033													
90-5-1337													
90-5-1376													
90-5-1391													
90-5-1439				17.4									
90-5-1486			16.1										
90-5-1487													
90-5-1495													
90-5-15-4													
90-5-736													
90-5-737													
90-5-738			16.2										
90-5-739													
90-5-740													
90-5-741													
90-5-746			16.1										
90-5-748													
90-5-749				17.4									
90-5-750													
90-5-753													
90-5-754													

Table AC.3. Summary of data for motif variables 14-27 (continued).

Catalog #	M14	M15	M16	M17	M18	M19	M20	M22	M23	M24	M25	M26	M27
90-5-757													
90-5-758													
90-5-759													
90-5-765													
90-5-768													
90-5-769													
90-5-771													
90-5-772													
90-5-773													
90-5-774													
90-5-780													
90-5-781													
90-5-782													
90-5-783													
90-5-784													
90-5-785													
90-5-96													
90-5-483													
90-5-526													