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THE GRAMMAR, ORTHOGRAPHY, CONTENT,
AND
SOCIAL CONTEXT
OF
LATE PRECLASSIC MAYAN PORTABLE TEXTS

By

David F. Mora-Marín

A dissertation submitted to
the University at Albany, State University of New York
In partial fulfillment of
the requirements for the degree of
Doctor of Philosophy

College of Arts and Sciences

Department of Anthropology

2001

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**The Grammar, Orthography, Content,
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Social Context
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Late Preclassic Mayan Portable Texts**

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ABSTRACT

In this study I describe and analyze the orthography, grammar, and possible linguistic affiliation of a subset of Late Preclassic texts present on inscribed jade and stone preciosities. The topic is framed within an historical anthropological interactionist approach that applies the following ethnohistorical methods: art history, archaeology, paleography, epigraphy, and linguistics. I focus on the application of the paleographic, epigraphic, and linguistic methods, and use the results to draw out implications for the sociocultural and linguistic history of Mayan civilization, specifically concerning the history of the Mayan script and its orthographic conventions, the linguistic affiliation of the earliest Mayan texts, the social context for the diffusion of Mayan writing in the Mayan region.

After providing the necessary sociocultural, linguistic, and epigraphic background for the study of early Mayan writing (Chapters I-III), I present three epigraphic case studies focusing on the study of portable texts from the Classic (A.D. 200-900) and Late Preclassic (400 B.C.-A.D. 200) periods. The first (Chapter IV) consists of a study of the grammatical structure of the dedicatory formula of inscribed Classic pottery vases. The second (Chapter V) consists of a study of the grammatical structure, content, and context of the texts on Early Classic jade plaques. And the third (Chapter VI) consists of a detailed description and analysis of the signary and grammatical structure of a small subset of portable Late Preclassic Mayan texts.

I conclude that the earliest Mayan portable texts exhibit the same basic orthographic conventions as later Classic texts, that they represent Ch'olan or Yukatekan languages, that they mainly contain examples of the dedicatory genre. I then discuss the results from the case studies and their implications for the sociocultural context of Late Preclassic Mayan civilization (Chapter VII), as well as for the sociolinguistic context of Late Preclassic Mayan hieroglyphic writing (Chapter VIII).

DEDICATION

To my parents, Vilma Elena Marín Quesada and Enrique Eugenio Mora Barrantes, for their love, support, and sacrifice. I can only hope that one day I can do the same for my children.

To my siblings for their caring and especially my younger brother, Pablo Daniel Mora Marín, for his understanding.

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INTRODUCTION: BACKGROUND, ASSUMPTIONS, AND METHODOLOGY

0.1. Background and Goals. The study of Late Preclassic (400 B.C.-A.D. 200) Mayan hieroglyphic texts has out of necessity lagged behind that of their Classic (A.D. 200-900) and Postclassic (A.D. 900-1521) counterparts. The typical brevity, scarcity, and fragmentary state of Late Preclassic texts have posed major obstacles in the recognition of structural patterns and the formulation and testing of hypotheses based on such patterns (Houston 2000:144; Prem 1971:113). As a result, and with few exceptions (Coe 1976; Justeson and Mathews 1990; Justeson et al. 1985; Marcus 1976), scholars have often approached the problems of the origin of Mayan orthographic conventions, the linguistic affiliation of the earliest Mayan scribes, and the contents and implications of those texts for Mayan political history through indirect means, such as the study of Classic orthographic conventions for clues to their origin (Campbell 1984; Grube 1991, 1994; Justeson 1989; Macri 2000), and the study of Classic texts and modern Mayan languages for clues to the linguistic affiliation of the early scribes (Houston, Robertson, and Stuart 2000; Justeson and Fox 1989; Lacadena and Wichmann 1999, 2000).

However, owing to major advances in the decipherment and interpretation of Classic and Postclassic Mayan texts during the past few decades (e.g., Bricker 1986; Knorozov 1952; Proskouriakoff 1960, 1963; Schele and Freidel 1990; Martin and Grube 2000), as well as in the grammatical description and historical reconstruction of the languages represented in the texts (e.g., Justeson et al. 1985; Kaufman and Norman 1984; Lacadena 1996, 1998; Lacadena and Wichmann 1999; MacLeod 1984, 1990; Wald 1994), and in the archaeological and art historical contexts for early writing in the Mayan region (e.g., Clark, Hansen, Pérez 1998; Kappelman 1997; Sharer 1994), the time is ripe for revisiting the earliest texts to investigate their orthography and grammar, as well as their implications for the political economic and cultural history of the Mayan script and

civilization.

In this dissertation I intend to do just this: I describe and analyze the orthography, grammar, and possible linguistic affiliation of a subset of Late Preclassic texts present on inscribed jade and stone preciosities. In the following paragraphs I describe the intellectual background, research objectives, and conceptual and analytical methods that underlie my dissertation, and conclude by discussing the organization of its contents.

0.2. Anthropological Approach, Assumptions, and Methods. The topic of study can be fruitfully framed within an historical anthropological interactionist approach that applies the following ethnohistorical methods: art history, archaeology, paleography, epigraphy, and linguistics. The following review includes some of the seminal works relevant to the application of this approach and its methods to the study of the inscribed Mayan preciosities, which make up the majority of the corpus of the earliest Mayan texts. However, I relegate such application to a subsequent study given that this dissertation focuses on the grammatical and orthographic characteristics of the texts.

0.2.1. Interaction and Preciosities. An interactionist approach to historical anthropology is well suited to the study of preciosities and their social contexts (Blanton et al. 1996; Hall and Chase-Dunn 1996; Mann 1986; Marcus 1993; Schortman and Urban 1992; Wallerstein 1974; Weber 1978). According to this approach, political economic interaction among competing social groups is based on their control of two main resources: symbolic (ideology and ritual) and objective (staple and wealth) sources of power. The differential strategies used to maintain control of these sources of power can lead to decentralization or centralization of political economic power.

Preciosities constitute a mixture of both symbolic and objective sources of power. For one, the rarity of the materials used and their skilled craftsmanship make them valuable wealth items (Helms 1979, 1993). Their high value-to-weight ratio makes them convenient to move over very long distances for the purposes of exchange (Hall and Chase-Dunn 1996; Lange and Bishop 1989; Renfrew 1976). Also, their artistic and

textual themes make them an ideal medium of ideological expression and historical documentation (Justeson 1986; Reilly 1990). Finally, the skill, fame, charisma, and ancestry of their makers or owners, and their use in majestic ritual settings and memorable historical events can imbue such objects with great symbolic, historical, and ancestral legitimacy (Brumfiel and Earle 1987; Chapman 1998; Freidel, Schele, and Parker 1993; Helms 1979; McAnany 1997; Weiner 1992).

As wealth items, preciosities can be used as gifts for alliance-formation, as payments in reward for services, and as status markers obtainable only from a centralized source (i.e., produced by attached specialists sponsored by state) to prevent rebellions from provincial administrators who cannot otherwise procure them (Schneider 1977; Blanton and Feinman 1984; Brumfiel and Earle 1987). They can also serve as forms of currency in economic exchange, and as traditionally prescribed payments for rites of passage and other stages in a person's life and death (e.g., dowries, burial goods) (Freidel 1993).

Lastly, the differential accumulation of preciosities, achieved despite the prescribed obligation to exchange (Mauss 1954), can allow some leaders or groups to enhance their social status and political power over those of others less able to accumulate, leading to increasingly hierarchical relationships (Rathje 2000; Weiner 1992). Thus, one can also distinguish between political-gifting, in which "wealthy patrons" engage in gift exchange "for the purposes of building networks of clients," and civic-gifting, in which "the giving of wealthy individuals benefited instead the collectivity, transcending tribe and clients" (Blanton 1998:156). Chapman (1999) and Rathje (2000) argue that civic gifts (e.g., public waterworks, plazas, and temples) are more likely to secure an already established hierarchical differentiation: due to their monumentality, they drain the polity of labor and resources that competing groups can no longer use, and in the process enhance the sense of communal identity and the prestige and legitimacy of those who commission and supervise the project.

0.2.2. Preciosities and Writing. The role of preciosities as the primary medium of gift-exchange in the origin and diffusion of writing systems has been recognized by numerous archaeologists and epigraphers specializing in the Old World (e.g., Bowman and Wolf 1994; Wallace 1989). Stuart (1995) attempts a comparative synthesis of this topic, incorporating case studies on the role of inscribed objects in early Sumerian, Egyptian, Chinese, and in the Classic Mayan script. He concludes that name-tagging, or in other words the almost universal tendency in inscribing objects with texts referring to the objects themselves and to their owners, had a very important role cross-culturally in the origin of writing, and specially in the origin of phoneticism, and from it, what he calls “true writing” (i.e., the representation of spoken language).

The work by Stuart and other authors, indeed, has made it possible to recognize the art historical, epigraphic, and archaeological evidence for the contexts of preciosities in the Classic period. Inscribed polychrome pottery vases served in some occasions as political gifts (Reents-Budet 1994; Stuart 1989, 1995, 1997). Their status as precious objects is indicated by the painted scenes and texts referring to their ritual crafting, dedication, wrapping, and presentation (Grube 1991; MacLeod 1990; Stuart 1995, 1996), as well as by the signatures of the noble and sage scribes who crafted and painted them (Stuart 1989). Writing and literacy may have been used as political gifts through the temporary loan of scribes (Brumfiel 1987; Houston 1993), and also as political tribute resulting from warfare (Mora-Marín 1998c, 1999b).

In addition, the charisma of scribes may have in fact been transferred onto their crafts (cf., Tambiah 1984; Weber 1978): Classic Lowland Mayan scribes were priests (7aj-k'in, 7aj-k'uhul-hun) and sorcerers (7aj-wayab'), and sometimes lords and officials (7ajaw, sajal, b'akab'), who crafted and inscribed preciosities of diverse types, from the minute and portable (pottery, jade, bone, obsidian), to the monumental (staircases, ballcourts, murals, stelae, altars, temples). The personal and impersonal charisma embedded in preciosities, derived from their material and skilled craftsmanship, from the

charisma of their crafters and previous owners, from the ceremonial occasions in which they were dedicated, and from the historical events in which they may have figured, constitutes the source of power of these objects, and accounts for their use in ancestor veneration and the legitimation of land and power (Clark and Houston 1998; Freidel, Schele, and Parker 1993; McAnany 1997; Mora-Marín 1998c; Weiner 1992); this subject matter can then be inscribed on the objects themselves and handed down generation after generation, making for powerfully legitimating symbols and records.

This is eloquently illustrated for the Classic Lowland Mayans at Tikal on Stela 31, which commemorates the accession of Sihjyaj Chan K'awil II ('Sky-born K'awil') on A.D. 411 (**figure 0.1**).¹ On that monument, two human figures are depicted: on either side of the stela is shown Sihjyaj Chan K'awil's father (**figures 0.1a,c**), Yäx Nun 7ayin 'First ? Alligator', with glyphic captions naming him and his own father, SPEAR.THROWER-OWL. On the front of the monument is shown Sihjyaj Chan K'awil (**figure 0.1b**), placing a headdress on his head, dressed in full royal regalia, and holding or carrying various precious objects, most of them made of jade; on the back of the monument is a hieroglyphic inscription.

The text itself narrates Yäx Nun 7ayin's death and his son's accession thereafter (**figure 0.2a**); it also narrates Sihjyaj Chan K'awil's self-coronation (**K'AL-ja/AJ-HUN SIJYAJ CHAN K'AWIL**, k'al-aj-Ø-Ø=hun Sihjyaj Chan K'awil 'Sihjyaj Chan K'awil headband-wrapped') (**figure 0.2b**); and finally it mentions two of the implements that he used to observe the completion of a major time cycle namely, the headband of his paternal grandmother (**7u-HUN(-na) 7UNEN NAB'-NAL**, 7u-hun 7unen Nahb'-nal 'the

¹ The discussion of Tikal Stela 31 is based on the observations by many authors expressed partly in print (e.g., Schele and Freidel 1990:140, 157) but mostly in a public forum during the past ten years. These scholars include Linda Schele, Federico Fahsen, Nikolai Grube, Simon Martin, David Stuart, and others. I only claim to have recognized two pieces of this puzzle so far: the reference in the text to the headband of Sihjyaj Chan K'awil's grandmother, and the glyphic label on Sihjyaj Chan K'awil's wrist bracelet naming Ch'amak, a vassal of Sihjyaj K'ahk', as the bracelet's owner.

headband of 7unen Nahb'-nal') (**figure 0.2c**), and the war headdress (kal-om=te7) of his grandfather SPEAR.THROWER-OWL ((?)7u-KALOMTE7 SPEAR.THROWER-OWL (7u-kal-om=te7 SPEAR.THROWER-OWL 'the kal-om=te7 of Spear-Thrower Owl') (**figure 0.2d**).

However, the textual record of the event is very abbreviated as far as the details of the ritual involved. In the pictorial representation of the event on the front side of the monument, which shows Sihjyaj Chan K'awil in the act of self-coronation (**figure 0.3**), it is clear that his legitimacy relied on more than just two of his ancestors: not only is his father portrayed as a hovering spirit (**figure 0.3a**), and conjuring an ancestor named SAK-HIX (**figure 0.3c**), but his war headdress is labeled SPEAR.THROWER-OWL, the name of his paternal grandfather (**figure 0.3b**); his jadeite back belt plaque head is labeled 7UNEN, his maternal grandmother's name (**figure 0.3g**); his front belt plaque head is labeled TUN-7AJAW, the name of an older female relative (**figure 0.3f**); his left earflare is labeled 7EB'-XOK, the royal lineage founder's name (**figure 0.3e**); and his left jade bracelet is labeled (ch'a-)?CH'AMAK-NAL 'Fox ?', the name of a vassal of Sihjyaj K'ahk' 'Fire-born' who was perhaps a general from Teotihuacan (**figure 0.3d**). Thus, the preciousities portrayed were ancestral heirlooms ritually charged for the purpose of conferring legitimacy to the acceding lord, and in all likelihood contained texts with proprietary statements that proved their authenticity in this regard. These heirlooms were precisely the type of artifact whose inscriptions I study in detail in this dissertation.

0.2.3. Methods. The ethnohistorical methods necessary for understanding the social context of early Mayan writing and preciousities include: the use of art history and paleography for dating unprovenanced texts, the recognition of the iconicity of signs with unknown readings, and the recognition of signs with Classic period counterparts; the use of epigraphic assumptions and techniques for the analysis of the orthographic functions and readings of signs; and the use of linguistic assumptions about the affiliation and grammatical structure of the texts in order to define morphological, syntactic, and

discursive contexts for constraining possible sign readings and interpretations. Prior to the application of these methods, however, the complete and accurate documentation of the texts of interest must be undertaken. The documentation of the data of primary interest to this dissertation is described in **addendum 1**.

0.3. Contents and Organization. This dissertation is organized as follows. There are three units. Unit I contains three chapters aimed at providing a conceptual, theoretical, and analytical background for the rest of the dissertation. Chapter I provides a summary and discussion of scholarship on the origin and diffusion of Mayan writing, and the political economic context of inscribed preciosities. I also review case studies for the social context of the origin and diffusion of writing in other parts of the world, and then compare them with the Mesoamerican case, in general, and the Mayan case more specifically. Chapter II provides an overview of scholarship on the history of the languages represented in the Classic Lowland Mayan script, namely, Ch'olan-Tzeltalan and Yukatekan. I summarize the proposed diversification and dispersal events, as well as their interaction with other Mayan and non-Mayan groups. I focus on their grammatical structure, specially their verbal and nominal morphology. Chapter III provides an overview of scholarship on the orthographical practices and grammatical structure of Classic Lowland Mayan texts. I pay special attention to orthographic compositional (e.g., compounding, infixation, conflation) and spelling (e.g., logographic, logosyllabic, syllabic) practices. I also mention aspects of the verbal morphology, syntactic structure, and discourse structure of Classic Lowland Mayan texts that are relevant to this work.

Unit II contains three chapters. Each is a self-contained case study. Chapter IV provides an overview of scholarship on the structure and content of Classic Lowland Mayan dedicatory texts, after which I present a typology of clause and sentence structures present in the dedicatory formula. Though designed as a self-contained study, this chapter provides a basis for assessing the differences between Late Classic portable texts on pottery and Early Classic and Late Preclassic portable texts on jade and stone objects.

Chapter V provides an overview of scholarship on the structure and content of Classic inscribed jade pendants, with a somewhat detailed discussion of particular glyphs (e.g., T712, T841, T503) and their contexts. I focus on the study of Early Classic jade belt plaques, which are the same type of artifact as that on which the Late Preclassic texts of interest to my dissertation are found. In Chapter VI, the major empirical and analytical focus of this dissertation, I describe and analyze a small subset of Late Preclassic Mayan texts inscribed on jade and stone objects. Four of these are very closely related orthographically, calligraphically, and stylistically, and for that reason I study them in tandem. I discuss their sign inventory, propose glyphic identifications, provide a structural and linguistic analysis of their texts, and propose tentative interpretations of their content.

Lastly, Unit III contains two chapters. In Chapter VII I discuss some of the data presented throughout the dissertation of relevance to the issue of the social context of Late Preclassic Mayan writing. This includes evidence pertinent to the role of interregional (highlands-lowlands) and interethnic (Epi-Olmec/Mayan) interaction, and of inscribed preciosities in the development of Mayan writing and the institution of kingship. In Chapter VIII I discuss the data from Chapter VI in an effort to identify the orthographical practices, grammatical structure, and linguistic affiliation of Late Preclassic texts, which I compare with those of Classic Lowland Mayan texts. I also present arguments for the origin of Mayan orthographic conventions based on the data from the earliest Mayan texts.

UNIT I:

BACKGROUND

CHAPTER I:

THE ORIGIN AND DIFFUSION OF MAYAN WRITING

1.0. Background. The Mayan script is one of several prehispanic scripts indigenous to Mesoamerica (**figures 1.1 and 1.2**), a cultural superarea encompassing central and southern Mexico, all of Guatemala, and parts of Honduras, El Salvador, Nicaragua, and northwestern Costa Rica (Kirchhoff 1943, 1952). The Mayan region (**figure 1.3**), a cultural area within Mesoamerica, is bounded by the Pacific Ocean in Guatemala to the south, the Gulf of Mexico and the Caribbean Sea to the north, the Isthmus of Tehuantepec to the west, the Ulua River in Honduras to the northeast, and the Lempa River in El Salvador to the southeast (Sharer 1995:19). The region can be subdivided into two main subareas: the lowlands to the north, and the highlands to the south. It is defined by the distribution of languages from the Mayan language family at the time of contact (**figure 1.4**).

The historical development of Mayan civilization has been defined for a period of about three thousand years, starting at ca. 1200-1000 B.C. (cf., Hammond 1992; Sharer 1995).² The period of time of major interest in this dissertation is the Late Preclassic (ca. 400 B.C.-A.D. 200). Some Mayan texts have been found elsewhere in Mesoamerica (Foncerrada de Molina 1980; Piña Chan and Navarrete 1967; Balsler 1974, 1980; Taube 2000a) (**figure 1.5**): at Teotihuacan in Central Mexico, Chiapa de Corzo in southeastern

² The temporal scheme for the prehispanic historical development of the Mayan civilization consists of three major divisions: Preclassic, subdivided into Early (1600-1000 B.C.), Middle (1000-400 B.C.), and Late (400 B.C.-A.D. 200); Classic, subdivided into Early (A.D. 200-600) and Late (A.D. 600-1000); and Postclassic, subdivided into Early (A.D. 1000-1250) and Late (A.D. 1250-1697). Two transitional periods are conventionally defined by Mayanists: the Protoclassic (75 B.C.-A.D. 400) and the Terminal Classic (A.D. 800-1000). I use the redefinition of the Protoclassic by Brady et al. (1998:18), which is supported by recent findings suggesting the termination of major Late Preclassic centers took place between A.D. 200-400, rather than around A.D. 100-200, as previously thought (Hansen 2000).

Mexico, Lopez Mateos in Chiapas, and in northern Costa Rica. Such far-flung finds are likely indicative of interregional and interethnic elite exchange among Mayans, Mixe-Zoqueans, Xincans, and possibly Chibchans, rather than of the adoption of the script by such non-Mayan speakers. Below I provide a brief sketch of the early development of hieroglyphic writing in the region, focusing on its geographic distribution and the linguistic affiliations of its users.

1.1. Preliminaries.

1.1.1. Definition and Typology of Writing Systems. I assume the typology of writing systems by Haas (1976) and Sampson (1985). This typology distinguishes two main types of writing systems (**figure 1.6**): glottographic and semasiographic. By glottographic is meant a system in which language is the primary means of encoding information. By semasiographic is meant a system in which language is not the primary means of encoding a message. This typology assumes, in turn, the definition of script or writing system as a graphic, conventionalized, patterned, and potentially permanently rendered set of marks used to communicate ideas in a relatively specific way (Sampson 1985:19).³ This somewhat broad definition of writing is more in tune with the nature of Mesoamerican scripts (Berlo 1983; Boone 1994).⁴

Justeson (1978:21) observes that in glottographic writing, there is “a direct association between graphemes and basic linguistic units.” The linguistic units involved may be of different levels (e.g., phonetic, phonemic, syllabic, morphemic, polymorphemic). Thus, in the same way in which language is regarded as a “system of relationships between meaning and speech-sound” (Sampson 1985:28), a glottographic

³ These assumptions make possible the study of the interaction of the various structural components of writing systems, which typically include glottographic and semasiographic elements. Below I make a minor modification to Sampson’s typology.

⁴ From a social and cultural perspective, the myriad of scripts used in prehispanic Mesoamerica alone, whether of the glottographic (e.g., Mayan, Epi-Olmec, early Zapotec) or semasiographic (e.g., Aztec, Mixtec, late Zapotec) kind, shared numerous representational conventions and sociopolitical and economic uses. It is thus justified to study such diverse types of graphic communication systems as scripts.

script is used to maintain those relationships through visual representation and conventionalization. Because such relationships are maintained, however closely or distantly, glottographic writing can be studied as a linguistic system.⁵

I adopt a traditional typology of glottographic scripts consisting of three main types: logographic, syllabic, and alphabetic. The last two are what Sampson (1985) considers phonographic. Logographic scripts, though, are also phonographic, as in the case of Chinese, where logographs typically take a phonic indicator to determine their meaning and pronunciation (Justeson 1978:26). In the Mayan case it was even more so: in principle any logograph could be used phonetically for near homophonous sequences (see Chapter III). I therefore consider the Mayan script to be essentially phonographic, and assume that logographic systems use signs with both semantic and phonological values; syllabic systems use signs with phonological values consisting of a sequence of at least one consonant and a preceding or following vowel; and alphabetic systems use signs with phonological values consisting of individual phonemes. Logographs may code individual morphemes or polymorphemic stems or words. In the Mayan script both types of logographs were used (see Chapter III).

Lastly, while I do not assume an evolutionary directionality from one type of script to another, as in logographic leading to syllabic leading to alphabetic (e.g., Gelb 1963), I do recognize that certain tendencies in the development of scripts have been demonstrated.⁶ However, such tendencies are not unidirectional.⁷ The most general

⁵ However, glottographic writing does not need to be the same language as the spoken language its users speak, and deviations between graphemes and their corresponding linguistic units, on the one hand, and between the orthographic rules of the script and the grammatical rules of the spoken language, on the other, are commonplace in all known scripts.

⁶ For example, when logographic scripts have been borrowed by speakers of a language different from that of its original users, a tendency to expand the phonetic component of the script is observed (Justeson and Stephens 1993:3), leading to syllabographic and alphabetic systems.

⁷ As Justeson and Stephens (1993) point out too, a syllabic script can result from a formerly alphabetic script, and as Justeson (1986) and Justeson and Mathews (1990) have shown, some scripts may undergo a process of detachment from linguistic principles of

remark one can make, perhaps, is that the sociolinguistic processes surrounding the innovation or adoption of a script are often the most important determining factors in the script's development.

1.1.2. Classification of Mesoamerican Scripts. Over a dozen prehispanic scripts are known from Mesoamerica. Most can be subsumed under two major traditions. Four detailed classifications have been offered by Prem (1973), Coe (1976), Marcus (1976, 1992a), Justeson et al. (1985), Justeson (1986), and Justeson and Mathews (1990). These are illustrated in **figures 1.7-1.9**. There have been three main types of proposals for the origin of Mesoamerican writing systems: monogenesis, polygenesis, and multiregional codevelopment. In this dissertation I am not so much concerned with the status of the Mayan script within these classifications, as I am with the factors for the spread of the Mayan script throughout the Mayan region.

1.1.2.1. Hans Prem. Prem (1973) distinguishes the following eight scripts (**figure 1.7a**): Monte Alban, Intermediate, Late Isthmian, Zapotec, Mayan, Xochicalco, Central Mexican Horizon, and the Postclassic Manuscript Style. The data on **table 1.1** summarize Prem's results.⁸ Prem defined the Monte Alban and Intermediate scripts as the earliest, argued that the Late Isthmian script (Epi-Olmec) was derived from the Intermediate (Chiapa de Corzo, Mayan highlands), and suggested that the Lowland Mayan script was related to the Intermediate (e.g., Kaminaljuyu Stela 10). He notes that there may not be reliable data to determine whether the Monte Alban and Intermediate scripts were derived from a common precursor (1973:47). He classified the script on Kaminaljuyu Stela 10 as Intermediate, and speculates that it may reflect a link between the Lowland Mayan and Intermediate systems. He does not develop a genetic

encoding, as in the case of the Zapotec script, which went from a glottographic to a semasiographic system.

⁸ Prem (1973) uses the following major formal traits: presence or absence of sign sequences, direction of sign sequences, classification of signs according to form and behavior (numerals, main signs, affixes), cartouches, form of bar-and-dot numerals, among others.

classification, but points out in a few instances when a given script was likely derived from an earlier one, or when a given script trait was shared by more than one script.

1.1.2.2. Michael Coe. Coe (1976) distinguishes the following scripts (**figure 1.7b**): Southern Veracruz, Mayan, Teotihuacan, Xochicalco, Nūiñe, Monte Alban, Borgia Group, Mixtec, Aztec, Cotzumalhuapa, Toltec, and Tajin. He is interested in defining the main traits of the Mayan script, and discusses others only in a cursory manner.⁹ The data on **table 1.2** summarize Coe's findings concerning the Mayan script. As is evident in his data, Coe regarded the Mayan script to be closely related to what he called the Southern Veracruz script (1976:110) (i.e., Epi-Olmec). As he points out, only these two groups exhibit the Long Count notation system. He considers the text on Kaminaljuyu Stela 10 to be non-Mayan, while considering the text on the Tuxtla Statuette to be likely Mayan (1976:116-117). He also downplays the role of Olmec iconography in the origin of glottographic writing in Mesoamerica as a whole, or in the origin of Mayan writing in particular (1976:111-112).

Earlier, Coe (1957:608-609) had suggested the existence of an Olmec script, and argued, in support of an earlier hypothesis by Stirling (1943), that the stela cult and the accompanying script and Long Count notation had diffused from the Olmecs in the Gulf Coast of Veracruz and Tabasco (La Venta, Tuxtla Gutierrez), across the Isthmus of Tehuantepec to the central Chiapas highlands and Pacific coast (Izapa, Chiapa de Corzo), to the Pacific coast of Guatemala (Abaj Takalik, El Baul), and into the Mayan region (Leyden Plate). I regard this idea, which can be classified as an example of a monogenesis theory, as a very plausible one still, minus some details (e.g., the Olmecs did not have a Long Count system).

More recently, Coe and Kerr (1998) have distinguished the following Late

⁹ Coe (1976) studies the earliest inscriptions to determine when the major innovations in the time-reckoning subsystems (e.g., bar-and-dot numerals, the Long Count dating system, the Lunar Calendar, etc.) and in some of the orthographical rules (e.g., reading format and order, sign form and placement, etc.) took place.

Preclassic Mesoamerican scripts: Zapotec (Monte Alban), Isthmian (henceforth Epi-Olmec; e.g., La Mojarra, Tuxtla Statuette), Abaj Takalik (Abaj Takalik), Kaminaljuyu (Kaminaljuyu), and Lowland Mayan. They believe there is not enough evidence to specify the interrelationships among these scripts or whether one of them was ancestral to the others (Coe and Kerr 1998:70). At the very least, he argues, there was significant “cross-fertilization between early scripts,” as illustrated by the Long Count system (Mayan and Epi-Olmec), bar-and-dot numerals and Calendar Round (all scripts), and the likelihood that all of them were logosyllabic. Their position, therefore, seems to favor polygenesis with significant borrowing, pending additional evidence that might clarify their relationships. They argue too that the Middle Preclassic Olmecs probably did not have a glottographic script (i.e., “true writing”), but a semasiographic script.¹⁰

1.1.2.3. Joyce Marcus. Marcus (1976, 1992) sees a basic distinction among Mesoamerican scripts between the Oaxacan tradition, and what I call in this dissertation the Southeastern tradition following Justeson et al. (1985). She argues that the Oaxacan tradition emerged, in the form of Zapotec writing, by ca. 700-500 B.C., and that all other (glottographic) scripts from Mesoamerica are much later than this.

Regarding Mayan writing, Marcus (1976) follows Thompson (1972) in suggesting that Kaminaljuyu Stela 10 may be its earliest attestation. Marcus (1976) also offers a summary of the development of some of the most important components of Mesoamerican scripts, shown in **table 1.3**. She suggests, moreover, three alternatives for understanding the development of Zapotec and Mayan writing (1992:34): (1) parallel development (polygenesis); (2) common origin and subsequent independent development (multiregional codevelopment); and (3) initial development by one group and borrowing of script by the other group (monogenesis and subsequent diffusion). She does not think

¹⁰ Interestingly, Coe and Kerr point to an example of a representation of a codex or book on an unprovenanced Olmec pottery vessel possibly dating to ca. 1200 B.C. (1998:63), suggesting a great antiquity for what I would regard an Olmec script tradition, whether that script was based on glottographic or semasiographic principles.

it likely that Mayans or other groups borrowed the Zapotec script, but instead, that there was substantial local autonomy in the development of sign forms, among other features.¹¹

Marcus (personal communication 1995) has more recently suggested that early on two main traditions emerged (**figure 1.8**): the Oaxacan tradition, with the Zapotec script as its first representative, and a second tradition consisting at first of the Isthmian and Kaminaljuyu scripts. She suggests that the Zapotec script was the ancestor to the Mixtec and Central Mexican scripts, and that the Isthmian and Kaminaljuyu scripts were important in the development of Lowland Mayan writing, a position consonant with Prem's (1973).

1.1.2.4. Justeson, Justeson et al., Justeson and Mathews, Justeson and Kaufman, and Kaufman and Justeson. Justeson et al. (1985), Justeson (1986), and Justeson and Mathews (1990) propose an ancestral Olmec script in place between ca. 1100-400 B.C. (late Early Preclassic to end of Middle Preclassic).¹² This Olmec script then diverged into two main branches by ca. 400 B.C. (**figure 1.9**): the Oaxacan and Southeastern traditions. The Oaxacan tradition gave rise to all subsequent scripts from Oaxaca and Central Mexico. The Southeastern tradition gave rise to two subtraditions: Isthmian (henceforth Epi-Olmec) and Maya-Izapan (henceforth Mayan-Izapan).

Justeson (1986) and Justeson and Mathews (1990), furthermore, support two possible scenarios for the origin of Mesoamerican glottographic scripts. In a monogenesis scenario, an ancestor Olmec glottographic script gave rise to the Oaxacan

¹¹ Ayala (1983), in contrast, has proposed not only that the Zapotec script was the original ancestor script, but also that it was later borrowed by Mayans and other groups: she thus favors a monogenesis view.

¹² Justeson et al. (1985), Justeson (1986), and Justeson and Mathews (1990) distinguish between shared formal traits that result from independent innovations, and those that result from inherited or diffused innovations. They assume that a greater degree of arbitrariness of a shared feature correlates positively with a greater likelihood of common descent or diffusion. They are careful to note that common descent may mean either common descent from an ancestor iconography, or from an ancestor script. Also, it may sometimes be difficult or impossible to distinguish between common descent and diffusion retrospectively.

and Southeastern glottographic traditions. In a multiregional codevelopment or monogenesis/polygenesis scenario, an ancestor Olmec iconography (or semasiographic script) was inherited by various groups, who used its forms and conventions, as well as additional, independently developed forms and conventions, as the basis for the other script traditions.

The data in **table 1.4** are from Justeson et al. (1985:41, Table 16) and summarize the degree of agreement in seven different formal traits among various scripts from the Southeastern Tradition. At the time the authors tabulated their data only texts arranged in single columns were known from Abaj Takalik, making it impossible to know whether the local scribes ever used a double-column format, a determination that can only be made securely with the presence of multicolumn texts. Since then, Abaj Takalik Stela 53 was discovered (Orrego 1990): it contains two columns of text reading left-to-right and top-to-bottom, in the typical double-column format of Mayan texts. This single discovery then makes the Abaj Takalik script even more like the Lowland Mayan script.

Justeson and Kaufman (1993) regard the script on Kaminaljuyu Stela 10 as possibly representing a Mixe-Zoquean language, based on similarities of sign forms with the Epi-Olmec script, which they propose represents pre-*proto-Zoquean*, and also based on the possibility that Mixeans may have been present at the site during the Late Preclassic period (Kaufman 1976). They also suggest Stela 10 may be a likely precursor to the Lowland Mayan script. More recently, Kaufman and Justeson (1999) suggest the Epi-Olmec script descends from an Olmec script attested on La Venta Monument 13, and that the sites of El Sitio and Izapa may have used related scripts. They regard the affiliation of Kaminaljuyu Stela 10 as “currently unspecifiable” (1999:4).

1.2. Origin and Diffusion of Writing: Old World Cases. For the purposes of this dissertation, the origin of glottographic writing systems takes place “when symbols from different systems of graphic communication are brought together into a single format in which the principles of no one preexisting system remain sufficient to interpret

the relations of all symbols to one another, while linguistic principles do suffice to determine such relationships” (Justeson et al. 1985:34). The following is a review of some Old World cases for the origin and diffusion of writing.

1.2.1. Sumerian. Schmandt-Besserat (1977, 1992) has proposed one of the most well-supported models for the origin of glottographic writing anywhere in the world. The evidence she uses comes from clay tokens used in the Near East for accounting of economic goods and transactions. The following is the sequence of events she argues led to the invention of glottographic writing there.

(1) Clay tokens in a variety of distinctive geometric shapes were used as a code system for concrete counting; each shape corresponded to a particular good (e.g., ovoids corresponded to jars of oil), and thus, goods could be counted through a one-to-one correspondence between the number of tokens of a specific shape and the number of goods associated with that shape (i.e., three ovoid tokens = three jars of oil). (2) Quantities and goods became fused: markings imitating the shapes of the tokens for specific products were now made on tablets and envelopes to count products, still retaining the principle of one-to-one correspondence by repeating the token shapes the number of times necessary to encode the quantity of goods represented by those shapes. (3) Between 3500-2600 B.C. tokens placed inside envelopes were referred to on the outside of the envelope by means of impressed pictographs. The envelopes were superseded by tablets which used pictographs representing tokens, thus functioning exactly like tokens; the same material, clay, and implement, a stylus with a pointed end, were used on tokens and tablets, and both media dealt with the same subject matter, namely, lists of goods. (4) Around 3100 B.C., the accountants at Uruk dissociated the notion of quantity from that of the counted goods, as evinced in pictographic tablets where for the first time pictographs representing goods (e.g., SHEEP, represented by a circle with a cross) were associated with numerals (e.g., FIVE, represented with five impressed wedges), rendering SHEEP-5 for ‘five sheep’.

In this way, Schmandt-Besserat argues, glottographic writing originated from the convergence of graphic symbols from two originally non-glottographic systems, namely, token shapes and tally marks. Once converged, they became interpretable in terms of linguistic principles. Phonetic principles of representation arose subsequently, but already at this point a glottographic logographic script is present.

1.2.2. Chinese. Glottographic writing is clearly attested first with the Shang dynasty between ca. 1200-1000 B.C. (Chang 1986; Keightley 1989). The earliest texts appear in oracle turtle plastrons and cattle scapulas, which were heated to produce stress cracks, whose pattern was then used for divinatory prognostication; the resulting divination was then carved on the cracked surface. The earliest known Chinese texts, then, pertain to magical divination. As dynastic records of the forecasting powers of kings, moreover, these texts were also the subject of bureaucratic record-keeping, recounting the dates and names of the diviners, and their successes. Writing, astrology, astronomy, and calendrics were thus important to political legitimacy.

Regarding the origins of the script itself, which appears fully formed by ca. 1200 B.C., the most direct evidence for the origin of its graphic forms comes from Eastern Neolithic China (ca. 2000 B.C.). It consists of a complex of BIRD and SUN motifs with possible totemic functions (i.e., as clan names perhaps) incised and cast on fine pots and jades (Chang 1986:81-86). These motifs may have been the earliest logographic notations: they were preserved in later Shang and Chou dynastic bronzes after writing had already developed fully (Keightley 1989:197).

1.2.3. Egyptian. In Egypt, writing appears during the Late Predynastic and the Early Dynastic period (ca. 3100-2650 B.C.), with the predecessors of the First Dynasty (Davies 1990:110). It is still unclear whether it was invented in isolation or with influence or stimulus from Mesopotamia; Davies (1990) argues that if Sumerian is in fact older than Egyptian, and if it in fact played a role in the origin of Egyptian writing, that

this role, at best, would have consisted of what he calls stimulus diffusion.¹³

In any case, one of the first functions of Egyptian writing was the transmission of political ideology, specifically as expressed in votive objects like the slate palette of King Narmer, who “is represented engaged in acts symbolic of his status and authority,” such as captive-taking (1990:110). The first texts are very brief and restricted to names of people, places, and objects. They include dedicatory pottery texts and historical votive texts. The first continuous, linear-format texts, comparable to La Venta Monument 13 and El Porton Monument 1 in Mesoamerica, postdate the earliest recognizable inscribed names: they do not appear until the Old Kingdom period (ca. 2650-2135 B.C.).

1.2.4. Etruscan and Latin. Also of relevance here is the spread of writing in Italy by the Etruscans, who borrowed the Greek alphabet ca. 700 B.C. The Romans borrowed the alphabet during the period of strong Etruscan political/economic/cultural influence in Italy, in particular in Rome, ca. 700-510 B.C. Wallace (1989) regards the Etruscan institution of gift-exchange as key in the process. He argues that it was the ceremonial exchange of preciosities of Etruscan manufacture (gold/silver/copper/ivory jewelry and utensils) with wealthy Latin families that made writing itself a valued commodity, promoting its spread: at this point, the texts inscribed on these precious objects consisted mainly of ownership and dedicatory statements.¹⁴ Latin priests subsequently extended and disseminated the script, applying it to other spheres of social life by ca. 550 B.C.

1.2.5. Runic. By the first century A.D., according to the earliest archaeological evidence, runic writing was innovated possibly as an adaptation of a Mediterranean script

¹³ In other words, given the lack of evidence of graphemic similarities between the two scripts, there is no reason to support a strong diffusion scenario. Still, Davies concedes, it is possible that Egyptians, upon learning of Sumerian writing, may have invented their own script based simply on the idea of writing, not on the specific principles and sign inventory of Sumerian.

¹⁴ An inscribed silver cup from a tomb at the site of Praeneste, dated to ca. 650 B.C., bears an ownership statement reading *vetusia*, (*vetus-ia* proper.name-possessive.suffix) ‘[I am the property of] Vetus’.

(Antonsen 1989). The earliest examples of runic texts, which consist mainly of ownership and dedicatory statements, are found on prestige portable objects (e.g., swords, jewelry, whetstones, and imitations of Roman coins and medallions) made of wood, metal, stone, and bone.¹⁵ These types of texts would suggest an institution of gift-exchange not unlike that between Etruscan and Roman elites.

1.3. Mesoamerica. Here I discuss the case of Middle Preclassic Olmec Iconography (MPOI), as it may be useful in understanding the social context of the origin and diffusion of Mayan writing. The unity of the symbol system present in Middle Preclassic Olmec-style artifacts from across Mesoamerica has been widely recognized for some time (Coe 1965; Covarrubias 1945, 1957; Joralemon 1971). However, the orthographic conventions (as opposed to the pictorial conventions) of this system have been the subject of only a few scholarly works. First I say a few words about the preferred media for MPOI, and then about its orthographic conventions. I also mention the major themes present in these celts, and compare them with those on the earliest texts from the Old World traditions.

1.3.1. Middle Preclassic Olmec Iconography. A large corpus of incised jadeite and greenstone objects (**figure 1.10**), many shaped like celts, constitutes the primary medium for the MPOI (e.g., Coe 1965; Joralemon 1971), although monumental stone carvings, incised and painted pottery, cave murals, and ceramic roller stamps were also important media. As shown by Taube (1995), jade plaques were worn by humans and deities represented in pictorial art as pectoral pendants, belt pendants, or strapped to arms and legs (**figure 1.11**). It is this artifact type that has provided the most tantalizing clues to the origin of writing in Mesoamerica.

1.3.1.2. Orthographic Conventions. Justeson et al. (1985), Justeson (1986), and

¹⁵ For example, the inscription on the Stenmagle wooden box reads hagiradaz | tawide | for Hagirādz : tawidē ‘Hagirādz made [it]’, while the inscription on the Nøvling clasp reads bidawarijatalgidai for Bīdawarijaz talgidē ‘Bīdawarijaz carved’ (Antonsen 1989:153).

Justeson and Mathews (1990) have shown that the following conventions, shared by all subsequent Mesoamerican scripts, were already present in the MPOI of jade celts: (1) the pars-pro-toto artistic convention (cf., Coe 1976), (2) the vertical linear format convention, and (3) the left-facing sign orientation convention. These authors attribute the origin of the vertical linear format convention to the formal constraints imposed by the most common medium for the MPOI: vertically-suspended jade and greenstone plaques. They also argue that the pars-pro-toto convention, characterized by the use of a part of the whole (e.g., GOD/PERSON'S.HEAD) to represent the whole (e.g., GOD/PERSON) (**figure 1.12**) may be attested as early as ca. 1200 B.C. in Olmec monuments from San Lorenzo, Veracruz, Mexico, in the Olmec heartland.

In Mora-Marín (1996) I point out that both Painting A-1 (**figure 1.13a**) from Oxtotitlan Cave, Guerrero, dated to ca. 900-700 B.C. (Grove 1971), and the squarish Ahuelican Greenstone Tablet (**figure 1.13b**), also likely from Guerrero and Middle Preclassic (1000-400 B.C.) in age, exhibit a clear vertical linear format. Neither text is constrained spatially along the vertical axis, suggesting either: (a) that the vertical elongation of greenstone plaques and pendants was not a factor in the conventionalization of the vertical linear format; or (b) that it was already conventionalized by ca. 900-700 B.C. in all media types.¹⁶ Whether these texts were glottographic or semasiographic, the vertical linear format convention of Mesoamerican writing is already in evidence. Also, both examples show hints of an attempt at regularizing the size of signs.¹⁷ The same can

¹⁶ In the case of the Ahuelican Greenstone Tablet, various authors agree that it represents a “plan” of the Olmec cosmos (Reilly 1995; Taube 1995:89), rather than spoken utterances. It contains several icons possibly corresponding to different locations of the Olmec “cosmos” in their correct spatial location relative to one another, i.e., SKY on top, MOUNTAIN/TEMPLE in the middle, and CAVE/UNDERWORLD at the bottom.

¹⁷ In Mora-Marín (1996) I also argue for the likely role of ceramic roller stamps in the development of the horizontal reading format (cf., Gay 1973; Kelley 1966). Some of the first recognizable logographs in Mesoamerica (e.g., Mayan T544 K'IN ‘sun, day’) are present early on in ceramic roller stamps, and in the so-called “sky-bands” on monuments as well as on the rims of pottery vessels, which exhibit a horizontal linear format that is also attested in later Mesoamerican scripts.

be said for the Sumerian case (see above): a horizontal linear format and regularized sign size format arose prior to the dissociation of counted units from the counted goods that suggests the existence of a glottographic system.

The origin of linguistic encoding may be seen in the representation of sequential actions, such as in the Middle Preclassic Humboldt Celt (**figure 1.14**) (Justeson et al. 1985; Justeson 1986; Justeson and Mathews 1990). In the Humboldt celt a series of ritual actions may be narrated by means of a “rudimentary logography” in which the segmented body parts (greeting arms and scattering hand) and isolated implements (ritual and martial objects) refer to related actions (Justeson and Mathews 1990:91). This segmentation of body parts depicting actions could therefore constitute the first logographic signs for verbs; in later Mesoamerican scripts, arms and hands in specific gestures or with specific implements were typical signs for verb roots and stems.

Linguistic encoding may also be seen in the juxtaposition of numerals with icons referring to names, as in Painting 3 (**figure 1.15**) from Oxtotitlan Cave, Guerrero, Mexico, and dated to ca. 900-700 B.C. (Grove 1971). There, the notation 3/6-ALLIGATOR is present, and shows the juxtaposition of numeral signs and day-name signs in the correct linguistic order for a Mixe-Zoquean language, the most likely language of the Olmecs (Campbell and Kaufman 1976; Justeson et al. 1985). Each type of sign may have originated in separate graphic systems; once juxtaposed in the correct linguistic order they became interpretable in terms of linguistic principles as ‘3/6 Alligator’ (Justeson 1986). Thus, this 3/6-ALLIGATOR collocation could be the earliest example of the dissociation between quantities and counted entities, similar to that first attested at Uruk around 3100 B.C. But while Uruk scribes were motivated by economic transactions, Olmec scribes were motivated by ritual calendar-name reckoning.

The conventions of MPOI, then, were the conventions of a true script, by Sampson’s (1985) definition, and likely gave rise to the shared conventions of subsequent scripts in the region. Whether the Olmec script was a glottographic system, is a question

that only future archaeological, art historical, and epigraphic research can resolve.

1.3.1.2. Subject Matter of MPOI. The MPOI displays evidence of the political legitimization and name-tagging themes common in early writing systems the world over. Reilly (1990, 1991, 1995) has very convincingly argued that Olmec celts and other Olmec-style media convey the fundamental precepts of Olmec political ideology, such as the notion of the ruler as a shamanic performer who can magically become the Maize God and the world axis, or in other words, the means of communication between sky and earth (**figures 1.16a,b**). Some celts in fact bear an abbreviated form, perhaps as a schema, of this cosmological model (**figures 1.16c,d**). These objects, therefore, constitute a case similar to that of the early Egyptian votive objects.

At the same time, Joralemon (1988) and Taube (1995) have argued that Olmec jade celts were in fact conceived as manifestations of maize ears and the Maize God (**figure 1.17**). Interestingly, some of these plaques were incised with what many authors agree constitutes a Maize God portrait (**figures 1.18a,b**), while some were incised simply with its abbreviated form, a MAIZE.EAR motif (**figure 1.18c**). These examples strongly suggest to me, given later Mesoamerican scribal practices and also the prevalence of name-tagging in early scripts the world over, that such signs were meant as labels for the objects themselves as 'maize ears'. Consequently, it is likely that the name-tagging theme may also be present in the MPOI system, and that such motifs may have constituted early logographic signs.

In Chapter V I delve into more detail concerning the subject matter of the MPOI and its relationship to early Mayan writing. For now it is only necessary to point out that the origin and diffusion of MPOI was probably facilitated by the long-distance exchange of inscribed preciosities of primarily ritual use, such as jade celts, worn as part of ceremonial costumes (Justeson 1986; Taube 1995) and likely functioning as tinklers (see Chapters V and VI), and Olmec-style ceramic containers used in feasting contexts. The exchange system had been established since the Early Preclassic (Flannery 1968; Hirth

1992), and thus the exchange of incised celts was facilitated by several centuries of prior exchange in preciosities of various types. The celts conveyed the fundamental precepts of Olmec political and religious ideology, and may also have been name-tagged. Given their political ideological themes and uses, as well as the exotic and magical nature of jade, the celts may have constituted an important medium of political economic exchange, helping to integrate Mesoamerica as a cultural and economic whole (e.g., Blanton and Feinman 1984; Blanton et al. 1993; Carmack 1996; Schneider 1977).

1.3.2. Earliest Known Scripts. The dating of the earliest texts in Mesoamerica, recognized as such based mainly on visual characteristics (i.e., linear format, left-facing sign orientation, regularized glyph-block size), is a subject of much debate. There are three early monuments that exhibit these traits and which are very likely related to the Zapotec, Epi-Olmec, and Mayan scripts (**table 1.5**): San Jose Mogote Monument 3 in the Valley of Oaxaca, La Venta Monument 13 in Tabasco (Olmec heartland), and El Porton Monument 1 in highland Guatemala.

Marcus (1976) regards San Jose Mogote Monument 3 (**figure 1.19a**) from the Valley of Oaxaca, as dating to ca. 700-500 B.C., and therefore as the oldest inscribed Zapotec monument, and the oldest inscribed Mesoamerican monument (Flannery and Marcus 1983; Marcus 1976). Monument 3 contains two glyph blocks made up of a day sign and a numeral, and portrays a slain prisoner; the two glyphs may provide the name of the prisoner, since in prehispanic Mesoamerica people were often named for the ritual calendar day in which they were born. I think this interpretation is correct, and highlights two important conclusions: the inscribing names in the earliest texts attested, and the use of writing as a propagandistic and legitimizing tool (Marcus 1992a). Cahn and Winter (1993) have presented iconographic and stratigraphic arguments for a later dating of Monument 3, closer to ca. 500-300 B.C., and coeval with the Monte Alban danzantes and other inscribed monuments also from the Oaxaca Valley. I agree with Cahn and Winter's dating, and regard Monument 3 as dating to ca. 500-300 B.C.

Another early script is attested on Monument 13 from La Venta (**figure 1.19b**), from Tabasco in the Gulf Coast of Mexico, the Middle Preclassic Olmec heartland. The monument, dated to ca. 600-500 B.C., exhibits a vertical column of text, and may refer to an action performed by a portrayed individual.¹⁸ Kaufman and Justeson (2000) suggest the script is likely Mixe-Zoquean: the Epi-Olmec script, which Justeson and Kaufman (1992, 1993, 1997) have demonstrated represents a form of pre-*proto-Zoquean*, is attested in this region during the Late Preclassic and Early Classic periods. Tres Zapotes Stela C, La Mojarra Stela 1 (**figure 1.20**), and the Tuxtla Greenstone Statuette, are Late Preclassic examples of Epi-Olmec texts from this region with Long Count dates of 32 B.C., A.D. 157, and A.D. 162, respectively. Elsewhere, in the Chiapas highlands along the Isthmus of Tehuantepec, Chiapa de Corzo Stela 2, with a Long Count date of 36 B.C., and the Chiapa de Corzo pot sherd, dated to ca. 300 B.C., bear texts in the same script. An unprovenanced text, the O'Boyle Mask, is in the same script, while additional texts in this script may include the Alvarado Stela and the El Sitio celt (**figure 1.21**), and it seems likely that the poorly attested Izapan script was in fact Epi-Olmec.

Lastly, the radiocarbon dating of Monument 1 from El Porton (**figure 1.22a**) in the Salama Valley in the Mayan highlands region is of ca. 450-350 B.C., henceforth 400 B.C. (Sharer and Sedat 1987). Thus, the time lag between the earliest Oaxacan texts (700-500 B.C. or 500-300 B.C.) and the earliest texts elsewhere (600-500 B.C. and 400 B.C.) is not too vast, and they could all in fact date to within a century of each other.

1.3.3. The Mayan Script. As already mentioned, Justeson et al. (1985) have compared the Late Preclassic scripts from Southeastern Mesoamerica with Classic Lowland Mayan (CLM) script in order to determine the degree of relatedness among them. They studied the distribution among these scripts of seven formal features of the

¹⁸ While Marcus (1976:47) regards Monument 13 as dating to ca. 500-400 B.C., based on initial reports of its context by Drucker, Heizer, and Squier (1959:267), the dating for this monument and its stratigraphic context have been pushed back with radiocarbon dates by Berger et al. (1967:5) to ca. 600-500 B.C.

CLM script that are very unlikely to be developed independently in more than one script.¹⁹ This comparison led them to define two major script subdivisions within the Southeastern tradition: (1) a Greater Izapan subdivision, attested at Kaminaljuyu, Abaj Takalik, and El Baul; and (2) a West Isthmian (Epi-Olmec) subdivision, attested at Cerro de las Mesas, Tres Zapotes, and in the Tuxtla Statuette. The former subdivision is the one with the closer agreement with the CLM script: the Kaminaljuyu script. They point out, shows a 94% agreement in the seven features with the CLM script. This type of analysis suggests that the CLM script and the script from Kaminaljuyu, Abaj Takalik, and El Baul were closely related. Moreover, Justeson et al. (1985) conclude that the Abaj Takalik script shows an index of agreement with the CLM script of 80%. At the time of their writing no double-column format texts had been discovered at that site. However, the subsequent discovery of Stela 53 at Abaj Takalik (Orrego 1990), with a double-column format, raises the agreement index with the CLM script to 83%. While these data could be interpreted to reveal a genetic classification of scripts, they could point to intense contact and diffusion among the scribal traditions (Coe and Kerr 1998). This comparison does not address the questions of shared sign inventories or of their linguistic affiliation.²⁰

¹⁹ These include: (1) double-column format, (2) degree of variation in vertical size of glyph block, (3) pedestal below some day signs, (4) enlarged calendrical statements, (5) Long Count dates, (6) Long Count initial in its column, and (7) day coefficient to left in long count.

²⁰ For many Mesoamericanists, shared sign inventories and orthographic conventions are not sufficient to call two scripts the same. A shared linguistic affiliation is usually necessary. Clearly, this is a definitional problem: What is a script? What distinguishes two related scripts from one another? In the case of Epi-Olmec and CLM writing a close historical relationship between the two scripts is obvious, as suggested by Justeson and Kaufman (1993) and Lacadena (1996b). They share numerous signs, orthographic conventions, and calendrical components. However, some shared signs do not have the same values or functions. In other cases shared signs have similar forms in Middle Preclassic Olmec iconography, suggesting common descent. Still, one can distinguish the two scripts based on formal criteria. For example, the Epi-Olmec script is exclusively single-columnar, while the CLM script shows both single- and double-column formats. In the end, for most scholars, two factors take precedence in their

The first centralized polities (complex chiefdoms and archaic states) in the Mayan region arose in the Mayan highlands at Kaminaljuyu in the Guatemala Valley, and El Porton in the Salama Valley (Sharer and Sedat 1987; Valdés and Hatch 1995), and in the Mayan lowlands at Nakbe and El Mirador (Clark, Hansen, and Pérez 1998), both regions connected by trade in obsidian and other goods (Fowler et al. 1988).

The earliest monumental texts, still undeciphered, are Monument 1 (**figure 1.22a**) from El Porton, dated to ca. 450-350 B.C. based on radiocarbon evidence (Sharer and Sedat 1987), and Stela 10 (**figure 1.23a**) from Kaminaljuyu, dated to ca. 400-200 B.C. based on its stratigraphic association with Verbena phase sherds (Fahsen 1996). El Porton Monument 1 shows a single column of four surviving glyphs. The accompanying pictorial image has been thoroughly destroyed. One of the glyphs (**figure 1.22b**) has been argued by Justeson and Mathews (1990) to be a possible predecessor of T644 SIT, a CLM glyph used in accession statements.²¹ Kaminaljuyu Stela 10 contains two double-column hieroglyphic captions, headed by oversized day signs that closely resemble in style one monument from Izapa (**figure 1.24a,b**).²² Sharer and Sedat (1987) suggest El Porton was the center of a chiefdom encompassing the Salama Valley around the time of Monument 1, and that Kaminaljuyu soon incorporated it, and therefore the Salama Valley, into its

distinction: the presumption or realization that the scripts represent different languages, and the knowledge that they were used by different cultural groups. In fact, the Tuxtla Statuette, an Epi-Olmec text, was for quite some time thought to be Mayan (e.g., Coe 1957, 1976). This was prior to the understanding of the Olmec and Epi-Olmec chronologies, and prior to the discovery of La Mojarra Stela 1, which established beyond dispute the coherence of the Epi-Olmec script. I too consider the two scripts distinct but closely related.

²¹ The last glyph of the text has been argued by Fahsen (1996) to be a possible predecessor of T747 VULTURE, read **7AJAW** for **7ajaw* 'lord, ruler' in some contexts.

²² The lower text may have been longer: for one, the bottom-most glyphs of all four columns are incomplete; and also, if one extrapolates from the squarish shape and dimensions of the throne, its original state likely contained a space at the bottom of the carved surface for six glyphic rows below the last surviving row. This would suggest that 24 glyph blocks could be missing, placing the estimate for the length of the bottom glyphic caption at 64 glyph blocks, and for the monument as a whole at about 90 glyph blocks, counting the day names and their coefficients.

hegemony, suggesting it had achieved a state-level of organization.²³

Following these two monuments are Stela 2 (**figure 1.25a**) and the Chicanel pot sherd (**figure 1.25b**) from El Mirador (central lowlands of Guatemala). The former is dated to ca. A.D. 1-100 (Hansen 1991), and the latter to ca. 200-100 B.C. (Hansen, personal communication 2000). Stela 2 shows a finely incised double-column text, while the Chicanel sherd shows a glyph that may read FLOWER (see Chapter VI).²⁴ According to Clark, Hansen, and Pérez (1998), El Mirador may have become the center of a state by ca. 300-200 B.C.

Pahl (1982) has observed the probable presence on Polol Altar 1 (**figure 1.26**), found at the site of Polol also in the Peten region, of a long count inscription. He suggests a possible identification of 7.??/19.??/14.??, implying a possible range from 176 B.C.-A.D. 35. The monument is badly weathered, but in terms of artistic style and composition it shares features with several monuments from the highland regions, especially from Abaj Takalik. Pahl compares Polol Altar 1 and Abaj Takalik Stela 2 (**figure 1.27a**), the second one having a long count consisting of only two surviving coefficients, 7.16, and thus falls within a possible range of 235-18 B.C. Like Polol Altar 1, Abaj Takalik Stela 2 presents two human figures facing one another and separated, as in Polol Altar 1, by a glyphic column from which only part of a long count survives.

By the end of the Late Preclassic, hieroglyphic writing with single- and double-

²³ A chiefdom is based on kinship ranking under a hereditary ruler, has high-ranking warriors, and central accumulation and redistribution, while a state is based on a class hierarchy under a king or emperor, has a standing army, tribute, taxation, and a code of law. In terms of settlement hierarchy, a chiefdom has a three-tier hierarchy, while a state has a four-tier hierarchy.

²⁴ While Hansen (1991) previously stated that the text had not been carved from rows 1 through 5, starting instead at A6, more recently he has shown that there are in fact some traces of glyphs above the sixth row (Hansen, personal communication 2000). Demarest (1984) cites the opinion of Peter Mathews and Dorie Reents-Budet who suggest the glyph on the Chicanel sherd might read 7AJAW. While I agree that the form of the glyph is related to the T533 sign read 7AJAW, I argue in Chapter VI that this particular usage suggests a reading NIK/NICH 'flower', which T533 also had.

column formatting was in use throughout the Mayan region (**figures 1.28-1.32**), from Chalchuapa, Abaj Takalik, and El Baul in the Pacific piedmont of El Salvador and Guatemala (Anderson 1978; Graham 1979; Sharer 1978), to Kaminaljuyu in the Valley of Guatemala (Fahsen 1994, 1996), El Mirador, Tikal, Polol, and San Diego Cliff in the central lowlands (Hansen 1991), Kendal, Pomona, and Kichpanha in the eastern lowlands (Gann 1918; Gibson et al. 1986; Justeson, Norman, and Hammond 1988; Schele and Miller 1986; Shaw 1996; Thompson 1931), and Loltun and Edzna in the northern lowlands (Freidel 1988; Schele and Grube 1996). Whether the script found at these sites was the same script, and whether it represented the same language, are questions that I address in this dissertation (see Chapter VII).

In terms of media there appear to be two preferences during this period: portable preciosities and monumental stelae. The two differ in one major trait: all portable texts are lacking in calendrical and astronomical data, while most monumental texts have preserved mostly calendrical and astronomical data. Of the portable preciosities only five (Pomona jadeite earflare, Kichpanha bone implement, the Kendal jadeite axe and jadeite bivalve shell effigy, and Hatzcap Ceel diorite axe) have been excavated archaeologically. These can be dated by their ceramic associations to the Protoclassic period, ca. 70 B.C.A.D. 400 (**figures 1.30-1.31**). The pot sherd from El Mirador dates to ca. 200-100 B.C., making it the earliest datable portable text. The portable texts, as I argue in this dissertation, generally contain dedicatory and name-tagging themes, characteristic of portable inscribed preciosities in other early script traditions.

The earliest texts with calendrical information are inscribed on monumental media and are all from the Mayan highlands (central highlands, Pacific piedmont): Abaj Takalik Stela 2 (236-18 B.C.), El Baul Stela 1 (A.D. 32), and Abaj Takalik Stela 5 (A.D. 125) (Justeson 1997; Justeson et al. 1985). A highland precedence for the origin of the script has been postulated and discussed by various authors (e.g., Freidel 1981; Graham 1977; Sharer 1989), who have also argued that the early presence of the calendar in the

Mayan highlands suggest a codification and institutionalization of priesthood. Still, if Pahl (1982) is correct, Polol Altar 1 could date to as early as 176 B.C., a possibility that could diminish the appearance of a highland precedence.

Regarding the sociolinguistic geography of the time, Kaufman (1976, 2000) has suggested that El Porton may have had Greater K'iche'an speakers, while Kaminaljuyu may have had Mixean, Poqom-Mayan, or Xincan speakers.²⁵ Loanword evidence (see Chapter II) suggests the presence of a dominant Ch'olan-Tzeltalan minority in the Mayan highlands and piedmont, quite possibly at Kaminaljuyu and Abaj Takalik (Campbell 1978, 1984; Fahsen 1996; Justeson and Fox 1989; Justeson et al. 1985). Although Abaj Takalik, El Baul, and Chalchuapa are found in what Kaufman (2000) defines as Xincan territory at this time, no Xincan script is known from the contact period. At Chalchuapa the script persisted until the Late Classic (D. Anderson 1978). But from the end of the Late Preclassic on the script would be used mostly in the lowlands. The lowlands were occupied by this time by Yukatekans, who were the earliest Mayan immigrants there, and by Ch'olan-Tzeltalans, who Kaufman (2000) suggests may have been present at El Mirador by ca. 300-200 B.C.

1.4. The Political Economic Context of Writing in Classic Lowland Mayan Society. The Classic period saw the most widespread distribution of the script, the greatest amount of production of texts, the greatest variety of genres and media, and probably the highest rate of literacy of prehispanic Mayan society (Coe and Kerr 1998; Houston 1994, 2000; Justeson 1978; Kubler 1973; Mathews 1985; Stuart and Houston 1992). The ethnohistorical evidence indicates that literacy was restricted to elites (Justeson 1978; Marcus 1992a, 1992b); it was priests and rulers who were most likely to be literate in the highlands and lowlands during the colonial period, though in the

²⁵ In Chapter VI I identify a glyphic phrase in Kaminaljuyu Stela 10 that also appears in two Late Preclassic and clearly Mayan texts. In Mora-Marín (1999c) I attempt a detailed analysis of the text, and suggest that a Mayan linguistic affiliation seems more likely than a Mixe-Zoquean affiliation.

highlands some merchants were literate as well (Carmack 1981; Tozzer 1941; Thompson 1972).²⁶ During the Classic period men and women were priests and scribes (Schele 1995; Coe and Kerr 1998), perhaps a dozen or more scribes were under the service of the ruling lineages at some sites (Montgomery 1994; Tate 1997), and a few probably under the service of competing lineages, as in the case of the Colonial-period K'iche's (Carmack and Mondloch 1989:14).

Epigraphic evidence indicates site-internal scribal hierarchies (Schele 1990), while iconographic evidence shows they were part of self-defined groups with their own patron deities (Coe 1977; Coe and Kerr 1998). Archaeological evidence suggests the scribal groups with significant power (Fash 1991), and high status as early as 100 B.C.-A.D. 100, based on the scribe's burial in which the Kichpanha inscribed bone was found (Gibson et al. 1986; Shaw 1996). This is supported by the gift-exchange of inscribed preciousities between rulers (Houston et al. 1992; Reents-Budet 1994; Stuart 1995), by evidence for the social and political statuses of scribes from their titles and genealogies (Stuart 1989), and by instances of high-ranking scribes taken as captives by enemies of their lords (Mora-Marín 1999a).

There were three main types of textual genres: dedicatory texts, referring to the ownership, crafting, and dedication of objects, monuments, and buildings; historical texts, referring to dynastic history; and cosmological texts, referring to cosmological events and supernatural beings. In general, dedicatory texts are found more frequently in portable media, historical texts in monumental media, and cosmological texts in either type of media. The last two types are the most likely to contain calendrical and astronomical components. Calendrical and astronomical calculations had two main applications: dynastic history and astrology. A temporal trend can be described in terms of genres and

²⁶ There are a few texts on portable objects at Kaminaljuyu during the Early Classic period (Kidder and Smith 1955), and at Chalchuapa on monumental media during the Late Classic period (D. Anderson 1978), suggesting the highland tradition continued. However, most of the textual material comes from the Mayan lowlands during this time, with a few neighboring highland sites as exceptions.

media.

The earliest monumental inscriptions are more historical/cosmological, with few dedicatory statements. Soon after A.D. 600, however, dedicatory statements become more and more common. The differences in genres/media are paralleled by orthographical differences. In monumental media, each glyph block generally consists of a syntactic unit, be it a single-word phrase, a multiple-word phrase, or an entire clause (Justeson 1978, 1986, 1989). In portable media, in contrast, a glyph block may consist of a single syllabic sign or a syntactic unit (Mora-Marín 1999a). At sites where dedicatory genres become prominent during the Late Classic (e.g., Xcalumkin, Chichen Itza), the practice of dividing syntactic units across glyph-block boundaries is more common (Mora-Marín 1999a). This could suggest an increasing freedom of scribes to decide the form, style, and content of public texts. Not surprisingly, the named scribes carried political and religious titles (**figure 1.33**), explaining the aforementioned freedom, and pointing to increasing political-economic power among scribes during the Late Classic period.

The most important promoter of literacy throughout the Classic period was the institution of centralized rulership, founded on the principle of the charisma of divine lineages and divine lords (Freidel and Schele 1988; Houston 2000; McAnany 1997; Schele and Freidel 1990; Stuart and Houston 1992). This institution dictated the genres and themes of public inscriptions for most of the Classic period. Among such themes were dynastic history and ancestor veneration. The script was used to establish or demonstrate ancestral legitimacy over the use of lands and other resources, as argued by McAnany (1997).

A case in point is that of Copan, a site located in the eastern lowlands. Fash and Stuart (1991:151) describe Stela 63 (**figure 1.34**) as the “earliest clearly contemporary date in the Copan inscriptions,” dating to A.D. 435. They note something interesting about its location:

This monument was placed inside a structure now buried within the pyramidal base of the final version of Structure 10L-26. The fill used to bury this early edifice was placed there 200 years after the construction of the building. This indicates that this stela and the structure built to house it were accessible and in use – perhaps sacrosanct – for a very long time, before finally being absorbed in a much later construction. This conclusion is supported by the fact that four subsequent rulers made reference to the date, event, and protagonist recorded on Stela 63.

In this regard, Stela 63's text is very revealing. It refers to the coming to power of K'inich Yäx K'uk' Mo', the founder of Copan's ruling lineage. Thus, the inscription commemorated the establishment of the ruling lineage, and was placed inside a building, possibly in part for protection, and potentially kept accessible for future reference, though this latter possibility is not confirmed by the evidence (i.e., the later references to the person named in this monument may have been due to other texts, possibly in historical books). Another type of evidence that suggests ancestral legitimacy as one of the main political uses of writing concerns inscribed portable objects said to be the possessions of ancestors and gods (**figure 1.35**).

Writing was used not only to demonstrate ancestral legitimacy through documentation of the past, but also to manufacture legitimacy in times of need. An example of this is found also at Copan. As described by Fash and Stuart (1991), Copan subjugated the neighboring site of Quirigua until A.D. 738, when the Quirigua ruler captured and decapitated the thirteenth ruler of Copan, Waxäkläjun-u-B'ah-Chan-K'awil, and Quirigua achieved its independence. The ruling dynasty at Copan, as a result, lost legitimacy. The construction and dedication of the Temple of the Hieroglyphic Stairway (Structure 10L-26) was undertaken in order to glorify the history of the ruling dynasty prior to the death of the thirteenth ruler (Fash and Stuart 1991:166-167). Literacy practices may have been the prerogative of all major elite lineages. Recently, Grube and Martin (2001) have presented compelling evidence for the overthrowing of royal lineages

by competing lineages at sites like Tikal; there were no apparent breaks, however, in the historiographic tradition, and the texts commissioned by the new royal lineage even make reference to the legitimate succession of the new king counted from an original king who belonged to a different lineage.

Literacy was also used to demonstrate political power by lineages other than the ruling lineage. At Copan, powerful nonroyal lineage heads recorded the dedication of their own buildings by the supreme Copan ruler, who in the process conferred legitimacy to the ceremony and the dedicated structures (Fash and Stuart 1991:169-170). Thus, writing and literacy were political tools par excellence for the Mayans, especially at the hands of the royal lineages who used it to claim and reclaim ancestral legitimacy.

However, as the Classic period progressed a greater diversity of genres becomes apparent at the same time as the persona of the priestly scribe become more self-promoting in the texts (Houston 1993, 2000), and more politically and economically powerful (Fash and Stuart 1991). In fact, even though the script gradually came into disuse in the western (e.g., Palenque), central (e.g., Tikal), southern (e.g., Dos Pilas), and eastern (e.g., Copan) lowlands, where the inscriptional and archaeological records first show hints of the growing power of scribal groups, it became more widespread in the northern lowlands of the Yucatan peninsula, with interesting changes in genres and themes: the persona of the divine king was no longer present, the institution of decentralized rulership gained importance, and priestly scribes became more active political actors (Grube 1996; Schele and Freidel 1990).

These Late Classic trends may be responsible for the increasing emphasis in the gift-exchange and tribute-exaction themes on pottery vases and other media (Reents-Budet 1994; Stuart 1995). As Stuart (1995) argues, the Tribute Presentation Theme becomes more common in polychrome vases (**figure 1.36a**), and even makes incursions in monumental media (**figure 1.36b**). Gift-giving of preciosities had previously had an important impact. On a text inscribed on the back of a slate mirrorback disk (**figure**

1.37a) a lord from the city of Uaxactun is mentioned (**figure 1.37b**); moreover, the text suggests that it is possible that the disk itself may have been a gift from an El Peru lord to the Uaxactun lord (**figure 1.37c**), a possibility that David Freidel (personal communication 2000) has pointed out may very well attest to the formation of an alliance between Uaxactun and El Peru, two enemies of Tikal. (Uaxactun would soon after be defeated and conquered by Tikal). Due to the political economic implications of gift-giving and tribute-exaction, the dedicatory genre exploded during the Classic period (**figure 1.38**), a time of great political volatility, and so did most likely the roles of priests and artisans, who were the ones who crafted, inscribed, sanctified, and presented the preciosities.

1.5. The Sociolinguistic Context. Justeson and Fox (1989), in what could be called the Weak Ch'olan Hypothesis (WCH), argue for interlingual (Ch'olan and Yucatekan) literacy throughout most of the Classic period, and for a Ch'olan preeminence in the structure and orthography of the script, as well as for two periods of intense expansions of the phonetic component of the script: one at Palenque and other western sites, and another at Chichen Itza and other northern sites. In contrast, Houston, Robertson, and Stuart (2000), in what could be called the Strong Ch'olan Hypothesis (SCH), argue that all Classic sites wrote a prestige language they have dubbed Ch'olti'an, which was the direct ancestor of Ch'olti' and Ch'orti' (i.e., proto-Eastern Ch'olan), with few or no Western Ch'olan and Yucatekan texts in the region. Lacadena and Wichmann (1999, 2000) have recently argued for a more complex scenario including Western Ch'olan, Eastern Ch'olan, and Yucatekan affiliations of sites, and even the possibility of some Tzeltalan texts.²⁷

Script diffusion may also be attested during the Classic period; in this case, the interaction may have been between Mayan and Teotihuacan scribes during the Early

²⁷ This may be especially applicable to sites whose inscriptional records begin rather late in the Classic period and are located near highland regions of Chiapas, where Tzeltalan speakers are located, such as Tenam Rosario (Montmollin 1997).

Classic period (Houston 2000; Proskouriakoff 1993; Stuart 1999; Taube 2000b), and between Mayan and Tabascan scribes during the Late Classic period (Justeson et al. 1985; Thompson 1950). In Central Mexico, at Xochicalco and Cacaxtla, there appear to be unambiguous examples of Mayan scribal and artistic influence during the Late Classic (Foncerrada de Molina 1980; Taube 2000b). This interaction reflects broader sociopolitical developments in Mesoamerica, such as shifts in control of trade routes and migrations.

During the Postclassic period the script was rarely found in public architectural or sculptural contexts, with few exceptions at Mayapan and Tulum (Grube 1996; Masson 2000). There was some significant script diffusion among Central Mexican (Toltec) and Mayan scribes, reflected not only in stylistic changes, but also in borrowed Nahuatl deity names (Bricker 2000; Taube 1992; Taube and Bade 1991). The Chontals may have used hieroglyphic writing during this time and until shortly after the Spanish conquest. From the time of contact with the Spanish to 1720, the script was in use among Yucatec- and Itzaj-speaking priests and prophets, but was gradually replaced by the Latin alphabet due to the violent reaction of the Spanish against literacy in the indigenous script (Coe 1988; Chuchiak 2000; Jones 1998; Thompson 1972; Tozzer 1941). Nevertheless, continuities in the scribal practices of the prehispanic period are evident in some colonial alphabetic documents (Bricker 1989, 2000), and it is quite possible that hieroglyphic books may still survive to this day in clandestine contexts (Chuchiak 2000).

1.6. Conclusions: Preciosities and the Origin and Spread of Writing. As is clear from the case studies presented so far, portable preciosities with inscribed texts may have been instrumental in the transmission of art, writing, and ideology. Justeson (1986) and Justeson and Mathews (1990) have made this argument for the Olmec-style Middle Preclassic script: Olmec-style celts and pottery, as part of a ceremonial and cosmological complex involving specific types of ritual implements (Grove 1992), and specific types of political ideological programs (Reilly 1990), were key in the diffusion of Olmec writing

throughout Mesoamerica. Whether the Olmec script was semasiographic or glottographic, the fact remains that its representational principles and many of its specific signs were adopted by Zapotecs, Epi-Olmecs, and Mayans, who would go on to develop glottographic scripts. Olmec celt-iconography was likely used for the transmission of political ideology and for name-tagging. Further study, at the very least, will likely reveal names of rulers and gods associated with their portraits.

Stuart (1995) and Mora-Marín (1995b, 1996, 1997a) have emphasized the role of name-tagging on portable objects in the origin and diffusion of writing. Stuart relates name-tagging to the origin of phoneticism, which in turn, he argues leads to “true writing,” or in other words, glottographic writing. While I do not think that phoneticism is necessary for rendering names of people or objects, as the early Chinese and Sumerian pictographs or logographs suggest, or that phoneticism is necessary to achieve glottographic writing, as the logographic writing attested in the pictographic tablets from Uruk show, I agree that name-tagging and the dedication of portable objects may very well constitute the earliest motivations for glottographic writing.

Furthermore, although Stuart (1995) does not argue for a specific mechanism by which name-tagging promotes phoneticism, which in turn promotes a more linguistically explicit level of representation, in this dissertation I provide specific examples of how this process may have taken off in the case of Late Preclassic Mayan portable objects: through the spelling of grammatical affixes and C-V morpheme boundaries (Justeson 1989), such as those of high frequency in ownership and dedicatory statements (e.g., ergative and possessive agreement markers, especially the third person allomorphs, and especially the prevocalic allomorphs, possessive suffixes, and especially sequences of -C-V verbal suffixes).

Finally, it is necessary to emphasize the role of preciosities in the diffusion of writing: it was the exchange of fine ceramics, jades, obsidian, feathers, and many other precious luxury goods produced and exploited in Mesoamerica that served as the medium

for the diffusion of writing. Long-distance preciousity exchange networks were first established in Mesoamerica during the Early Preclassic (cf., Clark and Blake 1993; Grove 1992; Hirth 1992). Writing was very likely seen at first as yet another preciousity to be given and acquired, to be displayed as a symbol of status. Soonafter, it was reinvented as a tool to achieve political goals.

These political goals likely involved what Marcus (1992a:11-12) has termed horizontal propaganda: propaganda aimed primarily at other elites rather than at the commoners. Indeed, while monumental sculpture conveyed vertical and horizontal propaganda, or in other words, propaganda aimed at everyone who could witness the dedication of public monuments and sculpture, whether commoners (vertical) or elites (horizontal), preciousities such as inscribed jade pendants may have been aimed more at competing elites. Even if the populace at large was aware that a certain jade earflare worn during a given ceremony by a ruler had been the possession of the royal lineage founder several centuries prior, only those close enough to the ruler during ceremonial performances, and knowledgeable enough about precious objects and graphic communication systems (through oral and script traditions, through formal and technical training) would be able to ascertain its authenticity.

CHAPTER II:

GREATER LOWLAND MAYAN HISTORICAL LINGUISTICS

2.0. Overview. In this chapter I provide a brief introduction to the study of Mayan linguistics, particularly those aspects relevant for the study of Late Preclassic Mayan texts, including: the genetic classification of the Greater Lowland Mayan languages (Ch'olan, Tzeltalan, Yukatekan), the diffusion of phonological and grammatical features among the Greater Lowland Mayan languages, the diffusion of traits between Greater Lowland Mayan languages and other Mayan and non-Mayan languages, and the reconstruction of their verbal status markers and voice system, with a focus on antipassive morphosyntax.

2.1. Background.

2.1.1. Mayan Languages. The following information is mainly from Kaufman (1990). The Mayan language family is made up of about 32 different languages, spoken by about 3.5 million people in highland and lowland regions in Guatemala, Belize, the Yucatan peninsula, and parts of Veracruz in Mexico and Honduras (**figure 2.1**). Some of the languages may be dialects of a single language (e.g., Q'anjob'al, Akatek, Jakaltek), some are on the brink of extinction (e.g., Itzaj, Lakantun, Mocho', Muchu', Uspantek), and some are already extinct (e.g., Ch'olti'). The languages of main interest for this dissertation include: Ch'ol, Chontal/Yokot'an, Ch'olti', Ch'orti', Yukatek, Itzaj, Lakantun, Mopan, Tzotzil, and Tzeltal.

2.1.2. Mayan Grammatical Structure. Mayan languages are generally predicate-initial languages. Predicates can be verbal, nominal, or adjectival (England 1991; Kaufman 1990). Word order exhibits much variation, but in general deviations from verb-initial word order are pragmatically marked (Bricker 1986; Brody 1984; Durbin and Ojeda 1978; England 1991; Hofling 1982, 1984; Norman and Campbell

1978). Mayan languages are generally ergative-absolutive languages at the morphological level: ergative agreement markers on the verb coreference the transitive subjects (A), while absolutive agreement markers on the verb coreference both the intransitive subjects (S) and the transitive objects (O), resulting in an A (ergative) vs. S/O dichotomy (absolutive).²⁸ At the syntactic level (Comrie 1978; Dixon 1979, 1994) the picture is less clear: some Mayan languages exhibit some characteristics of syntactically ergative languages (Foley and Van Valin 1984; Larsen and Norman 1979; Manning 1996; Norman and Campbell 1978),²⁹ but alternative explanations in terms of different phenomena, such as obviation, may prove more adequate for some of them (Aissen 1999).

Modifiers precede heads (e.g., adjective before noun), and possessees precede their possessors. Verbs take pronominal markers coreferencing the S (intransitive subject) if intransitive, and the A (transitive subject) and O (transitive object) if transitive. Possessed nouns coreference their possessors by means of the same set of pronominal markers that is used by transitive verbs to coreference the A.

The languages mark aspectual and mood distinctions, rather than tense distinctions. Transitive, intransitive, and positional verbs are distinguished. Positionals generally behave like intransitives. Oblique arguments (e.g., recipients, benefactives, instruments, demoted As or Os) may be expressed as the complements of prepositional

²⁸ See Zavala (1994) for an inverse analysis of the verbal agreement system of Wastek.

²⁹ Comrie (1978) and Dixon (1994) have presented evidence for the definition of (nominative-)accusative (S/A vs. O) and ergative(-absolutive) (S/O vs. A) alignments of the grammatical relations S, A, and O both at the morphological and syntactic levels. At the morphological level, an alignment may be coded through coreferencing on verbs or case-marking on nouns. At the syntactic level, the grammatical relations may be coded by constraints on clause-linking operations involving coreferential arguments, such as relativization, subordination, and coordination of clauses, and possibly also by constituent word order. The morphological and syntactic levels are basically independent of one another (Dixon 1994); depending on what the alignments are, a language may be morphologically ergative and syntactically ergative, morphologically accusative and syntactically accusative, or morphologically ergative and syntactically accusative.

phrases or as the possessors of relational nouns (or a combination of the two), or in some cases they can become primary objects. Transitive clauses can undergo the following valency and voice changes: passive, mediopassive, and antipassive (intransitivizers); and applicative and causative (transitivizers). Derivations from nouns to verbs, verbs to nouns, intransitives to transitives, and transitives to intransitives generally require specific suffixes.

Finally, splits in the morphological ergative alignment of grammatical relations may be determined by nominal ontological salience (Mocho'), tense/aspect of the clause (Ch'olan, Yukatekan, Poqom), or subordinate status of the clause (Poqom, Greater Mamean, Greater Q'anjob'alan minus Tojolob'al and Motosintleko) (Dayley 1981; Kaufman 1990; Norman and Campbell 1978; Norman and Larsen 1979).

2.2. Mayan Historical and Comparative Linguistics.

2.2.1. Genetic Classification of Mayan Family. Several models for the genetic classification of the languages exist (Fox 1978; Gates 1920; Kaufman 1976; Kroeber 1939; McQuown 1956; Norman 1979; Robertson 1992; Swadesh 1961).³⁰ The more recent and detailed ones generally distinguish four major branches: Wastekan, Yukatekan, Western Mayan, and Eastern Mayan (**table 2.1**). Here I use the classification by Kaufman (1976, 1989), with a special focus on the Greater Lowland Mayan languages (Ch'olan, Tzeltalan, Yukatekan), as shown in **figure 2.2**. His classification is the most widely accepted to date (e.g., Campbell 1997, 1998; England 1991; Hofling 2000; Hopkins 1985), although there are competing proposals at various levels.³¹

³⁰ Fox (1978) and Campbell (1997) have summarized the most important work on the classification of Mayan languages.

³¹ Kaufman (1990) argues that proto-Yukatekan split into Mopan and Yukatek-Lakantun-Itzaj, while Justeson et al. (1985) and Campbell (1998) favor a split into Itzaj-Mopan and Yukatek-Lakantun. Kaufman (1976, 1989) also proposes that proto-Ch'olan split into Eastern Ch'olan, made up of Ch'olti'-Ch'orti', and Western Ch'olan, made up of Ch'ol-Chontal; in contrast, Robertson (1992) argues that Eastern Ch'olan was made up of Ch'olti', which eventually became Ch'orti', while Robertson (1999) argues that proto-Ch'olan broke up into Ch'ol, Acalan (> Modern Chontal), and Southern Classic Mayan or Ch'olti'an (> Ch'orti'). Finally, Kaufman (1976, 1989) proposes Wastekan to be the first

2.2.2. The Greater Lowland Mayan Languages.

2.2.2.1. Diversification, Dispersal, and Contacts. The proto-Mayan homeland proposed by Kaufman (1976) is located in the Cuchumatán highlands of Guatemala. Here I generally assume his proposed diversification and dispersal model, shown in **table 2.2** and **figure 2.2**.³² Of major importance are the diversification and dispersal of the Ch'olan-Tzeltalans and Yucatekans, and the periods of linguistic diffusion involving these languages and some non-Mayan languages. **Table 2.3** shows the Ch'olan-Tzeltalan and Yucatekan phonological innovations with respect to proto-Mayan (Kaufman 1976:110), **table 2.4** shows the phonological innovations within Ch'olan (Kaufman and Norman 1984:85-87), **table 2.5** shows some grammatical evidence proposed by Kaufman and Norman (1984:82) for the internal subgrouping of Ch'olan, and **table 2.6** shows some phonological innovations proposed by Justeson et al. (1985:15) for the shift from pre-Yucatekan to proto-Yucatekan.

Kaufman (1976, 1989) and Justeson et al. (1985) propose an initial settlement of the Mayan lowlands by Yucatekans ca. 1000 B.C., followed by Ch'olan-Tzeltalans ca. 1000-600 B.C. During the time that Ch'olan-Tzeltalans began to migrate to the lowlands, and then came in close contact with the Yucatekans who were already there, two main episodes of close linguistic interaction between these languages took place (Campbell 1978, 1984; Hopkins 1985; Justeson et al. 1985; Kaufman 1976, 1989; Kaufman and Norman 1984): the Greater Lowland Mayan area period, and then the Lowland Mayan area period.³³ During the Greater Lowland Mayan period, probably during the Late

Mayan subgroup to split from proto-Mayan, while Robertson (1992, 1999) argues that Wastekan forms a subgroup with Ch'olan-Tzeltalan.

³² The estimated dates are based on glottochronological estimates by Kaufman (1976, 1989) and Justeson et al. (1985). I use them merely as an idealized chronological model that can be tested against archaeological and epigraphic data.

³³ The linguistic evidence points to the existence of two additional areas of linguistic contact and diffusion (England 1991:455; Kaufman 1976:107, 1989:Part D, 144-146): the Huehuetenango Sphere (Greater Mamean and Greater Q'anob'alan except Tojolob'al and Mocho'), and the Chiapas Sphere (Tojolob'al-Tzeltal-Ch'ol).

Preclassic period (Justeson et al. 1985), some phonological, lexical, and grammatical innovations were diffused between Ch'olan-Tzeltalan and Yukatekan (tables 2.7 and 2.8); some of the Ch'olan(-Tzeltalan) innovations were diffused also to Greater Q'anjob'alan early on (Kaufman 1976:110).³⁴

Later, after the Ch'olan-Tzeltalan breakup between ca. 300 B.C.-A.D. 100 (Justeson et al. 1985; Kaufman 1976), during the Lowland Mayan period, probably during the Protoclassic and Early Classic periods according to those authors, there was significant lexical diffusion, including ritual vocabulary, from Ch'olan into Yukatekan, Greater Q'anjob'alan, and Eastern Mayan (tables 2.9-2.11). At the same time, Ch'olan borrowed verbal morphology and split ergativity from Yukatekan (table 2.12), suggesting intense sociolinguistic interaction and possibly significant Ch'olan-Yukatekan bilingualism in the lowlands (cf., Hopkins 1985).

Kaufman (1989) also discusses at length the evidence for a period of close interaction involving Poqoms, Ch'olan-Tzeltalans, and Yukatekans (Greater Lowland Mayan + Poqom), at first, and later Poqoms, Ch'olans, and Yukatekans (Lowland Mayan + Poqom). The traits that Poqom shares with Ch'olan and Yukatekans, according to Kaufman (1989) and Macri (1987), are listed in table 2.13. These include split ergativity, which Kaufman (1989) thinks may have originated in Poqom and spread to Yukatekan and then Ch'olan. Kaufman (1989:Part D, 129) estimates the split of Poqom from Greater K'iche'an around 600 B.C.; the Poqom influence on Greater Lowland Mayan speakers may have taken place between ca. 600 B.C.-A.D. 100, although he favors the period between 500 B.C.-A.D. 1 (Kaufman 1989:Part D, 142). However, it is unclear to me where such direct Poqom-Yukatekan interaction would have taken place, since Ch'olan-Tzeltalans were most likely geographically in between the two. Subsequently, Kaufman (1976, 1989) and Justeson et al. (1985) argue that proto-Ch'olan probably broke

³⁴ For example, Greater Q'anjob'alan borrowed **chon* 'to buy' prior to the Ch'olan-Tzeltalan **ŋ > ɲ* change, but after the Ch'olan-Tzeltalan **k > ch* change.

up into Eastern Ch'olan (Ch'olti'-Ch'orti') and Western Ch'olan (Chontal-Ch'ol) during the transition between the Early and Late Classic periods, or ca. A.D. 400-600.

Campbell and Kaufman (1976) and Kaufman (1976) have argued for the likely Mixe-Zoquean linguistic identity of some of the Middle Preclassic Olmec groups, and for a strong cultural and linguistic influence of these Mixe-Zoqueans on many Mesoamerican groups, including Mayans, especially in agricultural and ritual vocabulary (**table 2.14**). Justeson et al. (1985) and Justeson and Fox (1989) also argue for significant diffusion of Mixe-Zoquean terms into the Greater Lowland Mayan languages during Late Preclassic and Early Classic times (e.g., proto-Ch'olan *kākāw 'chocolate' < Mixe-Zoquean *kakawa). Recently, the proposed decipherment of Epi-Olmec writing as a form of pre-proto-Zoquean by Justeson and Kaufman (1993), and evidence for script diffusion between Epi-Olmec and Mayan scribes during the Late Preclassic period by Stross (1990), Justeson and Kaufman (1993) and this author (Chapter I), suggest interlingual and interscribal interaction.

Campbell (1978, 1984) has discussed the evidence from loans from Ch'olan(-Tzeltalan) into K'iche'an languages (**table 2.11**), and suggests that Ch'olan(-Tzeltalan) speakers were in the highlands of Guatemala in addition to Greater K'iche'an speakers during the Late Preclassic and Early Classic periods. This also suggests that it was probably at this point when Poqoms (Greater K'iche'an) and Ch'olans were in direct contact; Ch'olans may have served as mediators between the Poqoms (highlands) and Yukatekans (lowlands).³⁵ Loanword evidence (**table 2.15**) also suggests much borrowing of ritual, commerce, and cultigen terminology from Mayan languages, in some cases specifically from Ch'olan(-Tzeltalan) languages, by non-Mayan languages in the Guatemalan highlands, such as Xincan, and northeastern highlands of El Salvador, such

³⁵ However, this does not explain why the split ergative pattern of Yukatekan and Poqom is so similar, and the Ch'olan pattern is less similar to that of the other two (Kaufman 1989:Part D). One would expect, given a highland-lowland geographical continuum of Poqom-Ch'olan-Yukatekan, that Poqom and Ch'olan would be more alike.

as Lencan, during the Late Preclassic period (Campbell 1978; Kaufman 2000). If so, the Ch'olan(-Tzeltalan) speakers in the area may have comprised a dominant elite group, with the Xincan and Lencan populations most likely comprising a subordinate peasant group (Campbell 1978). Justeson and Fox (1989) agree this evidence could indicate the presence of Ch'olan-Tzeltalan or Ch'olan speakers in the Guatemalan highlands (e.g., Kaminaljuyu, Abaj Takalik, El Baul) and the northeastern highlands of El Salvador (e.g., Chalchuapa) during the Late Preclassic.

2.2.2.1. Archaeological Evidence. There is some archaeological evidence relevant to the Ch'olan-Tzeltalan movements into the lowlands, and to the formation of the Greater Lowland Mayan and Lowland Mayan contact areas. I propose these correlations based on Kaufman's (1976, 1989) dispersal scenario and Clark, Hansen, and Pérez's (1998) scenario for the settlement of the Mayan lowlands.

2.2.2.1.1. Middle Preclassic Period. During the Middle Preclassic Period the archaeological evidence suggests movements of groups of people into the southern (Usumacinta) and central (Petén) lowlands, associated with the Xe Ceramic Complex (1000-500 B.C.), which shows affiliations with ceramic complexes in the highlands of Chiapas, possibly Mixe-Zoquean speakers, and the highlands of Guatemala, possibly Greater K'iche'an speakers. At roughly the same time, the Swasey Ceramic Complex (1000-500 B.C.) developed in the northern Belizean lowlands among groups who exhibit cultural continuities (e.g., in lithic technology) with the preceramic inhabitants who settled the region ca. 1400 B.C. as attested at Cahal Pech (Iceland 1997); this ceramic complex shows affiliations with ceramic complexes in the highlands of Guatemala and northeastern El Salvador (Sharer 1994:80), and who may have been groups of Mayan and non-Mayan speakers.

Now, based on the earlier beginning for the Swasey Complex, and for the continuity of its developers with the occupants of the northern Belizean region since ca. 1400 B.C., the later occupation of this region by Yucatekan speakers, and the suggestion

by Kaufman (1976, 1989) that Yukatekans split from Late proto-Mayan (proto-Mayan minus Wastekan) between ca. 1800-1400 B.C. and settled in the lowlands by ca. 1000 B.C., according to glottochronological estimates, I think it is possible to suggest that the Swasey Complex people of northern Belize may have been Yukatekan speakers.

Also, based on the somewhat later arrival of the Xe Complex users, the connections between this group and the groups from the highlands of Chiapas (probably Mixe-Zoquean) and Guatemala (probably Mayan, such as Greater K'iche'an and Greater Q'anjob'alán), their settlement in the southern and central lowlands, where in later times Ch'olan-Tzeltalan speakers were distributed (Justeson and Fox 1989; Justeson et al. 1985; Kaufman 1976), and the suggestion by Kaufman (1976, 1989) that Ch'olan-Tzeltalan split from Western Mayan (leaving Greater Q'anjob'alán behind in the homeland) ca. 1000-600 B.C. and then arrived to the lowlands, I think it is possible to correlate the Xe Complex with Ch'olan-Tzeltalan.

The Xe and Swasey complexes were eventually replaced by or assimilated into the Mamón Ceramic Complex (700-400 B.C.), at which point the entire lowlands adopted "the same artifact styles and cultural practices" and "a uniform system of ceramic production, long distance exchange (obsidian, shell, and jade), architectural styles, and construction techniques" by ca. 600-500 B.C. (Clark, Hansen, and Pérez 1998). This cultural assimilation, epitomized by the Mamón Ceramic Complex, I would argue, could reflect the intense linguistic interaction and diffusion between Ch'olan-Tzeltalan and Yukatekan speakers that led to the development of the Greater Lowland Mayan area. The Greater Lowland Mayan area, therefore, may have taken shape during the Middle Preclassic period.

2.2.2.1.2. The Late Preclassic. But what about the Lowland Mayan area and period? Clark, Hansen, and Pérez (1998) argue that the first state in the Mayan lowlands arose ca. 300-200 B.C. at El Mirador (1998:9), which Kaufman (2000) believes was Ch'olan-Tzeltalan during the Late Preclassic, but Yukatekan before this time. In

addition, Clark, Hansen, and Pérez (1998:9, 15) point to evidence of possible expansion, but at least of population movement, from the Mayan lowlands to the central Chiapas highlands possibly initiated by El Mirador, and perhaps causing “the collapse of traditional Zoque capitals along the Grijalva River” (e.g., Chiapa de Corzo, La Libertad) around 300-200 B.C. This pressure lasted from 300 B.C.-A.D. 100. This events and time frames could reflect the movement of the Ch’olan-Tzeltalan speakers who gave rise to Tzeltalan. The time ranges coincide with the 300 B.C.-A.D. 100 estimated range for the break-up of Ch’olan-Tzeltalan by Justeson et al. (1985), while the location is consistent with the likely geographic origin and current whereabouts of Tzeltalan and Ch’ol speakers (Kaufman 1976). An estimate of about 200 years for the completion of the breakup, starting at the end of the period of 300-200 B.C., would place the Greater Lowland Mayan period between ca. 600 B.C.-A.D.1.

In addition to the population movements, the Mamom Ceramic Complex was replaced by the Chicanel Ceramic Complex (400 B.C.-A.D. 100) in the central and southern lowlands during the Late Preclassic period. Thus, just as the Mamom Complex could reflect the period of Greater Lowland Mayan interaction, the Chicanel Complex could reflect the period of Lowland Mayan interaction. If so, the beginning of the Ch’olan-Tzeltalan breakup may have taken place around 400-200 B.C., based on the ceramic shift and the archaeological evidence for population movements of lowlanders into the region populated today by Tzeltalan speakers. (In Chapter VII I point to epigraphic evidence suggesting that the split had taken place by ca. 100 B.C.)

Finally, since archaeological evidence from Kaminaljuyu and El Porton suggests that the highlands were very culturally and politically influential during the Middle and Late Preclassic periods (Sharer and Sedat 1987), and since Kaufman (1989:Part D, 129) estimates the split of Poqom from Greater K’iche’an around 600 B.C., the Poqom influence on Greater Lowland Mayan speakers (assuming this was the direction of influence) may have taken place between ca. 600 B.C.-A.D. 100 (or 600-200 B.C. if my

estimates for the Greater Lowland Mayan period are right). Kaufman (1989:Part D, 142) favors the period between 500 B.C.-A.D. 1 for the diffusion of Poqom innovations to Greater Lowland Mayan and Lowland Mayan.³⁶ Kaufman (1976, 2000) also places Mixean or Poqom at Kaminaljuyu and a Greater K'iche'an language at El Porton during the Late Preclassic; since Kaminaljuyu, Abaj Takalik, and Chalchuapa may have been in Xincan and Lencan territory at this time, it is probable that Ch'olan-Tzeltalans may have interacted with Mixeans, Poqoms, Xincans, and Lencans in this region (Campbell 1978; Justeson and Fox 1989).³⁷

2.2.3. Assumptions for Grammatical Reconstruction. While the purpose of this dissertation is not to reconstruct the grammatical structure of proto-Ch'olan or proto-Ch'olan-Tzeltalan or proto-Yukatekan, one must be aware of the assumptions behind morphosyntactic reconstruction, especially as they concern ergative languages. In a general sense, I follow Norman and Campbell (1978:138) in assuming that:

In the first place, it is possible to reconstruct morphology using the techniques of lexical reconstruction, provided that cognate morphemes appear in the same positions in words and have not undergone unprecedented functional shifts. Secondly, internal reconstruction may provide clues to the relative antiquity of syntactic constructions. Finally, the relative probability of competing reconstructions may be evaluated by considering the degree to which the individual reconstruction is compatible with language universals.

Norman and Campbell (1978:142-144) discuss the features that a grammatical model for historical reconstruction of ergative languages should take into account (cf., Comrie 1978; Dixon 1979, 1994; Larsen and Norman 1979): (1) ergativity refers to one of the means for marking grammatical relations of nominal arguments; (2) ergativity may

³⁶ However, if Kaufman (1989) is correct about Poqom being the source of split ergativity in Yukatekan and Ch'olan, split ergativity would consequently have been present in Yukatekan and Ch'olan already around ca. A.D. 1. As discussed in Chapter III, the presence of split ergativity as late as the Late Classic period is still unproven, and thus extra caution is needed.

³⁷ Also, given the direction of linguistic diffusion, one should consider Mixean and Poqom (but not likely Xincan or Lencan) as candidates for the texts at Kaminaljuyu and El Porton, respectively, in addition to Ch'olan-Tzeltalan.

be present at the morphological and/or syntactic levels; (3) most ergative languages are not consistently ergative throughout their grammar and instead exhibit splits in their marking of grammatical relations; (4) different factors, such as lexical and semantic, as well as syntactic, may trigger splits in ergative-absolutive alignments.

I rely heavily on the reconstructions by Kaufman in this dissertation. The reasons for this is that his methodology is the most thorough and cautious, and also that he takes into account the possibilities of diffusion among languages in close contact, a factor other Mayanists do not always take into account.³⁸

2.3. Greater Lowland Mayan Grammar.³⁹

2.3.1. Basic Word Order. Here I assume England's (1991) reconstruction of the basic word order of proto-Mayan transitive clauses as *VOA, and also her reconstruction

³⁸ Kaufman (1989:Part D, 11) applies the following steps for reconstructing grammatical features: (1) he uses a uniform terminology for all the languages; (2) he discusses data from more closely related languages, assuming his genetic classification of Mayan (Kaufman 1976, 1989), and attempts to reconstruct the features for branches and smaller and younger subgroups first, and for larger and older subgroups second; (3) he then reconstructs the proto-Mayan pattern by comparing the larger subgroups; (4) he reconciles the results of (2) and (3); and (5) he reconciles the results of step (2) with the results of step (4).

³⁹ The following are the abbreviations I use for interlineal glossing of morphemes throughout this dissertation. A = transitive subject, ABS = absolutive, ADJ = adjective, AP = antipassive, APPL = applicative, ASP = aspect marker, CAUS = causative, CMP = completive aspect or status marker, DMNS = demonstrative, DIST = distal enclitic, ENCL = enclitic, ERG = ergative, FUT = future, GEN = genitive/possessor, INC = incompletive aspect or status marker, INCH = inchoative or versive, INTRVZR = intransitivizer, MPASS = mediopassive, N = noun, NP = noun phrase, O = transitive object, p = plural, PART = participial, PASS = passive, POS = positional, POSS = possessee if noun or possessive if suffix, POT = potential, PRO = pronoun, PROX = proximal enclitic, s = singular, S = intransitive subject, STA = stative, ST = status marker, TH = thematic suffix, TRNVZR = transitivizer, V = verb, VI = intransitive verb, VP = verb phrase, VT = transitive verb, -X = suffix, X- = prefix, -X- = infix, X=Y = compound, +X = enclitic, X+ proclitic, [X] = full omissibility, (X) = partial omissibility, 1 = first person, 2 = second person, 3 = third person, > = became, < = from, [VO_] = A noun phrase not expressed or has been moved elsewhere, [V_A] = O noun phrase not expressed or has been moved elsewhere, * = word reconstructed based on comparative and/or internal reconstruction method, (Y) = Y is omitted in certain contexts, [Y] = Y is generally omissible, V₁ = same vowel as that in preceding syllable, /X/ = underlying form, <X> = X is attested in a document.

of the basic sentence structure of proto-Mayan as *TOPIC FOCUS [VOA] REORDERED.O.⁴⁰ Her proposals accounts for all the pragmatically- and grammatically-motivated word orders attested across the Mayan languages (table 2.16).⁴¹ The following can be said regarding the basic word orders of the Greater Lowland Mayan languages.

First, given that Ch'ol and Chontal exhibit VOA/VS as their basic word order, it can be argued that proto-Western Ch'olan had *VOA/*VS. Here I assume that Ch'orti' has VOA/VS as its basic word order, and that as a result, proto-Eastern Ch'olan likely had *VOA/*VS, given that VOA/VS is an ancestral trait (England 1991).⁴² It is possible to say, therefore, that proto-Ch'olan most likely had *VOA/*VS as well. Since both Tzotzil and Tzeltal have VOA as basic word order, it is possible to reconstruct *VOA as the basic word order of proto-Ch'olan-Tzeltalan. Kaufman (1990:81) considers the basic word order of Tzotzil and Ch'ol to be VOA, lending support to this reconstruction.

Regarding Yukatekan, I follow Hofling's (1984) proposed *VOA basic word order. As Durbin and Ojeda (1982) and Hofling (1984) have pointed out, Yukatekan languages may exhibit all possible word orders, but only VOA is pragmatically unmarked. The same is true of the Ch'olan languages. Thus, the Greater Lowland Mayan languages exhibited the same basic word order as that reconstructed for proto-Mayan.

⁴⁰ See Brody (1984) for a thorough discussion of the criteria for defining basic word order, and for the distinction between pragmatic and grammatical word orders. See also Smith-Stark (1976:46-48) and Quizar (1987:203-206), cited in Kaufman (1989:Part D, 135).

⁴¹ England (1991:480) shows that all the attested word orders in Mayan, whether as grammatical word orders or pragmatic word orders, can be derived as follows: VOA ([VOA]), VAO ([V _ A] REORDERED O), AVO (TOPIC/FOCUS [VO _]), AOV (TOPIC FOCUS [V _ _]), OVA (TOPIC/FOCUS [V _ A]), OAV (TOPIC FOCUS [V _ _]).

⁴² While Quizar (1994) proposes AVO as the basic word order for Ch'orti', there is little evidence to support this: Quizar bases her conclusion on the frequency criterion (AVO is more frequent than VOA in discourse), which as Brody (1984) and England (1991) show is not the criterion that should be used for defining basic word orders. Moreover, Quizar acknowledges that AVO is pragmatically marked, while VOA is unmarked; the basic word order of a language is the the least marked word order.

I assume England's (1991) proposed proto-Mayan basic sentence structure for the Greater Lowland Mayan languages, as I do not have enough data at the moment to carry out a detailed study, and because to my knowledge it is applicable to these languages. In Mora-Marín (2001b) I argue that Classic Lowland Mayan (CLM) texts exhibit examples of TOPIC/FOCUS [VO_] and TOPIC/FOCUS [V_A], suggesting that the languages represented in them, most likely Ch'olan and Yucatekan languages or dialects, conformed to proto-Mayan's basic sentence structure, but I was unable to distinguish between topic and focus functions of the fronted nominal constituent (see Chapter III).

2.3.2. Verbal Morphology. Here I review some reconstructions for the verbal morphology of the Greater Lowland Mayan languages. I focus on the verb structure, inflection for aspect and status, the development of split ergativity, and the voice system, especially the antipassive voice.

2.3.2.1. Verb Structure. Kaufman (1989:Part D, 15-21) proposes a series of reconstructions for the morphological structure of finite verbs and nonverbal predicates in proto-Mayan, proto-Ch'olan, proto-Tzeltalan, proto-Ch'olan Tzeltalan, and proto-Yucatekan (**tables 2.17-2.19**). The data show the major changes that took place in the various subgroups with respect to proto-Mayan.

First, Kaufman argues that proto-Mayan verbs were characterized by the following general structures: (1) *ASP+ABS(+ERG)-VERB-ST and (2) *(ERG+)VERB-ST+ABS, with the ERG present in either case if verb is transitive. Aspect-marking could be overt, as in (1), or covert, as in (2). If overt, whether transitive (*ASP+ABS+ERG-VT-ST) or intransitive (*ASP+ABS-VI-ST), the absolutive marker follows the aspect marker, which is the higher predicate. If covert, whether transitive (*ERG+VT-ST+ABS) or intransitive (*VI-ST+ABS), the absolutive marker follows the verb stem itself, which is now the higher predicate. This general pattern was preserved all the way down to proto-Ch'olan-Tzeltalan. However, Ch'olan and Yucatekan, perhaps during the period of Lowland Mayan diffusion, changed the archaic pattern: the absolutive markers became

suffixes, fixed to a poststem position whether aspect-marking is covert or overt, in both transitives (*ASP+ERG-VT-ST+ABS and *ERG-VT-ST+ABS) and intransitives (*ASP+VI-ST-ABS and *VI-ST-ABS).

Second, both Ch`olan and Yukatekan changed the function of the plain status category to a completive (CMP) status category, as I explain below in more detail, contrasting it with an also newly-formed incompletive (INC) status category. Following this change, in both Ch`olan and Yukatekan, the pattern of verbal agreement of intransitives changed to distinguish between the completive and incompletive statuses: in the completive status intransitives remained close to the pattern above (*(ASP+)VI-ST-ABS), but in the incompletive status, intransitives became possessed nominalizations (*(ASP+)ERG-VI-INC). This is what is called split ergativity, which I discuss below in more detail.

2.3.2.2. Verb Inflection. Kaufman (1989:Part D, 5-6, 16-17, 28-29, 33-34, 38-39) also proposes reconstructions for the verbal status and voice inflections for proto-Mayan, proto-Yukatekan, proto-Ch`olan Tzeltalan, proto-Ch`olan, and proto-Tzeltalan (tables 2.20-2.24).

Kaufman and Norman (1984:92-93, Tables 9 and 10) and Kaufman (1989:Part C, 35-36) argue that Ch`olan-Tzeltalan lost the proto-Mayan perfect status as a separate category, and changed to marking the perfective with participial suffixes. Otherwise, Ch`olan-Tzeltalan retained the proto-Mayan system. However, as it diverged from Ch`olan-Tzeltalan, Ch`olan made additional changes⁴³: (1) the plain status of transitives, which was in general a retention from proto-Mayan and proto-Ch`olan-Tzeltalan, was reinterpreted as a completive status (i.e., *[-o(w)] 'plain status of root transitives' > *[-a] > -V₁ 'completive status of root transitives'); (2) *[-i-k] ~ *[-i-h] 'plain status of intransitives' > *[-ih] > -i 'completive status of intransitives'); (3) the dependent status of

⁴³ Kaufman (1989:Part C) argues that in proto-Mayan the plain status was interpreted as completive when no overt aspect marker was present. Thus, the reanalysis may have been motivated by aspectless verb forms.

transitives (*-e7 ~ *-:n), which also represent a retention of the proto-Mayan pattern, was reinterpreted as dependent and incomplete markers (< proto-Mayan *-a-7 ~ *-Vnh): and (4) the incomplete participial/gerund suffix of intransitives *-e| (< proto-Ch'olan-Tzeltalan *-eel < proto-Mayan *-e-al) was reinterpreted as the incomplete marker of intransitives. Below I discuss the reconstruction of the Ch'olan transitive status markers in more detail.

The following changes from proto-Mayan to Yukatekan took place (Kaufman 1989:Part C, 18-19): (1) proto-Mayan *-i-h ~ *-i-k 'plain status of intransitives' was retained, but the counterparts for transitives were lost, and replaced by -aj, reconstructible as a proto-Mayan particle *+(a)j 'earlier'; (2) the dependent and imperative status markers of derived transitives were lost (replaced by -∅); (3) the incomplete status of transitives became -ik, reconstructible to proto-Mayan *-ik 'nominalizer of intransitives'; and (4) the incomplete status of intransitives became -V₁l, reconstructible to proto-Mayan *-e-al 'incomplete participial/gerund/agent'. Ch'olan, Kaufman argues, assimilated this new usage of proto-Mayan *-e-al by Yukatekan.⁴⁴

Kaufman and Norman (1984) and Kaufman (1989) discuss the evidence for root transitive status-marking in detail, based on the following data: Ch'ol has -∅ 'incomplete' and -V₁ 'completive', Chontal/Yokot'an has -e7 'incomplete' and -i 'completive', Ch'olti' had -V₁ for both 'incomplete' and 'completive', and Ch'orti' has -i/-e for both 'incomplete' and 'completive'. Kaufman and Norman (1984:100) see three separate alternative scenarios.

⁴⁴ Interestingly, Poqom also lost the plain status marker of proto-Mayan, as well as the imperative and dependant status markers, just like Yukatekan (Kaufman 1989:Part C, 104, 105). Unlike Yukatekan, Poqom did not replace the plain status marker with *+aj 'earlier'. However, like Yukatekan, which added *+aj 'earlier' to the completives and perfects, such as the active perfect participle -m-aj, Poqom added this particle to the passive perfect participle of derived transitives, -Vm-aj (Kaufman 1989:Part C, 19, 104, 105). These similarities between Poqom and Yukatekan, though not explicitly noted by Kaufman (1989:Part C), may be a reflection of the interaction that he proposes as the source of the ergative split in Poqom, Yukatekan, and Ch'olan.

(1) Chontal exhibits a pattern close to that of proto-Ch'olan: root transitives take *-e7 'incompletive' and *-i 'completive'.

(2) Either Ch'orti' or Ch'olti' exhibits a pattern close to that of proto-Ch'olan: root transitives take *-i or *-V₁ 'plain status'. Eastern Ch'olan, then, would have preserved the proto-Ch'olan-Tzeltalan (< proto-Mayan) lack of distinction between completive and incompletive statuses (not aspects), while Western Ch'olan would have innovated the completive/incompletive status distinction.

(3) proto-Ch'olan had a completive/incompletive distinction but marked it with suffixes different from *-e7 and *-i/-V₁.

The authors propose *-V₁ ~ *-i for the completive status of proto-Ch'olan root transitives, while Kaufman (1989:Part C, 33) proposes *-e7 for the dependent/incompletive. The reason for this is that Ch'ol (Western Ch'olan) and Ch'olti' (Eastern Ch'olan) point to *-V₁, while Chontal (Western Ch'olan) and Ch'orti' (Eastern Ch'olan) point to *-i. Both Kaufman and Norman (1984:101) and Kaufman (1989:Part C, 36) argue that *-V₁ cannot be gotten from *-i, and that *-i itself was likely borrowed from the completive status marker of root intransitives. Moreover, Kaufman (1989a:36) believes that *-V₁ descends from proto-Ch'olan *-a < proto-Western Mayan *-a(w) < proto-Mayan *-o(w) 'plain status of root transitives'.

The data from CLM texts suggests that the plain/completive status of root transitives in pre- or proto-Ch'olan was in fact *[-V₁(w)] (Bricker 1986; Justeson and Campbell 1997; Wald 1994). This form suggests a proto-Ch'olan-Tzeltalan form *[-a(w)] after the proposed Ch'olan and Western Mayan forms are taken into account (i.e., Ch'olan *-V₁(w) < proto-Ch'olan-Tzeltalan *-a(w) < proto-Western Mayan *-a(w) < proto-Mayan *[-o(w)]). The suffix was either not spelled (e.g., **7u-CHOK** for 7u-chok-∅-∅ 3sERG-throw.down-CMP-3sABS 's/he threw it down'), suggesting the omissibility proposed by Kaufman for the proto-Mayan form, or it was spelled in part (e.g., **7u-CHOK-ko** for 7u-chok-∅-∅+a 3sERG-throw.down-CMP-3sABS+PROX.ENCL 's/he

threw it down here’) or completely (e.g., **7u-CHOK-(k)o-wa** for 7u-chok-ow-Ø+a 3sERG-throw.down-CMP-3sABS+PROX.ENCL ‘s/he threw it down here’), suggestive of the omissibility of the final w proposed by Kaufman for the proto-Mayan form. To date, there is no clear, unambiguous evidence from hieroglyphic texts for an allomorph *-i ‘completive of root transitives’ which would confirm Kaufman and Norman’s (1984) and Kaufman’s (1989) reconstruction of *-V₁ ~ *-i as the ‘completive status’ of root transitives.

The intransitive status markers need to be discussed also. As already pointed out, the proto-Ch’olan-Tzeltalan incompletive participial/gerund/agent suffix *-eel was reanalyzed as the incompletive status marker of intransitives in Ch’olan, although it also retained its participial function. Ch’olan retained proto-Mayan *[i-h] ~ *[i-k] ‘completive status of intransitives’ as *-i. According to Kaufman and Norman (1984:102-103), Western Ch’olan retained the proto-Ch’olan pattern to some extent, since it is reflected in the largest class of intransitives in Ch’ol, and in all intransitives in Chontal, except for positionals. Eastern Ch’olan made some innovations, discussed by Kaufman and Norman (1984:103-105). Root intransitives had *-el ‘incompletive status’ and *-V₁y ~ *-i ‘completive status’. The root intransitives in *-V₁y constitute the largest class in Ch’olti’ and Ch’orti’ (e.g., Ch’orti’, cham-ay ‘die’, pur-uy ‘burn’, kar-ay ‘get drunk’). Those in *-i include examples like Ch’orti’ at-i ‘bathe’, uk’-i ‘cry’, ajin-i ‘run’, and like Ch’olti’ tal-i ‘come’. There may be evidence for proto-Ch’olan *-V₁y ‘completive status of root intransitives’. This suffix is attested in Modern Ch’ol (Schumann 1973:26): wäy-äy-on (sleep-CMP-1sABS) ‘ya dormí (I have already slept)’ and yajl-iy-on (fall-CMP-1sABS) ‘me caí’. Thus, it is possible to reconstruct proto-Ch’olan *-V₁y ~ *-i.

Another important innovation is that derived intransitives in proto-Eastern Ch’olan had to take a thematic suffix, either *-a(j) or *-i(j). This suffix is reconstructed as proto-Ch’olan *-aj by Kaufman and Norman (1984:104-105, 108-109), who point out that the Eastern Ch’olan thematic suffixes -i and -a have as cognates the Tzeltalan

intransitivizers *-ij and *-aj, respectively.⁴⁵ Based on this evidence, a reconstruction of the suffixes as *-ij and *-aj for proto-Ch'olan and for proto-Ch'olan-Tzeltalan is possible.⁴⁶ Thematic suffixes and status suffixes are not mutually exclusive. Kaufman and Norman (1984:94) provide the following examples of this from Ch'orti': nijk-i-Ø 'he/it moved', where -i is the thematic suffix, and -Ø is the status marker: nijkie7n //nijk-i-en//, the imperative form marked by -en 'imperative status marker', showing that the verb stem retains the thematic vowel when a status marker is added; and nijk-es 'to cause to move', a causative (derived) form, showing that the verb stem loses the thematic suffix when a derived form is used.

Intransitivized verbs take a thematic vowel -a in Ch'orti': Kaufman and Norman provide the example of tajp-a 'to be extinguished', which loses the -a when it takes the perfect participle suffix, tajp-em, or the causative suffix, tajp-es. It is not clear what conditions the use of -i and -a in Eastern Ch'olan; though -a is often used on passives (e.g., Ch'olti' <chap-a> 'get cooked'), there are many counterexamples (e.g., Ch'olti' <lop-a> 'come'). Likewise, -i is used for both passives (e.g., Ch'olti' <luhb-i> 'get tired') and non-passives (e.g., Ch'olti' <pacx-i> 'return').⁴⁷

The problem of split ergativity is also of significant interest to linguists and epigraphers alike. Kaufman (1989) proposes that Yukatekan borrowed split ergativity

⁴⁵ Kaufman and Norman (1984:109) reconstruct *-aj for proto-Ch'olan, and say that "There is no specific evidence, however, that [it] was a passivizer."

⁴⁶ Lacadena (2001) has recently suggested the reconstructions *-ijj and *-aj, based on the hypothesis that the CLM script represented vowel length through disharmonic spellings (e.g., pi-tzi-ja for pitz-ijj-Ø-Ø ball-INTRVZR-CMP-3sABS 's/he played ball' if the disharmonic spelling Ci-Ca does indicate a long i and a silent a). No evidence for vowel length exists in the modern reflexes of the suffix in either the Tzeltalan or Ch'olan languages. However, both Tzeltalan and Ch'olan lost phonemic vowel length, and therefore one should not necessarily expect such evidence to be obvious. I discuss this issue further in Chapter III.

⁴⁷ Kaufman and Norman (1984:104-105) also note that both Ch'olti' and Ch'orti' had additional thematic suffixes, such as -aw and -an, though this may in fact be incorrectly classified as such. In Chapter VIII, I observe that Fought's (1967) classification of -an as a thematic vowel may not be correct, and that it is in fact possible to describe its function as an absolutive antipassive marker.

and the active nominalization of transitives from Poqom. In Yucatekan, however, a reflex of proto-Mayan *-e-al 'stative participle/gerund/agent', preserved as -V₁l, was used instead of Poqom's -iik. At the same time, Kaufman argues. Yucatekan adopted -ik 'intransitive nominalizer' for the active nominalization of transitives. Furthermore, "Yucatecan reanalyzed the Poqom-style nominalizations as a generic incompletive status usable with a variety of Aspect particles (or higher predicates)" (Kaufman 1989:Part B, 86). Thus, Yucatekan not only borrowed the Poqom nominalizations and ergative split in a selective manner (using a different nominalizer for the intransitives than Poqom), but it also broadened the semantic range of its applicability, from the progressive (in Poqom) to all incompletive aspects of Yucatekan (progressive, habituative, inceptive, factitive, assurative, terminative, etc.).⁴⁸

Ch'olan borrowed split ergativity and active nominalizations from Yucatekan, according to Kaufman. It borrowed the use of *-e-al 'stative participle' (as -el) as the active intransitive nominalizer, and it too generalized the pattern to all incompletives and not just progressives (Kaufman and Norman 1984:102). Unlike Yucatekan, Ch'olan did not borrow a nominalization for transitives, but instead applied its former transitive dependent status markers to the new incompletive transitives (Kaufman and Norman 1984:96). **Table 2.25** summarizes Kaufman's proposed reconstruction of the diffusion of split ergativity (1989:Part B, 90-91).

I agree with Kaufman's (1989:Part B) reconstruction of the origin of split ergativity in Poqom, Yucatekan, and Ch'olan. In fact, the Yucatekan incompletive intransitive status marker -V₁l (< proto-Mayan *-e-al 'intransitive participle/gerund/agent') still functions as an active nominalizer (e.g., Colonial Yucatek <ah han-al> 'él que come (he who eats)' (Smailus 1989:131). This active nominalizing suffix, due to its homophony with the -V₁l 'ownership possession' suffix, could have

⁴⁸ Each of these aspect markers may have originated, like the Pocom PROGR marker, as a higher predicate verb/adverb, as Bricker (1986) has discussed in detail.

allowed for the reanalysis of possessed verbal nominalizations with -V₁l ‘ownership possession’ (i.e., ERG-VERB-V₁l ‘his/her/its VERBing’) as though they were inflected for subject agreement (i.e., ERG-VERB-V₁l ‘s/he/it VERBs’ or ‘s/he/it is VERBing’), resulting in the reanalysis of the -V₁l ‘incompletive active nominalizer’ suffix as ‘incompletive status of intransitives’.

Also of interest here are the voice markers for Ch’olan-Tzeltalan, Ch’olan, and Yukatekan (**tables 2.20-2.24**). Kaufman (1989) defines the following voices for proto-Mayan (Kaufman 1989:Part B, 149): (1) bounded passive, referring to “an event whose effect is ‘for good’, ‘once and for all’; (2) unbounded passive, referring to an event that is repeatable; (3) agentless mediopassive, referring to an event “that occurs without any agency assignable or revealed by the speaker”; (4) absolutive antipassive, referring to the removal of the O from a direct grammatical relationship with the transitive verb, and the concomitant intransitivization of the verb; and (5) agentive or focus antipassive, referring to a construction in which either the A or the O, depending on the language and/or the relative statuses of the A and O in the nominal salience hierarchy, is removed from a direct relationship with the verb.

The marking of antipassives is of particular importance here. **Tables 2.26-2.31** show the antipassive markers in Mayan languages and the reconstructed forms for proto-Mayan and the descendant subgroups of interest here. Several authors have proposed reconstructions of the two main antipassive constructions and their markers, including Norman and Campbell (1978), Smith-Stark (1978), Craig (1979), Dayley (1981), and Kaufman (1989).

The morphosyntactic variability of the agent-in-focus construction has been discussed by several authors. To this end, Craig (1979:127) has used the following criteria: (1) presence/absence of ergative marker on the verb; (2) presence/absence of a suffix cognate with the -(V)w and -(V)n Mayan suffixes; (3) presence/absence of an intransitive thematic vowel or phrase-final suffix; (4) agreement of the verb with the

transitive subject (A) or the transitive object (O). She described a progression “from a transitive verb form to an antipassive intransitive verb form” by comparing the data from various Western Mayan (Tzeltal, Tzotzil, Tojolob’al, Jakaltek), Yucatekan (Yukatek), Eastern Mayan (Ixil, K’iche’, Q’eqchi’) languages. However, she did not include Wastekan data, which precludes the possibility of reaching solid conclusions about proto-Mayan; nor did she take into account the possibility of diffusion of features. The last factor is indeed important: Craig notes that Tzeltal and Tojolob’al share their strategy for agent-in-focus constructions, which includes no ergative deletion, no -(V)w/- (V)n (or any other) suffix, no intransitive suffix, and no absolutive agreement of the agent on the verb. Nevertheless, Tzeltal and Tojolob’al may have arrived at this strategy through innovation and diffusion, rather than through shared inheritance.⁴⁹

The following are some of the basic facts, somewhat simplified. I begin with the agentive antipassive construction, which is the construction that has received more attention from scholars. Wastekan and Yucatekan both have agent-in-focus constructions, though they differ in their syntax and morphology, while both share the fact that the transitive verb does not become intransitive (Bricker 1978; Kaufman 1989). Agent-in-focus constructions with intransitivization of the verb occur only in Eastern Mayan and Western Mayan, and is therefore reconstructed by Kaufman (1989:Part A, 174) to the Central Mayan stage but not earlier.

Table 2.30 shows the reconstructions for the treatment of the A and O in the various antipassive constructions. **Table 2.29** shows that the reconstructions of the markers by these authors are generally similar, but Kaufman’s shows the exact opposite

⁴⁹ In fact, Tzotzil, which is more closely related to Tzeltal than Tojolob’al, does in fact have an agent-in-focus construction with ergative deletion, a suffix cognate with an antipassive marker in other Mayan languages, and an intransitive suffix. Furthermore, Ch’olti’, a Ch’olan language more closely related to the Tzeltalan languages than Tojolob’al, also had an agent-in-focus construction with characteristics like those of Tzotzil, as I point out below, suggesting that proto-Ch’olan-Tzeltalan had one as well. This points to the likelihood that Tzeltal developed its strategy through contact with Tojolob’al, rather than through inheritance from proto-Tzeltalan.

distribution of the reconstructed markers. Kaufman's (1989) reconstruction, though, is the more cautious one: he takes into account cases of diffusion, carries out a stricter comparison of cognates by form and by function, and reconciles the results with backward and forward reconstructions.

The proposal of a *-(V)w suffix as the proto-Mayan 'absolute antipassive' marker by Smith-Stark (1978) and Dayley (1981) cannot be supported because there are no cognates in Wastekan and Yukatekan: at best it would apply only to Central Mayan (Eastern Mayan and Western Mayan). Kaufman (1989:Part B, 152) reconstructs the Central Mayan markers *-o/a-w 'agentive antipassive' (root transitives) ~ *-w 'agentive antipassive' (derived transitives). He argues that it was derived through reanalysis from the plain status of root transitives *-o/a-w ~ *-o/a-h.

The strongest case can be made for the absolute antipassive marker. Kaufman (1989:Part B, 149, 152) reconstructs it for proto-Mayan as *-o-an (root transitives) ~ *-an (derived transitives). He justifies these reconstructions as follows. He shows that all the subgroups, except the Greater Q'anjob'alán Complex, have a suffix of the general form -(V)n with an absolute antipassive or a related (i.e., historically derivative) function (**table 2.27**), including Wastekan (with -n 'reflexive, mediopassive, frozen active intransitive forms'), Yukatekan (with -n 'completive absolute antipassive'), Eastern Mayan (Greater Mamean and Greater K'iche'an except for Poqom), and Western Mayan (Ch'olan).⁵⁰ He argues that the vowel of the -(V)n suffix, if any, descends from the

⁵⁰ In relation to the Wastekan case, where -n functions mostly as a reflexive and mediopassive, it is worthwhile to point out that in K'iche' and Tzutujil, for instance, some antipassive verbs have a reflexive or mediopassive meaning due to their semantic focus on the agent (Dayley 1985; Kaufman 1989; Mondloch 1981). In other ergative languages with antipassives, such as Dyrbal from Australia, the antipassive marker doubles as reflexive marker (Dixon 1979, 1994). It is therefore not unlikely that an antipassive marker may shift in function to a reflexive marker. It is even possible, as suggested by Kaufman (1989:169, Part B), that the antipassive marker *-o-an ~ *-an of proto-Mayan may have had more than one function, with absolute antipassive as one of them. A reflexive function may have served as the link between antipassives, which focus on the agent, and mediopassives, which focus on the patient, given that in reflexives the agent is the patient.

transitive thematic suffixes from proto-Mayan, *-o and *-a; some languages preferred one vowel over the other.

Kaufman argues too that proto-Mayan “had a generic or absolute antipassive marked with *-(o-)an and perhaps no agentive antipassive at all,” given its absence from Wastekan and Yukatekan, and that it was Central Mayan that innovated “a suffix *-(o-)w ‘vtR focus antipassive’, that was developed out of *-(o-)h/w vtR plain status, but treated as a valency changer, and a thematic suffix forming the basis of intransitive inflection” (1989:Part B, 168). In Western Mayan, he argues, the plain status root transitive marker was shifted to *-a-(w) ‘generic/alternate antipassive’, coinciding with the change made to the focus antipassive as *-(a-)w, which became “homosemantic with *-(o-)an,” the absolute antipassive, and was used on both root and derived transitives. The evidence from CLM texts can provide insight on this issue. As explained above, CLM texts spell the plain/completive status of root transitives as a -V₁(w) suffix, where the vowel is always synharmonic with the vowel of the verb root (e.g., **7u-tz’a-pa-wa** for 7u-tz’ap-aw-Ø-Ø ‘he planted it’ and **7u-cho-ko-wa** for 7u-chok-ow-Ø-Ø ‘he threw it down’), rather than as an -aw suffix. Yet the antipassive constructions using the -(V)w form are never spelled in such a way as to indicate a -Vw suffix, but simply a -w(-a) or -w(-i) form (see Chapter III). One possible exception is the spelling of a verb as **7u-ma-b’a-wa-ni**, possibly for 7u-mab’-aw-an, possibly with the suffix -aw-an attested in modern Ch’olan and Tzeltalan languages as -(a)w-an (see also Chapter III). If correctly analyzed as an antipassive, this would suggest that the language of CLM texts had synchronically a suffix -V₁(w) ‘plain/completive of root transitives’ and a suffix -(a)w ‘antipassive’, rather than -a(w) and -aw

Table 2.31 shows the evidence in favor and against the main reconstructions by Kaufman (1989). Kaufman’s reconstruction of Western Mayan *-o-an ~ *-an ‘absolute antipassive’ appears to be contradicted at first by the fact that most of the Western Mayan languages exhibit a different form; however, forward reconstruction suggests that pre-

Western Mayan indeed had *-o-an ~ *-an ‘absolutive antipassive’, given that the Eastern Mayan and Late proto-Mayan predecessors did. I discuss antipassives in Classic and Late Preclassic Mayan texts in Chapters III and VI, and their implications for the history of antipassive markers in Lowland Mayan in Chapter VIII. At this point I only need to mention, in support of my assumption of Kaufman’s (1989) scenario as correct, that in CLM texts the root transitive plain/completive status marker and antipassive suffixes were probably morphologically related (i.e., as -V₁(w) and -aw, respectively).

Regarding verbal morphology, it is also important to keep in mind the possible types of aspect markers and verbal enclitics that may have existed in the (Greater) Lowland Mayan languages. **Tables 2.32** and **2.33** show the aspect markers and verbal enclitics for proto-Mayan, proto-Yukatekan, proto-Ch’olan Tzeltalan, proto-Ch’olan, and proto-Tzeltalan according to Kaufman (1989). Kaufman only reconstructs two aspect markers for proto-Ch’olan Tzeltalan: *ta ‘progressive’ and *(i)x ‘already’. He also reconstructs *(i)wäl ‘progressive’, *a ‘already’, and *x ‘future’ for proto-Ch’olan, and *k ~ *t ‘habitual’, *taHn ‘progressive’, and *ka7h ‘future/optative’ for proto-Yukatekan. John Justeson (personal communication 1997) argues for a reconstruction of *yuwäl for the proto-Ch’olan form reconstructed as *(i)wäl by Kaufman, though with the function of ‘conjunction (and.then, when)’ rather than of ‘progressive aspect’.

While Kaufman (1989) reconstructs *x ‘future’ for proto-Ch’olan and *ka7h ‘future/optative’ for proto-Yukatekan, Classic Yukatek at least expressed future and potential also by means of the -om suffix which otherwise has an agentivizer function. The following example from Smailus (1989:146-147) illustrates its use:

- (2.1) <ma nic-l-om-Ø a-keban
 NEG cease-INC-POT 2sERG-sin
 t-u-dzib v-ol>
 PREP-3sERG-writing 2sERG-heart
 ‘no creo que han de cesar tus pecados (I do not believe that your sins will

end)'.

The following Colonial Yukatek example from the The Book of Chilam Balam of Chumayel is provided by Bricker (1986:37):

- (2.4) <xot-om-Ø u-ni-Ø y-ak-Ø-ob>
slice-FUT-3sABS 3sERG-tip-POSS 3sERG-tongue-POSS-PL
'The tips of their tongues will be sliced'.

Finally, **tables 2.34** and **2.35** show the reconstructed ergative and absolutive pronominal affixes for proto-Mayan, proto-Yukatekan, proto-Ch'olan Tzeltalan, proto-Ch'olan, and proto-Tzeltalan according to Kaufman (1989). Of interest here are some innovations that can distinguish the linguistic affiliation of Mayan texts. One of these is not clear from the tabulated data. CLM texts spell the first person singular pre-consonantal ergative prefix with T116 **ni** for ni- (Stuart, Houston, and Robertson 1999), while the Postclassic Yukatek Mayan scribe Antonio Gaspar Chi spelled it with T679.116 **7i-ni** for 7in-. This suggests a form akin to that of modern Ch'orti', which has ni- and in-, and extinct Ch'olti', which has in-, rather than to that of Ch'ol and Chontal which have k- and ka-, respectively. Although at first this would seem to indicate that Classic texts were written in Eastern Ch'olan, the fact is that proto-Mayan had the form *nu-, and therefore, as suggested by forward reconstruction, that proto-Ch'olan had a form *n- (Kaufman 1989:Part C, 31), or perhaps even *ni-, which I think was more likely. Kaufman and Norman (1984:91) propose *in- as the proto-Ch'olan form, but given the proto-Mayan form *nu-, it is possible to see a pre- or proto-Ch'olan form *ni-, with subsequent replacement by *k(a)- in Western Ch'olan, and retention in Eastern Ch'olan, which also innovated or borrowed (from Yukatekan) the form *in-. For this reason, then, the ni- prefix attested in the Classic texts could reflect either a proto-Ch'olan usage, a pre-Western Ch'olan usage (i.e., prior to the *k(a)- innovation), or a proto-Ch'olan retention in Eastern Ch'olan. Another important innovation to keep in mind is Lowland Mayan's (Ch'olan and Yukatekan) prevocalic third person ergative

*7uy- (~ *y), found only in those languages. Tzeltalan and Greater Q'anjob'alan have y- but not 7uy-; other Mayan languages have r- (Greater K'iche'an), t- (Greater Mamean), or in- (Wastek).

2.3.3. Nominal Morphology. For this paper the following assumptions are sufficient: adjectival modifiers precede the modified noun, possessors precede their possessees; possessors coreference their possessees with the same set of prefixes that coreference the A in transitive verbs (**table 2.34**), and that different types of relationships between syntactic possessors and possessees can be expressed by the presence or absence of various types of nominal suffixes. These suffixes are of importance here, and hence I say a few words about them. I use the formal but non-exhaustive typology of noun classes based on their morphological possession patterns shown in **table 2.36**. Some of these types are attested in most Mayan languages (e.g., n1, n4, n5, n12, n14), while others may not be (e.g., n8), according to the data I have at hand. There is a generally consistent form:function relationship across Mayan languages, such that some of the above types are associated with particular functions from language to language, subgroup to subgroup. These functions include, but quite possibly do not exhaust, the following: ownership possession, associative possession, inalienable possession, inanimate and/or impersonal possession, and animate and/or personal possession. Associative possession may be used to express the following semantic concepts: benefactive, malefactive, goal, part-of-whole, material, and origin. Furthermore, the formal marking of this type, across the languages, is generally homophonous with the derivation of abstract nouns from nouns, adjectives, verbs, and adverbs.

In Mora-Marín (2000e) I propose the reconstructions presented in **tables 2.37** and **2.38**. pre-Ch'olan-Tzeltalan can be said to have the following morphemes: *-iil (< proto-Mayan *-iil) 'alienable/personal/intimate possession' (n4a); *-eel (< proto-Mayan *-eel) 'inalienable possession' and 'abstractive' (n5b); *-iil (< proto-Mayan *-iil) 'associative possession' (n6a); and *-aal (< proto-Mayan *-aal) 'associative possession' (n6b). The

last two, *-iil ~ *-aal, were likely in complementary distribution, perhaps as a disharmonic rule (e.g., *-il after CaC roots, *-al after CiC roots), though more research is needed to clarify this. Also, regarding the constructions themselves, Ch'olan-Tzeltalan had *n1 'alienable possession', *n4 'alienable/personal/intimate possession', *n5 'inalienable possession' and 'abstractive', *n6 'associative possession', *n8 'part:whole possession', *n12 'always possessed kinterms', *n13 'suppletive pairs', and *n14 'never possessed'.

The following suffixes can be posited for Yukatekan: *-V:C(VC) (n3); *-il (n4a); *-al (n4b); *-eel (n5b); *-il (n6a); and *-al (n6b). The following types can also be posited: *n1, *n3, *n4, *n5, *n6, *n7, *n8, *n9, *n10, and *n12. The reconstruction of the marking of n3 is possible for LpM as *CV:C and *CV:CV(:)C, given the evidence from Yukatekan, Eastern Mayan, and more tentatively, from Western Mayan (i.e., Chontal), though further research is necessary.

The same set of affixes used to coreference the As on transitive verbs is used as proclitics on POSS(essees) to coreference their possessors, henceforth GEN(itives): ERG_i-POSS + GEN_i. An ADJ(ective) phrase may precede the noun, and if the noun is possessed, the ADJ follows the POSS prefix: ERG-ADJ+N.

Also, third person demonstrative/personal pronouns are attested in the CLM script, as recognized by Werner Nahm, Nikolai Grube, and other epigraphers (Alfonso Lacadena, personal communication 2001; Barbara MacLeod, personal communication 2000). The reconstructions in **tables 2.39-2.41** will be useful for this brief discussion. As I also discuss in Chapter III, these point to the forms ha7-Ø(+i) 's/he/it' (spelled **ha-7i**) and ha7-o7b'(+a/o) 'they' (spelled **ha-7o-b'a** or **ha-7o-b'o**), as well as hin(-Ø)+i 's/he/it, that one' (spelled **hi-ni**) and hin(-Ø)+a 's/he/it, this one' (spelled **hi-na**). Interestingly, Modern Chontal has both hini 'that one' and hinda 'this one' (Knowles 1984:166-167, 208; Schumann 1978:97). Assuming the d of hinda is a recent innovation, and therefore that the pronoun was formerly hina 'this one', the semantic contrast between the possible

pre-Chontal forms *hini ‘that one’ and *hina ‘this one’ suggest the presence of a morpheme +i ‘distal enclitic’ on *hini, henceforth *hin+i, and a morpheme +a ‘proximal enclitic’ on *hina, henceforth *hin+a. If so, the hieroglyphic forms pointing to hin(-Ø)+i and hin(-Ø)+a suggest the following hypotheses: (1) that texts with these forms may represent a Western Ch’olan language (since hini and hin(d)a are unattested in Ch’olti’ and Ch’orti’ and appear to be innovations); (2) that the second i of **hi-ni** and the a of **hi-na** could very well represent the postulated +i and +a enclitics of Chontal’s hini and hinda, respectively; (3) that the i of **ha-7i** could have represented the postulated +i ‘distal’ enclitic; and (4) that the second a of **ha-7o-b’a** could have represented the postulated +a ‘proximal’ enclitic, and the second o of **ha-7o-b’o** could have represented a possible +o enclitic.

While the ha7-3(s/p)ABS form shows a close affinity to the third person singular/plural personal pronouns of modern Ch’orti’ (ja7ax-Ø and ja7ax-op’) and Classical Chontal (<hain> and <hainob>), the ha7-ABS form is a retention of proto-Mayan *ha7-Ø (Kaufman 1989:75), and consequently, only the reconstructible *hin+i and *hin+a forms, which are likely innovations of Ch’ol and Chontal, can offer firm evidence of linguistic affiliation. These personal pronouns, in particular those with the form ha7-ABS, are of relevance for some of the constructions mentioned in Chapter III.

2.4. Summary of Assumptions. The Lowland Mayan languages are the most likely candidates to be represented in Late Preclassic Mayan texts based on the linguistic and archaeological evidence discussed above, and the epigraphic evidence discussed in Chapter III. There was likely strong linguistic contact among Ch’olan-Tzeltalan and Yucatekan speakers in the Mayan lowlands during Middle and early Late Preclassic times, possibly correlated archaeologically with the Mamon Ceramic Complex, and among Ch’olan and Yucatekan speakers as early as the Late Preclassic, as possibly correlated with the Chicanel Ceramic Complex.

Also, there were likely groups of Ch’olan-Tzeltalan speakers in the Mayan

highlands, near Kaminaljuyu, El Porton, Abaj Takalik, and perhaps even Chalchuapa, during the Late Preclassic period, as suggested by linguistic loanword evidence from Ch'olan-Tzeltalan into Mayan and non-Mayan languages from the region, and by evidence of intense grammatical diffusion among Poqom, Ch'olan, and Yucatekan speakers (e.g., split ergativity, the split of proto-Mayan *b' into *b' and *p').

I thus assume a grammatical model based closely on the reconstruction of Ch'olan phonology, morphology, and syntax. Yucatekan traits are also taken into account as a second option, although in many cases, due to the rather extensive diffusion of grammatical features from Yucatekan into Ch'olan (e.g., split ergativity, absolutive affixes, positional inflection) the Yucatekan data can be very insightful. I also take into account a grammatical sketch of Mayan languages, given the likelihood that there may be features of the earlier stages of the Ch'olan languages that may no longer survive in any extant Ch'olan language.

CHAPTER III:

CLASSIC LOWLAND MAYAN HIEROGLYPHIC ORTHOGRAPHY, GRAMMAR, AND LINGUISTIC AFFILIATION

3.0. Overview. In this chapter I provide the background to the epigraphic study of the Classic Lowland Mayan (CLM) script, and I also discuss some morphosyntactic constructions of potential relevance for the study of earlier texts. I mention some of the basic aspects of the orthographical conventions of the script, and discuss some of the issues still unsolved about the grammatical structure, and linguistic affiliation of the texts. I also discuss the morphosyntax of antipassive constructions in Classic texts due to their relevance in subsequent chapters.

3.1. Epigraphic Conventions.⁵¹ I follow the transcription conventions by Thompson (1962:32-33). These require the use of the numerical labels from his catalog, indicated by a preceding "T," to transcribe individual glyphs, glyphic phrases, and entire texts.⁵² The relative position of two or more glyphs with respect to one another is indicated as follows: A.B, indicates glyph A is immediately to the left of glyph B; A:B, A is on top of B; and A[B], B is inside A. The numerical labels for Epi-Olmec glyphs are from Macri and Stark (1993). I follow the transliteration conventions for Mayan signs by Fox and Justeson (1984b) and G. Stuart (1988). Logographs are transliterated with capital boldface letters if the Mayan value is known (e.g., T544 **K'IN** 'sun, day'), or in plain capitals if the semantic value is known but the exact Mayan value is not, or if two Mayan values for the same semantic value were possible (e.g., T561 **SKY** for proto-Ch'olan **chan* or pre-Yukatekan **ka7n*). Syllabographs are transliterated with small case boldface letters (e.g., T25 **ka**). I use hyphens to separate signs in a sign compound (e.g.,

⁵¹ In Footnote 12 of Chapter II I list all the abbreviations for linguistic glossings used in this dissertation.

⁵² I also use Ringle and Smith-Stark's (1996) update of Thompson's Catalog.

b'a-la-ma for Ch'olan *b'ahläm 'jaguar'), and T-numbers for signs of unknown or contested values (e.g., **ya-T840-li**). I cite Kaufman and Norman's (1984) proto-Ch'olan vocabulary reconstructions throughout the paper. I have modified them in one important way systematically: I have added glottal stops to the lexical items those authors have as vowel-initial. This is for epigraphic purposes mainly.

3.2. Representational Conventions and Phoneticism.

3.2.1. Reading Order and Format. Mayan texts read from left to right, top to bottom, in single or double columns (**figure 3.1**).⁵³ A compositional form of regularized shape and size, the glyph block (**figure 3.2**), served as the basic structural unit of texts, serving to demarcate syntactic units (e.g., noun phrases, prepositional phrases, verb phrases, and clauses), in what has been referred to as the script's punctuation system (e.g., Justeson 1978, 1986, 1989; Schele 1982). This was especially the case of monumental inscriptions, but not necessarily the case of all types of texts (cf., Mora-Marín 1999).⁵⁴ Reading order within glyph blocks was also left-to-right, top-to-bottom (**figure 3.3**). Graphically two sign forms were used (**figure 3.4**): main signs, squarish in shape; and affixes, rectangular in shape and smaller than main signs.⁵⁵ A glyph block ideally

⁵³ Some texts contain examples of both single- and double-column formats, and a few texts exhibit a triple-column format, such as Nim Li Punit Stela 1 (Grube, MacLeod, and Wanyerka 1999). Also, like Egyptian writing and other writing systems, the script sometimes uses a mirror-image format, requiring readers to read from right to left instead of left to right.

⁵⁴ Portable texts on pottery, for example, sometimes exhibit a different tendency: glyph blocks exhibit less regard for demarcating syntactic units, and sometimes are occupied by single phonetic signs. A similar disregard to demarcate syntactic units by glyph block divisions is often visible in Late Classic texts in the northern Yucatekan, such as at Xcalumkin and Chichen Itza, as pointed out by Justeson (1989). These late northern texts may be the result of the same scribal subtradition responsible for the portable pottery text tradition. Indeed, Schele and Freidel (1990) have pointed out that the northern texts characteristically consist of dedicatory statements, just like pottery texts, and deemphasize the theme of royal succession characteristic of the southern lowlands texts, a difference that coincides with differences in political economic organization between the two regions at this time.

⁵⁵ The same sign could be rendered in either fashion, and both logographs and syllabographs could also be rendered in either fashion, although logographs were ideally shown as main signs.

consisted of at least one main sign; affixes can be prefixed, superfixed, subfixed, or suffixed. Lastly, the texts are typically accompanied by pictorial images, and a very close thematic and iconic interaction between text and image is the rule (Berlo 1983; Proskouriakoff 1963; Reents-Budet 1989).

3.2.2. Artistic Conventions. The script exhibits the following set of artistic conventions for the representation of signs, some inherited from Olmec iconographic conventions (Coe 1976; Houston 1988; Stuart 1995; Justeson 1989; Justeson and Mathews 1990): (1) *pars-pro-toto* representation, whereby a part of an entity/sign stands for the whole (**figure 3.5**); (2) graphic separation, whereas two glyphs are adjacent to one another but not graphically joined (**figure 3.6a**); (3) graphic compounding, whereby two glyphs or signs are joined into a single glyph block, with one of the two signs being overlaid on top of the other (**figure 3.6b**); (4) graphic infixation, whereby a sign is reduced in size and inserted within another sign (**figure 3.6c**)⁵⁶; (5) graphic conflation, probably related to infixation, whereby two signs are blended into one (**figures 3.6d** and **3.7**)⁵⁷; (6) generic head addition, whereby the generic head of an animal, person, or deity is added next to another sign without affecting its reading or having a reading of its own (**figure 3.8**)⁵⁸; (7) generic head conflation, whereby a sign that does not iconically depict

⁵⁶ The signs that can exhibit the relationship of infix-host can be both phonetic signs used in a purely phonetic spelling (e.g., **k'i-yu[b'i]** instead of the more regular **yu-k'i-b'i** for **y-uk'-ib'** 'his/her cup'), or logographic signs, spelling a sequence of logographs (e.g., **CHUM[TUN(-ni)] chum(-ul) tun** 'seated stone'), or a phonetic sign inside a logographic sign, with the phonetic sign usually a phonetic complement to the logographic sign (e.g., **SIT-mu** for either Ch'olan **CHUM(-mu)** or Yukatekan **KUM(-mu)** 'to sit').

⁵⁷ In some cases recognition of the blend is possible only through comparison of parallel expressions of the same sequence of signs, with one case of the expression showing no conflation.

⁵⁸ There are at least two signs, T4 phonetic **na** and logographic **NAH** 'house', T35-40 **K'UH** 'god' and **K'UHUL** 'holy', both graphic affixes (i.e., flattened oval or rectangular in shape), that sometimes add a generic head (a man's head shown with hear tied in a knot, a circular ear ornament, and a spot on the cheek, though the spot on the cheek may be absent); Linda Schele referred to these generic heads as "blank heads." I think that the T1000 form of **7AJAW** is itself simply a **ROYAL.HEADBAND** determiner and a generic head (cf., spot on the cheek).

an animal, person, or deity is shown as a generic human, animal, or deity head (**figure 3.9a**); (8) full-figure writing, whereby the full pictorial form of the entity depicted in a given sign was used (**figure 3.9b**); and (9) graphic overlaying, possibly related to the pars-pro-toto convention, whereby a sign is partly overlaid by another but retains enough details to be read (**figure 3.10**).⁵⁹ These artistic licenses had a practical purpose too: to save space by inscribing two signs into a single glyph block.

3.2.4. Sign Types. The script uses four types of signs: logographs, syllabographs, semantic determinatives, and diacritics (**figure 3.11**). Logographs are signs with both phonetic and semantic values.⁶⁰ They spell CV(G)C roots (e.g., T744 **K'UK'** for descendants of proto-Mayan *q'u7q' 'quetzal (feather)'); CV(G)CVC, CVGCV(G)C, or CVCV(G)C words (e.g., T751 **B'ALAM** for proto-Ch'olan *b'ahläm or proto-Yukatekan *b'á:lam 'jaguar'); CV(G) particles (e.g., T59 **TI(7)/TA(H)**, otherwise phonetic **ti**, for ti(7)/tä(h) 'generic preposition'); and possibly -VC suffixes (e.g., T585, phonetic **b'i**, for **IB' -ib'** 'instrumentalizer'), as discussed below.

Logographs were sometimes polymorphemic: a single logograph could represent a word composed of more than one morpheme. This was not an uncommon characteristic of logographs representing names and titles.⁶¹ For example, T365 **K'INICH** 'sun-face',

⁵⁹ This strategy has been discussed in Houston (1988), Stuart (1995), and Mora-Marín (2001a). I think it may differ from the pars-pro-toto convention in one significant way: some of the examples of two signs that function as a graphemic unit, such as T124 **tzi** and T507 **tzi**, which function as phonetic **tzi** when used graphically as T124:507, may have different iconic origins. T77 **WING** and T236 **BIRD** have the same iconic origin, however, and are therefore more intimately related.

⁶⁰ Logographs may be iconic (e.g., T751 **JAGUAR.HEAD** for **B'ALAM** *b'ahläm 'jaguar'), indexical (e.g., T168:518 **JEWEL** for **7AJAW** *7ajaw 'lord, ruler'), or purely symbolic (e.g., T79 **CENTIPEDE.TAIL**, phonetic **pat** and logographic **PAT** *pät 'to form'). It is possible that symbolic logographic signs may have originally been CVC phonetic signs. That the example given, T79 **CENTIPEDE.TAIL**, functioned as a logograph is demonstrated by the fact that it took phonetic complements (**PAT(-ti)**, **PAT(-ta)**).

⁶¹ Another example is T853b, logographic **7ICH'AK** for proto-Ch'olan *7ihch'ak 'claw', could stand for *y-ihch'ak (3sERG-claw) 'his/her/its claw'. This is evident in the use of T853b **CLAW** as part of the proper name **Y-ihch'ak B'ahläm** 'Jaguar Claw' (literally 'the claw of the jaguar'), with **Y-ihch'ak** spelled either logographically as

on occasion substituted by the logosyllabic spelling **K'IN-(n)i-ch(i)**, can be broken up into two morphemes: **k'in=(7)ich** (sun=face). T740, with the logographic value read **SIJ** for Lowland Mayan ***sihj** 'be born (vi)', could stand for **sihj-(y-)aj-Ø** (be.born-(CMP-)TH-3sABS) 's/he/it was born'. This practice is evident in the spelling variations of the name of the Tikal ruler **Sihj(y)aj Cha7n K'awil** 'K'awil is born in the Sky', spelled as **T740-CHAN K'AWIL** or **T740-ja/AJ-CHAN** (figure 3.12). One could argue that spellings like **T740-CHAN K'AWIL** are examples of underspelling or defective spellings. This is a matter of point of view: the Mayan scribe probably read **Sihjvaj Chan K'awil** in both cases, suggesting that at least in some very constrained contexts, namely nominal uses of the inflected verb **sihjvaj**, T740 could be read as either **SIJYAJ** or **SIJ**.

Syllabographs (or syllabic or phonetic signs) are signs with phonetic values only. They spell CV (e.g., T1 **7u**, T25 **ka**, T501 **b'a**) or CVC (e.g., T4 **nah**, T86 **nal**, T528 **tun**, T79 **pat**) sequences (Justeson 1989; Kelley 1976; Knorozov 1958). It has been suggested that C_1V_1 syllabographs could be used as V_1C_1 signs too (Bricker 1986; Closs 1986; Fox and Justeson 1984a; Justeson 1984; Mora-Marín 2001a). Closs (1986) has called this the commutativity rule.⁶² Such a rule may have led to the reinterpretation of syllabographs used to spell frequent grammatical affixes as logographs ("morphosyllables") for those affixes (e.g., T181 **ja** used as **AJ** to spell a suffix of the form **-aj**) (Bricker 1986; Fox and Justeson 1984a; Houston, Robertson, and Stuart 2000, 2001; Houston, Stuart, and Robertson 1999; Justeson 1984, 1989). An alternative explanation based on phonetic sign usage is possible (cf., John Justeson, personal communication 1999): a phonetic

YICH'AK(-ki) B'ALAM (Seibal Tablet VI) or phonetically as **yi-ch'a-ki B'ALAM** (Aguacateca Stela 2:F2), as shown by Stuart (1987:Figure 38). Also, T36, is read **K'UH** for proto-Yukatekan ***k'uh** 'god, holy' and **K'UHUL** for ***k'uh-ul** (god-ABSTRACTIVE) 'holy'.

⁶² Closs (1986) argues that it was the result of an analogical process based on the acrophonic derivation of C_1V_1 signs from (CVC)CV $_1$ C $_1$ roots or words. In Mora-Marín (2001a) I support Closs's argument with additional examples, and argue that some $C_2V_1C_1$ phonetic signs may have originated from (CVC)C $_2$ V $_1$ C $_1$ roots or words as well, as I explain in § 3.2.4.

complement T181 **ja** to T740 **SIJYAJ**, rendering **SIJYAJ(-ja)**, could have been reinterpreted as **SIJ-AJ**, given the alternative reading of T740 as **SIJ**.

This idea runs into some problems on phonetic and morphosyntactic grounds. Due to the space limitation, here I only discuss the phonetic problems. For example, T130 **wa** was often used to spell the completive status suffix *-V₁w of root transitives (see below) spelled logographically, as in **7u-CHOK-wa** (e.g., Quirigua Stela C:C13). However, the suffix was supposed to be synharmonic with the vowel of the verb root (i.e., 7u-chok-ow), as shown by fully phonetic spellings like **7u-cho-ko-wa** (e.g., Dos Pilas Stela 8:I5), partly phonetic spellings like **7u-CHOK-(k)o-wa** (e.g., Quirigua Structure 1:G), and spellings where the w was omitted like **7u-CHOK-(k)o** (Copan Structure 22A Stone:F4). In other words, the commutativity rule cannot explain this usage of T130: the vowel of T130 **wa** cannot provide the vowel of the suffix -ow, and therefore is either silent or represents a morpheme of the form a(G) that follows the -ow suffix (i.e., -ow-Ø+a).⁶³ What is certain is that V(C) affixes were often spelled out syllabically, by means of CV-CV sequences, as in **Co-wV** for -ow. Also, without exceptions, CVC suffixes were spelled phonetically (e.g., T130:116 **-wa-ni** for proto-Ch'olan *-wan(-i) 'completive status of positionals'; T86 **nal** for -nal 'agentive' or 'place'). Despite the problem discussed here and others that deserve their own paper, I think that commutativity did in fact exist as a rule or principle; this subject has been revived recently with the "morphosyllable hypothesis," which I mention below.

Semantic determinatives are signs with semantic values only; sometimes they disambiguate readings (**figures 3.11c and 3.13**), but often they simply reflect a categorization of objects, people, and gods (e.g., the **KNOB** element present on human body parts) without otherwise affecting a sign's reading (Hopkins and Josserand 1999).

⁶³ Certain deictic enclitics can follow a verb. In Yukatek these are -a7 'proximal enclitic', -e7 'topical enclitic', -i7 'scoping enclitic', and -o7 'distal enclitic'. For example, the verb phrase **b'ey 7il-á7ab'-ik-en-a7** (ADVERB see-PASSIVE-CMP-1sABS+PROX) means 'I was seen like this'.

Lastly, diacritics are optional signs that are essentially devoid of semantic or phonological values, and are used simply to clarify an orthographic rule (**figure 3.11d** and **3.14**); though I know of only one clear example, the case of the reduplication dots (e.g., **ka^{2X}-wa** to represent **ka-ka-wa** for kākāw ‘chocolate’) discovered by Stuart (Stuart 1988; Stuart and Houston 1994) and recently studied by Zender (1999), there may be more examples.

3.2.4. Composition and Spelling Conventions. Words can be spelled in a purely logographic manner (e.g., **B’ALAM** for proto-Ch’olan *b’ahlām ‘jaguar’), in a partly logographic and partly syllabic manner, as in **(b’a-)B’ALAM(-ma)**, or in a purely syllabic manner, as in **b’a-la-m(a)** (**figure 3.15a**). Phonetic complements can precede a logograph, as in **(wa-)WAY** (**figure 3.15d**) and **(wa-ya-)WAY** (**figure 3.15f**) for proto-Ch’olan *way ‘animal spirit, shapeshifter, sleep’ (**figures 15d,f**), they can come both before and after a logograph (**figure 3.15b**), or they can follow it, as in **MAN(-ma-na)** (**figure 3.15c**), **WAY(-ya)** (**figure 3.15e**), **WAY(-wa-ya)** (**figures 3.15g**).

Purely phonetic spellings of roots and words were accomplished with CV signs, as in **wi-ni-ki** for Lowland Mayan *winik ‘person, man’, but also with CVC signs or with a combination of CV and CVC phonetic signs, as in the use of logographic T535 **NIK** for Yukatekan *nik ‘flower’ as a phonetic sign **nik** in the phonetic spelling **wi-nik-ki** for the same word (**figure 3.16**). For this purpose, logographic signs of GVC, CVG, and CVC shapes (G = /: h j w y ʔ/ could be used, via rebus phoneticism, to spell CV, GVC, or CVC phonetic sequences, including affixes (Justeson 1989). Syllabographs for the following CV sequences are attested: 7V, pV, tV, kV, tzV, chV, b’V, p’V (one sign from Landa, a possible **p’e**, may have a Classic counterpart), t’V (one so far, **t’u**, another posited by David Stuart, **t’a**), k’V, tz’V, ch’V, lV, mV, nV, hV, jV, sV, xV, wV, and yV (Justeson 1984a:xiv).

In logosyllabic and syllabic spellings of monomorphemic nouns the V of the last CV sign was generally not read (e.g., **b’a-la-m(a)**). In logosyllabic spellings of

polymorphemic nouns, as Bricker (1989) shows, consonant insertion could take place, as in **7u-K'IN-(n)i-l(e)** for 7u-k'iin-il 'the day' (figures 3.17a,b). This was also the case of logosyllabic spellings of polymorphemic verbs, or inflected verbs, as in **7u-CHOK-(k)o-w(a)** for 7u-chok-ow-Ø(+a) (3sERG-throw.down-CMP-3sABS(+ENCL)) 's/he threw it down (here)', discussed below.

Vowel insertion was another strategy used by Mayan scribes (Bricker 1989:43). If her analysis of T181, for example, as **-AJ** is correct, then the following could be a case of the insertion of an additional vowel that is not pronounced, as indicated by the parentheses (figure 3.17c): **chu-k(u)-AJ** for chu[h]k-aj-Ø-Ø (seize([(M)PASS])-(M)PASS-CMP-3sABS). Another example is **yo-ko-b'i-li** for y-ok-b'-il (3sERG-enter-INSTR-POSS) 'his/her/its entrance' (figure 3.17d).⁶⁴ Finally, consonant deletion was another strategy used in syllabic spellings in various contexts, and is discussed by Bricker (1989) and Justeson (1989): C₁VC₁ roots could be spelled with a single C₁V sign, especially in preconsonantal contexts in compound words, as in the case of **K'UK'=MO7(-7o) ~ k'u-mo-7(o)** for k'u7k'=mo7 'quetzal macaw' (figures 3.17e,f).

⁶⁴ While Houston, Robertson, and Stuart (2001:22) analyze this spelling as **yo-ko-IB'-IL** for y-ok-ib'-il, and thus regard the **b'i** and **li** signs as the morphosyllables **-IB'** and **-IL**, respectively, their analysis ignores the proto-Ch'olan morphophonemic vowel syncope rule, whereby the "penultimate vowel of stems of more than two syllables" is lost, as in **na7at > *na7t-ä*, **eb'et > *eb't-el*, **ixim > *ixm-ä*, **xihäb' > *xihb'-ä*, and others (Kaufman and Norman 1984:86). Under this rule, an underlying /y-ok-ib'-il/ would be realized as y-ok-b'-il, which can be straightforwardly spelled **yo-k(o)-b'i-l(i)** according to well-established spelling rules of Mayan writing (i.e., vowel insertion). This analysis is strongly supported by the spellings **7o-ki-b'i** and **yo-ki-b'i** that are attested in the same text (Palenque Temple XIX Throne) where **yo-ko-b'i-li** is found. **7o-ki-b'i**, an unpossessed form, makes perfect sense as 7ok-ib', with the underlying suffix -ib' fully explicit phonetically (i.e., **ki-b'i**) without the need to invoke a morphosyllable analysis. **yo-ki-b'i** spells y-ok-ib', a possessed form of 7ok-ib'; this is not a case of intimate possession, and is also effortlessly analyzable phonetically without the need to invoke a morphosyllable strategy. In other words, the spellings **7o-ki-b'i** and **yo-ki-b'i** support the analysis of the second o in **yo-ko...** as a silent vowel inserted simply to allow the spelling of the consonant k in the form y-ok-b'-il, and also the analysis of T585 **b'i** not as a morphosyllable but as a purely phonetic sign providing the vowel of a following suffix -il.

Nasal-, liquid-, and glide-final roots could be spelled without their nasal consonant in preconsonantal position in compounds and in word-final positions (figures 3.17g-k). Additional examples include **7i-tz'i-ni** for 7ihtz'in 'younger sibling' (Calakmul Ballgame Panel in Freidel, Schele, and Parker 1993:349) vs. **7i-tz'i-WINIK** for 7ihtz'i(n)=winik 'younger sibling person' (Naj Tunich and Site Q), and in word-final position, as in **tz'u-nu** vs. **tz'u-nu-nu** for *tz'unun 'hummingbird'; and **7AJAW-le** instead of the also attested **7AJAW-le-l(e)** for *7ajaw-lel (ruler-ABSTR) 'rulership'.

As I mentioned before, I do think that Mayan scribes applied a commutativity principle in some instances. For example, the spelling of the Maize God's name is typically **HUN-NAL-ye** (figure 3.18a), but in one occasion it is shown as **HUN-NAL-7e-ya** (figure 3.18b), suggesting that the phonetic sign **ye** in **HUN-NAL-ye** was in fact meant to be read as (7)**ey**, not **ye**. A **Ca** sign was used to close the spelling of (G)VC sequences in word-final contexts, as in **HUN-NAL-(7)e-ya**: if the use of such a **Ca** sign was a convention, rather than an attempt to spell a final -a(G) morpheme, one might explain why in the more typical spelling **HUN-NAL-ye** there is no indication whatsoever of a word- or phrase-final a. If so, the **Ca** sign is used only for its consonant, not vowel, which would be neutral or silent. Interestingly, though **HUN-NAL-(7)e-ya** ~ **HUN-NAL-ye** spell a proper name, a **Ca** sign usually closes the spelling of verbs with expressed suffixes. The vowel of **Ca** signs used in the spellings of verbal suffixes as in **7u-cho-ko-w(a)**, for 7u-chok-ow-Ø 's/he threw it down', or **chu-ka-j(a)**, for chuh|k-aj-Ø-Ø 's/he/it was seized', or **hu-li-y(a)**, for hul-iy-Ø 's/he/it arrived (here)', may likewise be neutral or silent. Either way, it seems that commutativity was an optional rule.

Additional support for this comes from the Leyden Plate, dated to A.D. 320, where the spelling **SIT-li-ja**, instead of the more common **SIT-la-ja** for chum-laj-Ø (sit-CMP.POS-3sABS) 's/he/it sat', is found. In this case, the **li** sign is not aiding in the spelling of the positional suffix -laj (< -l-aj) 'completive status of positionals' (Kaufman and Norman 1984); instead, it provides the consonant for the -V₁l 'stative' suffix in

chum-(u)l-aj. The vowel of the -aj suffix is instead provided by T181 **ja**, it seems, as **aj/AJ**. Thus, the commutativity principle may have been in practice as early as A.D. 320. There is evidence from perhaps fifty years earlier for this rule. Indeed, on a jade plaque from Costa Rica that may date to A.D. 270, as mentioned in Chapter V, the spelling **TUN-chi** (figure 3.19e), very likely for Yukatekan tùn-ich ‘stone’, is present as the subject of the verb **K’AL-ja/AJ** for k’a[h]l-aj-Ø-Ø(+a) (wrap[(M)PASS]-(M)PASS-CMP-3sABS(+ENCL)) ‘it was wrapped (here)’. Based on similar uses of T671 **chi** in the spelling of k’in=ich ‘sun-face’ with T544 **K’IN** as **K’IN-ni-ch(i)** (figure 3.19b) and **K’IN-chi** (figures 3.19c,d), it seems likely that T671 was used either as a morphosyllable **-ICH** (i.e., **TUN-ICH** and **K’IN-ICH**) or as a phonetic complement to a polymorphemic logograph (i.e., **TUNICH(-chi)** and **K’INICH(-chi)**).

One of the most important debates at the present pertains to synharmonic and disharmonic phonetic spellings of words. Knorozov (1958) proposed the existence of an orthographic rule in the script which he called the synharmony principle, which has already been illustrated above (e.g., **b’a-la-m(a)**).⁶⁵ According to this rule, $C_1V_1(G)C_2$ roots or words are spelled as follows: $C_1V_1-C_2V_1$. Furthermore, the final vowel of the spelling is silent: $C_1V_1-C_2(V_1)$. Knorozov used this rule as a guide to read undeciphered signs, and in doing so he met with complete and partial successes.⁶⁶ Kelley (1962) later showed that synharmony was not by any means a rigid rule, and that some readings that Knorozov proposed based on the synharmony approach needed revision. Thus, disharmonic spellings, whereby $C_1V_1(G)C_2$ roots or words were spelled with phonetic sign sequences of the form $C_1V_1-C_2(V_2)$ are now known to make up a significant proportion of phonetic spellings. An example is the spelling of the word y-ih₂z’in ‘his

⁶⁵ Synharmony rules are not uncommon in syllabic scripts, such as Linear B.

⁶⁶ While Knorozov was correct in identifying synharmonic spellings such as **tzulu** for Yukatekan kùutz ‘wild turkey’ (Bricker, Po7ot Yah, Dzul de Po7ot 1998:135), his hypothesis led him astray in other cases: he proposed the reading **b’u** for T501 based on its word-final context to spell ‘. However, T501 was shown to read **b’a** by Kelley (1962) based on a word-medial context (**7i-b’a-cha** for 7ib’ach ‘armadillo’).

younger sibling' as **yi-tz'i-n(a)**, also attested with a synharmonic spelling as **yi-tz'i-n(i)**. Consequently, the controversy today surrounds the following questions: When was synharmony obligatory or optional? When was disharmony obligatory or optional?

Regarding, the first question, Justeson (1989:35) has shown that $C_1V(G)C_1$ roots were generally spelled synharmonically: $C_1V-C_1(V)$. This is the case of roots like proto-Ch'olan ***k'uk'** 'quetzal' (from proto-Mayan ***q'u7q'**) spelled **k'u-k'(u)**, ***pohp** 'mat' spelled **po-p(o)**, ***k'ahk'** 'fire' spelled **k'a-k'(a)**, ***tz'unun** 'hummingbird' (from proto-Mayan ***tz'uunu7n**) spelled **tz'u-nu-n(u)**, among others. Justeson (1989) has also pointed out that all CV_7 roots were spelled synharmonically: $CV_1-7(V_1)$. This is the case of roots like proto-Ch'olan ***mo7** 'macaw' spelled **mo-7(o)** or **MO7(-7o)**, ***te7** 'tree, wood' spelled **TE7(-7e)**, ***k'ab'a7** 'name' (Lowland Mayan ***k'aab'aa7**) spelled **K'AB'A7(-7a)**, among others. Other types of roots were always spelled synharmonically, such as proto-Ch'olan ***7ajaw** 'lord, ruler' (from proto-Mayan ***7aajaaw**) spelled **7a-ja-w(a)** or **7AJAW(-wa)**, proto-Ch'olan ***chan** 'sky' (from proto-Mayan ***ka7N**) spelled **CHAN(-na)**, proto-Ch'olan ***k'än** 'yellow' (from proto-Mayan ***q'an**) spelled **K'AN(-na)**, and proto-Ch'olan ***tahn** 'chest' (from Greater Lowland Mayan ***tahn**) spelled **TAN(-na)**.

There were still others that were regularly spelled disharmonically, such as a descendant of proto-Ch'olan ***chahuk** 'lightning' similar to Ch'ol's **chahk**, spelled **CHAK(-ki)** or **cha-k(i)**, proto-Ch'olan ***b'ak** 'bone' (from proto-Mayan ***b'aaq**) spelled **B'AK(-ki)** or **b'a-k(i)**, proto-Ch'olan ***7ihch'ak** 'claw' (from proto-Mayan ***7iSk'aq**) spelled **YICH'AK(-ki)** or **yi-ch'a-k(i)**, among others. Lastly, some roots or words could be spelled synharmonically or disharmonically, such as the proto-Ch'olan verbal noun ***tz'ihb'** 'writing': **tz'i-b'i** or **tz'i-b'a**.

There are various proposals to deal with disharmonic spellings. Justeson (1989) has argued that a phonological principle may have been at work: when the root vowel is **o** or **u** followed by an apical consonant (**t**, **n**, or **ch**) the vowel of the second

CV sign would tend to be i (apical), and when the root vowel is i, e, o, or u followed by a labial consonant (p, b, or w, except for m), the vowel of the second CV sign would tend to be a. Some exceptions to his proposed environment for disharmonic spellings can be shown to fall under the cases of exceptionless environments for synharmonic spellings. Justeson (1989:35) noted that while “TuT roots,” where T signifies an apical consonant, “would otherwise be expected to be spelled Tu-T(i), in cases like the spelling çcu-çc(u) for *çcuçc ‘loom’, the obligatory synharmonic rule for C₁V(G)C₁ roots takes precedence.

Another set of exceptions to the synharmony principle is found in the spellings of verbs. On this regard Justeson (1989:35) has suggested that

typical suffixing on verbs may have affected their spellings. The citation form of intransitive verb roots is 3rd person completeive, marked by an -i(h) suffix: in spelling such roots, Ci signs are favored for syllable-closing consonants, as in Cholan ENTER-(či) for oč and Yucatecan ENTER-(ki) for ok ‘enter’, while transitive verb roots are synharmonic.

In other words, because of the fact that the completeive status marker of intransitive verbs was *-i, the spelling of intransitive verbs is characterized by an overwhelming frequency of Ci signs for the final syllable of the verb, where the status marker would be. For example, the spellings **hu-li** ~ **HUL-(l)i** for *hul-i-Ø (arrive.here-CMP-3sABS) ‘s/he/it arrived here’ show disharmony, but in this case the disharmony can be readily explained by the fact that the i of the **li** sign is probably spelling -i ‘completeive status of intransitives’. Also, phonetic spellings of active root transitive verbs are all synharmonic, without exceptions. This fact and the fact that the reconstructed completeive status suffix of root transitives in proto-Ch’olan is *-V₁ from proto-Mayan *[-o(w)] (Kaufman and Norman 1984; Kaufman 1989) are not likely to be a mere coincidence.⁶⁷ Consequently, fully and partly phonetic spellings of

⁶⁷ Justeson and Campbell (1997) make exactly this argument: they propose that in the spellings **7u-cho-ko-wa** and **7u-CHOK-(k)o-wa** for 7u-chok-ow-Ø(+a) ‘s/he threw

finite verbs cannot be considered as evidence for assessing the constraints on synharmony or disharmony because they may reflect the spelling of a status suffix that was not silent.⁶⁸

Justeson (1989:35) also points out that some disharmonic spellings of nouns, such as **tz'i-b'a** for *tz'ihb' in **7AJ-TZ'IB'(-b'a)** ~ **7AJ-tz'i-b'a** 'scribe', could also be influenced by the potential for derivation of a verbal noun like *tz'ihb' 'writing' into a verb by means of an *-ä 'applicative' derivational suffix, as in proto-Ch'olan *tz'ihb'-ä 'to write/paint (vt)' (Kaufman and Norman 1984).⁶⁹ There is some support for this hypothesis. Other nouns exhibit similar spelling patterns. One is spelled **tu-pa** in **7u-tu-pa** for *7u-tup 'his/her/its earring' (cf., proto-Yukatekan *tùup), and in **tu-pa-ja** for *tup-aj-Ø(+a) (earring-INTRANSITIVIZER-3sABS(+ENCL)) 'it was adorned (with earring(s))', if -aj represents an intransitivizer of verbal nouns attested in modern Ch'olan-Tzeltalan languages (Kaufman and Norman 1984; Lacadena 1996), or for *tup-aj (earring-GEN) 'earring', where -aj might represent an absolute/generic (unpossessed) suffix (cf., Houston, Robertson, and Stuart 2000; Zender 2001). Regardless of the function of the -aj suffix it is clear that a frequent

down incense (here)', the o of **ko** and the w of **wa** are very likely spelling the -V₁w suffix for 'completive status'.

⁶⁸ The absence of phonetic spellings of the closing syllable of a finite verb can reflect the fact that the status suffixes were optional or omissible (Kaufman 1989; Kaufman and Norman 1984): *-i ~ *-Ø 'completive status of intransitives' and *-V₁(w) ~ *-Ø 'completive status of transitives'. Thus, **7u-CHOK** could represent 7u-chok-Ø-Ø 's/he threw it down', and **HUL** could represent hul-Ø-Ø 's/he/it arrived here'. In fact, the spellings **7u-CHOK** and **7u-CHOK-(k)o**, both used in active transitive clauses with a following indefinite/generic object, as well as in **ti-CHOK** and **ti-CHOK-(k)o**, both used as gerundial complements (ti+chok-ol 'throwing (down)') of the noun **7u-B'AH** 7u-b'ah ('his/her image') in sentences of the type 'It is image of X throwing (incense)', are characterized by identical environments that suggest that the differences in spelling were not context-motivated, but simply orthographically equivalent representational forms (i.e., **7u-CHOK** = **7u-CHOK-(k)o** = 7u-chok-o-Ø 's/he/it threw it down').

⁶⁹ It may even be possible that **7AJ-tz'i-b'(i)** could mean literally 'he of writing' while **7AJ-TZ'IB'-(b')a** could mean literally 'he who writes'. If this was the case, **7AJ-TZ'IB'-(b')a** might have spelled 7aj-tz'ihb'-ä rather than just plain 7aj-tz'ihb'.

orthographic usage (i.e., the spelling of this -aj suffix whatever its function), could have influenced the spelling of the same word without the suffix.⁷⁰

Authors like Bricker (1986, 1989) and Hofling (1989) have argued that disharmonious vowels were perhaps not supposed to be silent, but represented a vowel-initial suffix with a weak consonant, or in other words, a consonant likely to be deleted in pronunciation in word-final, phrase-final, or utterance-final positions, such as l, n, ʔ, h, w, or y. Thus, the i of the syllabograph **ti** in the spelling **7u-mu-ti** for 'his/her/its bird', rather than being silent **7u-mu-t(i)**, rendering **7u-mut**, could instead be spelling the -il possessive suffix, as **7u-mut-i(l)**.⁷¹

Houston, Stuart, and Robertson (1998:276) have recently proposed that disharmonious vowels have a function unrelated to representing a final -VC suffix:

We propose another view, (1) that synharmonic spellings yield CVC or, more rarely, CVCVC roots, and (2) that disharmony marks additional, medial elements within roots: CV:C (which preserved Common Mayan *CV:C or *CV'C > CV:C) or CVhC (which preserved Common Mayan *CVhC). To put this another way, disharmony registers what we call 'complex vowels': those with vowel length, a feature formerly thought to have been ignored in Maya script (Justeson 1989:33).

These authors thus argue that (CV)CVGC roots and words (G = /:/, /h/, /ʔ/) were spelled syllabically following a disharmony rule: the last CV sign of a (CV-)CV-C(V) spelling of a (CV(G))CVGC word differed in its vowel from that of the preceding CV sign, resulting in (CV-)CV₁-C(V₂).

⁷⁰ A similar argument can be made for other glyphs. For instance, the word ***hun** < ***hu7n** 'paper, book' was regularly spelled either as **HUN-na** ~ **hu-na** or **7u-SAK-HUN/hu-na-la**. The spelling with **-la** occurs when the word for paper is possessed. Because these are the most common spellings, it is possible to suppose that the final a of **HUN-na** ~ **hu-na** was in a sense anticipatory or reflective of the second most common spelling **...HUN/hu-na-la**, which would suggest a possessive suffix of the form -al or -äl.

⁷¹ Houston and Stuart, according to Houston, Stuart, and Robertson (1998:276), have also considered such a possibility, in particular for examples like **7u-b'a-ki** for 'his/her/its bone' found as ownership statements on inscribed bones; they hypothesized that the glyph could perhaps render ***7u-b'ak-i(l)**.

In a review of Houston, Stuart, and Robertson (1998), Justeson (personal communication, 1999; 2000) has argued that the only regularity of statistical significance in their data set, which he has expanded and improved upon by eliminating equivocal examples, is not one correlating disharmonic spellings with complex vowel nuclei, but instead, one correlating synharmonic spellings of the shape CV-Ca with root vowels corresponding to ā: **Ca-Ca** for CāC. Justeson has eliminated terms whose etymology and phonological shapes are uncertain but which Houston, Stuart, and Robertson have included in their analysis by assuming the correctness of their hypothesis (e.g., **MAN-ni**, which they reconstruct as *maan despite the fact that they do not know what it means and cannot posit any reflexes in the modern descendants or cognates in related subgroups; also **ka-se-wa**, which they reconstruct as *kaseew based on its spelling but do not provide an etymology; **ma-su**, which they reconstruct as *maas and simply translate as a “reference to dwarf” based on its context, without attestation in modern languages). He has also eliminated finite verbs for the reasons alluded to above, and the spellings of the suffixes **-wa-ni** and **-la-ji** because they may be representing the reconstructed proto-Ch’olan suffixes *-wan-i and *-laj-i ‘completive status of positionals’ rather than just *-wan and *-laj (Kaufman and Norman 1984).⁷² And last, Justeson has corrected the classifications by Houston, Stuart, and Robertson (1998) of certain roots they claim to be CVGC but which are in fact CVC (e.g., *hul ‘to arrive (here)’, which they reconstruct as *huul; Yukatekan hub ‘conch shell’, which they reconstruct as *juub’ presumably based on the disharmonic spelling alone, since they provide no cognates suggesting an uu

⁷² Intransitives spelled CV-Ci may represent CV(G)C-i forms (e.g., **hu-li** for *hul-i arrive.here-COMPLETIVE) rather than CVGC forms (i.e., **hu-li** for *hu:l), which means that all such root intransitives, even CiC roots (e.g., *hil spelled **hi-li**), will be spelled CV-Ci regardless of their vowel complexity (i.e., V or VG). By the same token, transitives spelled CV₁-CV₁ (e.g., **cho-ko** for *chok ‘to throw (down)’ may simply be spelling the reconstructible *[-V₁(w)] ‘completive status of root intransitives’ (e.g., 7u-chok-o(w)-∅ ‘s/he/it threw it down’), which is supposed to be synharmonic (Justeson and Campbell 1997; Kaufman 1989)

form), and roots they claim to be CVC in the language represented in the texts but which were CVGC or are reflexes of CVGC forms (e.g., *tz'ihb' spelled synharmonically despite preconsonantal h preserved in the modern Ch'olan languages but which these authors reconstruct as *tz'ib' for the Classic language).

In the data provided by Houston, Stuart, and Robertson (1998:286), the most significant number of disharmonic cases are the examples of roots of the form Ca(G)C, with a total of 21 examples. **Table 3.1** lists these examples. The most significant number of synharmonic cases are the examples of roots of the forms Ca(G)C and Cä(G)C, with a total of 24 examples (**table 3.2**); the total of spellings in their data is 91. All other examples of disharmonic cases (i.e., Ci(G)C, Co(G)C, Ce(G)C, Cu(G)C roots) in their sample total only 25, and all other examples of synharmonic cases (i.e., Ci(G)C, Cu(G)C roots) total 23. Justeson (2000) has focused on the most significant patterns: the synharmony of Cä(G)C spellings (18 examples out of 24 synharmonic examples with **Ca** word-final signs in the data by Houston, Stuart, and Robertson), and the disharmony of Ca(G)C spellings. Based on this, he argues that Classic scribes may have in fact represented a distinction between a and ä through a consistent use of **Ca** syllabographs for syllable-closing consonants whenever the vowel preceding those consonants was ä, and by the same token, an avoidance of **Ca** syllabographs for syllable-closing consonants whenever the preceding vowel was not ä.

If correct, Justeson argues, such a strategy would suggest the six-vowel system proposed by Kaufman and Norman (1984) for proto-Ch'olan times, in which *V: > V and *a > ä, rather than a pre-Ch'olan(-Tzeltalan) system where *VV and *V were still phonemically distinct, for which ten distinctions, not just six, would be necessary.

Another proposal is a recent one by Wichmann and Lacadena (2001). The following are the spelling rules they propose, vis-a-vis disharmony, now assumed by some epigraphers (e.g., Grube and Martin 2001:80):

- (1) Ca + Ca > CaC; Ca + Ci > CaaC; Ca + Cu > Ca7C;
 (2) Ce + Ce > CeC; Ce + Ca > CeeC; Ce + Cu > Ce7C;
 (3) Ci + Ci > CiC; Ci + Ca > CiiC; Ci + Cu > Ci7C;
 (4) Co + Co > CoC; Co + Ca > CooC; Co + Ci > Co7C; and
 (5) Cu + Cu > CuC; Cu + Ci > CuuC; Cu + Ca > Cu7C.

There are numerous exceptions to these proposed rules. The following are just a few of the exceptions to (1): (i) for the Ca + Ca > CaC rule, **k'a-b'a** and **K'AB'A-7a** for *k'aab'aa7 'name' (the rule would predict *k'ab'a7), **7a-ja-wa** for *7aajaaw 'lord, ruler' (the rule would predict *7a(a)jaw); (ii) for the Ca + Ci > CaaC rule, **ch'a-hi** for *ch'aj 'bitter', **yi-ch'a-ki** for *y-ihch'ak 'its claw' (the rule would predict *ch'aa7 and *y-ihch'aak, respectively); and (iii) for the Ca + Cu > Ca7C rule, the word **7a-ku** is actually *7ahk 'turtle' not *7a7k, and at the same time, known Ca7C and CahC words may be spelled in ways other than the proposed rules would prescribe (e.g., **HAB'-b'i**, not **HAB'-b'u**, for *ha7b' 'year', **ma-xi**, not **ma-xu**, for *ma7x 'spider monkey'). There are similar exceptions for (2)-(5) as well. I think that the number of exceptions is such that the synchronic utility of the presumed rules is very questionable. If there was an emic spelling rule of the sort supported by these epigraphers, it may have been a retrospective affectation.⁷³ I suspect the conscious motivations behind regularly disharmonic spellings are determined by the process proposed by Justeson (1989): the most common grammatical usages of a root may have influenced its spelling in most contexts. In this way, **tu-pa** in **7u-tu-pa** 7u-tu(u)p 'his earring' was spelled with a word-final Ca sign because of its spelling **tu-**

⁷³ Some rules in English orthography are the result of an after-the-fact coincidence rather than of preemptive design, and their utility is very restricted. For instance, the "rule" that words that are spelled as C(C)aCe (e.g., mate, crane, place) have an /e/ first vowel and a final silent vowel is the result of the historical development of a mismatch between orthography and language and of the adoption of alternate spellings for some words. Thus, its regularity is not necessarily a useful fact: the same words, or homophonous words, could be spelled in other ways (e.g., plane vs. plain).

pa-ja for tu(u)p-aj ‘earring’, the absolute inflection; **7a-ku** for proto-Ch’olan *7ahk ‘turtle’ may have been spelled with a word-final **Cu** sign given the -ul suffix present in its alternative spelling **7a-ku-la** (i.e., **7a-ku-l(a)**) as in the name of Palenque’s fourth and sixth rulers **7a-ku-la MO7-NAB’**); and **TUN-ni** for proto-Ch’olan *tun may have been regularly spelled with a word-final **Ci** sign given the -il suffix commonly attested with this word, as **TUN-(n)i-l(i)**, among other examples.

The very high incidence of the nominal suffix -il in Lowland Mayan languages could very well explain the preference for signs of the form **Ci** word-finally in the disharmonic spellings of nouns with vowels other than i as their root vowel. One would expect the need to spell such a frequent suffix as an early motivation for the systematic development of **Ci** phonetic signs (e.g., **ni** in **TUN-(n)i-l(i)**). Interestingly, after the nominal suffixes of the form -il, it is the set of nominal suffixes of the form -al which is the most common (**table 2.38**); this fact, and the fact that a suffix of the form -aj marked the absolute form of some nouns, could explain why the second most frequent set of CV signs used as a word-final sign in disharmonic spellings of nouns was the **Ca** set.

In conclusion, when faced with the question of how to spell any given noun, the Mayan scribes may have opted for the most easily regularizable spelling, or in other words, the spelling that would remain constant in more contexts (e.g., **TUN-ni** in **K’AL-wi TUN-ni** for k’al-w-i-Ø=tun wrap-AP-CMP-3sABS ‘s/he stone-wrapped’ and **TUN-ni-li** in **7u-LAKAM-TUN-ni-li** for 7u-lakäm-tun-il 3sERG-great-stone-POSS ‘his/her great stone’). The only apparently significant spelling regularity that may be attributable directly to the quality of the vowel of a noun root may be the one suggested by Justeson, namely, the nearly exceptionless synharmonic spellings of **Cä(G)C** roots, which would indicate a six-vowel system, and therefore, a proto-Ch’olan, Western Ch’olan, or pre-Eastern Ch’olan system.

3.3. Grammatical Structure and Linguistic Affiliation.

3.3.1. Verbal Morphology. The verbal morphology of the script has received intense scrutiny by various scholars, especially since the early 1980s. The most systematic attempts at describing full verbal paradigms have been Schele's (1982), MacLeod's (1984), Bricker's (1986), and Stuart, Houston, and Robertson's (1999), Wald (1994), Lacadena (1996, 1998, 2001), Houston (1997), Zender (1997), Mora-Marín (1998), and Houston, Robertson, and Stuart (2000). Here I only discuss a few of these proposals that pertain to the subject matter of this dissertation.

Bricker (1986) has proposed the verbal inflection paradigm shown in **table 3.3**. Her classification implies the presence of split ergativity in the Classic texts. It also suggests a Yukatekan affiliation for the texts, primarily due to her reconstruction of the suffix -aj as 'completive' (e.g., **CHOK-(k)a-j(a)** based on the root transitive chok 'throw down', in **figure 3.20e**), although she includes in the paradigm the completive status of positionals -wan, which is found exclusively in Ch'olan and was identified in the hieroglyphic texts by MacLeod (1984). Bricker (1986) first proposed the presence of a passivizing or mediopassivizing infix -h- in intransitized root transitives spelled with a single logographic sign (e.g., **CHOK** for cho[h]k-Ø-Ø 'it was/got thrown down', in **figures 3.20d**), as well as the reconstruction of a suffix -Vw as the completive status of root transitives in the CLM script. Wald (1994) later presented a proposal for interpreting this suffix as -V₁, suggesting that the w of the CV₁-CV₁-**wa** (CV₁C-V₁w, as in **7u-cho-ko-w(a)** for 7u-chok-ow-Ø 3sERG-throw.down-CMP-3sABS 's/he threw it down', in **figure 3.20g**) spellings was optional. More recently, Justeson and Campbell (1997) have argued that the suffix of root transitives was in fact [-V₁(w)], and constitutes a direct descendant of the proto-Mayan suffix *[-o(w)] 'plain status of root transitives' reconstructed by Kaufman (1989). This is supported by the fact that the suffix is omissible (**figure 3.20b**).

Lacadena (1996) has proposed another paradigm. He assumes, as does Wald (1994), that the w spelled with T130 **wa** and T117 **wi** in the spellings of completive

active transitives is silent (e.g., **7u-tz'a-pa-wa** for 7u-tz'ap-a-Ø). He argues that the passive voice of root transitives was marked with an infix -h-, as did Bricker (1986), and that a thematic suffix -aj follows the verb (e.g., **tz'a-pa-ja** for tz'a[h]p-aj-Ø).⁷⁴ Lacadena also proposes the presence of derived active and passive transitive verbs: derived active transitives take -V (e.g., **7u-tz'i-b'a** for 7u-tz'ihb'-a-Ø), where -a is a “thematic suffix of ts'ib when it functions as a verb,” while derived passive transitives take a -n ‘passive suffix’ followed by a thematic suffix -aj (e.g., **tz'i-b'a-na-ja** for tz'ihb'-n-aj-Ø). The -aj thematic suffix, which I regard to have been -a(j), was a suffix of derived intransitives, he argues, as demonstrated by its use with the verbal noun *7ahk'ot ‘to dance’ in order to make an intransitive verb (e.g., **7AK'-ta-ja** for 7ahk't-aj-Ø-Ø and **7AK'-ta** for 7ahk't-a-Ø-Ø ‘s/he danced’, figures 3.20l and 3.20m). Here I assume the identification of the -a(j) suffix present on verbal nouns such as *7ahk'ot as an intransitivizer of nouns.

More recently, Lacadena (personal communication 2001) suggests that there were two thematic suffixes, -aj ~ -ijj, which he traces to reconstructible proto-Ch'olan-Tzeltalan intransitivizing suffixes *-aj and *-ijj.⁷⁵ I disagree with Lacadena in a few points. First, the transitive form of tz'ihb' ‘writing’ uses not a thematic suffix, but a proto-Ch'olan applicative suffix *-ä, reconstructed by Kaufman and Norman (1984). Second, even though the suffixes -a and -j from Ch'orti' (-a(j) and -i(j) in Ch'olti') are used as thematic vowels of intransitives, it is not possible to conclude that they were

⁷⁴ I think it is possible, though perhaps untestable for orthographic reasons, that spellings like **CHOK** may have indicated the presence of an infix -h- ‘(medio)passive’ (i.e., cho[h]k), while spellings like **CHOK-ja/AJ** may have indicated the presence of a suffixed -aj ‘(medio)passive’ with no co-occurring -h- infix (i.e., chok-aj); Kaufman (1989) has proposed the reconstruction of *-h- ‘mediopassive of root transitives’ and *-aj ‘mediopassive of derived transitives’ for proto-Mayan, making it possible that the two were kept semantically distinct even if they were used on the same type of verb (root transitives) by Classic times.

⁷⁵ Lacadena explains the long vowel ijj of the second allomorph based on the fact that this suffix is usually spelled disharmonically as **Ci-ja**, and thus he assumes the validity of the disharmony hypothesis alluded to above.

thematic vowels in the hieroglyphic texts, for two reasons: (1) as Lacadena recognizes, -aj and -ij (his -aj ~ -ij) are cognate with Tzeltalan's *-aj ~ *-ij 'intransitivizers', and with Ch'ol's -aj 'intransitivizer', suggesting that they were simply 'intransitivizers' in proto-Ch'olan and Western Ch'olan, rather than thematic suffixes⁷⁶; and (2) intransitivized root transitives in Classic texts may also be spelled CVC (no visible affixes of any sort, just a logograph for the verb root), or VT-yi ~ VT-(C)V₁-yi (no -aj or -i(i)j suffix immediately after the root, only a -V₁y suffix which likely corresponds to Kaufman and Norman's (1984) reconstructed -V₁y 'completive status of intransitives' for Eastern Ch'olan). Thus, the -aj and -i(i)j suffixes were not thematic yet in the texts, since they were not intrinsic to derived intransitives, or else they would be present in the VT, VT-yi, and VT-(C)V₁-yi verbal inflections, which are also derived intransitives (passives or mediopassives).

Fox and Justeson (1984) suggested that T126, whose phonetic ya reading was unknown at the time, represented the completive status marker of intransitive verbs, *-i(h). Since its decipherment as ya (Bricker 1986; Stuart 1987), it has become clear to some epigraphers that the suffix of root intransitive verbs was spelled with a word-final Ci sign by itself (e.g., hu-li for hul-i-Ø 's/he/it arrived (here)', in figure 3.20h), with the sequence Ci-ya (e.g., hu-li-ya, as in figure 3.20i, and HUL-(l)i-ya, as in figure 3.20j), or with plain ya (e.g., (hu-)HUL-ya, as in figure 3.20k). Indeed, Stuart (1987) argued that the y of the T126 ya of spellings like hu-li-ya was quite possibly a phonetic complement to the i of the preceding Ci sign, which would suggest the presence of an -i(y) suffix spelled Ci(-ya). More recently, Justeson (personal communication 2000) has suggested that T126 ya may have served two functions: it may have spelled an enclitic of the form +a(G) (G = /h, ʔ, w, y, :, Ø/) following the completive status marker -i and the -Ø 'third

⁷⁶ In fact, Modern Ch'ol also has the suffix -ij 'intransitivizer', evident in the following intransitive derivation from kuch 'load/cargo (n)': cuch-ij-el 'to carry [on back] (vi)' (Aulie and Aulie 1978:39). This then strongly supports the reconstruction of proto-Ch'olan *-aj ~ *-ij 'intransitivizers'.

person absolute', and at the same time, an epenthetic y placed in between the -i and the +a(G). Kaufman (1989) indeed reconstructs a set of verbal deictic markers, among which is +a, attested in Yukatek as +a7 'proximal deictic'. The idea that the final a of ya and other Ca signs that regularly close the spellings of transitive and intransitive verbs (e.g., 7u-CHOK-wa, CHOK-wa, CHOK-(k)a-ja, 7u-to-ma, hu-li-ya, CHUM-la-ja, 7AK'-ta-ja) may have been simply a neutral or silent vowel used conventionally in that way in these contexts has also been entertained by various epigraphers (Robert Wald, personal communication 2000). I regard the spellings of root intransitive verbs with Ci signs for the second C of the CV(G)C root to be too regular to be merely an arbitrary convention, or to be a convention aimed at representing a preceding complex vowel nucleus⁷⁷: they must be spelling the expected *-i(v/h) 'completive status of intransitives' suffix. As for the T126 ya sign, I think it is likely that the y is in fact meant to represent either an epenthetic y, or a simplified suffix -iy 'completive status marker'. This is suggested by the spellings hu-li-ya and (hu-)HUL-ya, where the verb hul 'to arrive (here)' is spelled phonetically in the first case and logographically in the second. Indeed, the first spelling attests to an -iy 'completive status' suffix in hul-iy-Ø(+a(G)) 's/he/it arrived (here)', while the second spelling attests to a -y < -iy suffix and to the likely presence of a following vowel-initial morpheme explaining the simplification of a -VC suffix to -C, as in hul-y-Ø+a(G), underlyingly /hul-i-Ø+a(G)/. This simplification process is common in both Ch'olan and Yukatekan.

Houston (1997) and Houston, Robertson, and Stuart (2000), in contrast, argue that CLM texts exhibit no aspect/status markers, only present and past tense. This hypothesis presupposes that Ch'olan languages, and in particular Eastern Ch'olan, the subgroup these authors argue was exclusively represented in the texts, lost the aspect/status-marking system reconstructible all the way backward to proto-Mayan, and was reinvented

⁷⁷ The second possibility is contradicted by examples of verbs such as hi-li based on proto-Ch'olan *hil 'rest', and by spellings of verbs whose vowels could not have been complex on historical linguistic grounds, such as ta-li for proto-Ch'olan *täl 'come'.

in both Ch'olti' and Ch'orti', the descendants of proto-Eastern Ch'olan. By their account, verbs like **hu-li** and **hu-li-ya** represent a present vs. past tense distinction, 's/he/it arrives (here)' and 's/he/it arrived (here)', respectively. I regard this proposal as highly unlikely, though not impossible. Interestingly, Stuart, Houston, and Robertson (1999) have recently pointed to several possible instances of aspect markers in the script; this suggests they may be proposing a tense system with aspect-marking particles, rather than a status system with aspect-marking particles.

3.3.2. Antipassives. Lacadena (1998) and Mora-Marín (1998) have both studied the verbal morphology and syntax of antipassive verbs. Lacadena (1998) has recognized the use of suffixes of the general shapes -(V)w and -(V)n in absolutive and agentive antipassive constructions, and on root transitive and derived transitive verbs. He notes that -n is used on derived transitives in agentive antipassive constructions (e.g., with *7il(-ä) 'see' and *pät-b'u 'to make'), but it was also used with root transitives (e.g., *pas 'open' and *mak 'cover'). In Mora-Marín (1998) I set out to test Lacadena's analysis, and presented a typology of antipassive constructions that includes some types not discussed by Lacadena (e.g., antipassive nominalizations, absolutive antipassives with oblique Os). I also presented an analysis of chaining constructions involving coordinated clauses with the same pivot argument, and agreed with Lacadena's identification of the antipassive markers as exhibiting the general shapes -(V)w and -(V)n. I think that the **wV** sign (always **wa** or **wi**, but not **wo**, to my knowledge) was used in the Classic period for at least two functions: absolutive and agentive antipassives based on root transitives. There is at least three good cases of possible absolutive antipassives that **nV** (**ni** and **no**, specifically). One case from Copan shows **7u-CHOK-no-ma** for presumably *7u-chok-n-om(+a) (3sERG-throw.down-AP-POT(+ENCL)) 'he would throw down', in what would correspond to an incompletive antipassive verb with split ergativity. The **nV** sign was also used in agentive antipassive constructions.

In this paper I assume the following typology, which I illustrate in **figure 3.21** and

communication, 2000):

- (3.5) ru-b'an-o-n-ik
3sERG-work-TH-APASS-VI.NOM
'His doing'
*'He is/was doing'
- (3.6) ru-tzij-o-n-ik
3sERG-word-TH-APASS-VI.NOM
'His speaking'
*'He is/was speaking'
- (3.7) ru-tz'ib-a-n-ik
3sERG-write-TH-APASS-VI.NOM
'His writing'
*'He is/was writing'

Norman and Larsen (1979) have in fact proposed that (active) verbal nouns could have been the starting point for the reanalysis of possessed verbal nominalizations as finite progressive forms in Yukatekan. Kaqchikel could very well be undergoing the beginnings of split ergativity in verbal inflection, at least in some lexical/syntactic domains.

I also think that antipassive nominalizations can lead to split ergativity at the level of interclausal combination constraints. The following example from Poqomam, provided by Norman and Larsen (1979:360), shows an incompletive antipassive clause in agent-questioning extraction:

- (3.8) ha7+wach nu-ru-sik'-w-i
WHO_i INC-3sERG_i-seek-APSS-PF

r-eh+ma7 waan
3sERG_j-DATIVE John_j

'Who is looking for John?'

by chok always refers to an action undertaken by a human agent; the patient is always the noun ch'aj '(incense) drops'. If the expression were interpreted as an agentive noun, the presence of **7u-** for 7u- 'third person ergative/possessive prefix' would indicate a possessed noun 'his/her/its thrower, the thrower of'. If so, the noun would likely be the subject of the preceding verb **7u-to-ma** for 7u[h]t-om-Ø 's/he/it would be finished', and the clause would be 'his/her/its thrower would be finished'. Contextually this makes little sense: again, the chok verb always refers to a ritual performed by a human agent on an inanimate patient on a certain date (year-endings).

Second, support for the suggestion that this is contextually unsatisfactory comes from another text with a semantically equivalent but syntactically different passage in Naranjo Altar 1 (figure 3.22a):

(3.10)	7u-to-m(a)	7u-CHOK-wi	7AJ-wo-sa
	<u>7u[h]t-om-Ø</u>	<u>7u-chok-(V)w(-il)</u>	<u>7aj+wos(a)</u>
	finish[MPASS]-POT-3sABS	3sERG-throw-AP	MALE+Wos
	5-7AJAW	3-CHEN	
	5-7ajaw	3-Ch'en	
	5-Ahau	3-Chen	

'The throwing of 7aj Wos would be finished (on) 5 Ahau 3 Chen'.

In this example, the phrase 7u-chok-(V)w(-il) 7aj+wos 'the throwing of 7aj Wos', consists of a possessed antipassive nominalization, 7u-chok-(V)w(-il) 'his throwing, the throwing of', followed by its possessor, who is underlyingly the agent of the 'throwing' action. The whole possessive phrase functions as the subject of the (medio)passive verb 7u[h]t-om-Ø 'It would/will be finished', which is the only verb with the -om 'potential/future' suffix. Both passages likely convey the same basic meaning: the finishing of an incense-throwing ritual by a particular person on a specific date.

Consequently, it is very unlikely that the 7u-chok-(V)n-om expression was meant as an agentive noun, and more likely that it was meant as a verb; if so, then the verb

would be intransitive due to antipassivization, and in turn, the 7u- ergative prefix would mark this construction as split ergative, and therefore as an incompletive intransitive. Still, both of the examples discussed here are Late Classic in age, and it is not clear what their relevance for Late Preclassic texts would be if any.

3.3.4. Nominal Inflection. Houston, Robertson, and Stuart (2001) have recently provided a detailed analysis of nominal and adjectival morphology in the Classic script. They discuss the functions of various possessive and absolute/generic suffixes. Recently, Zender (2001) has also provided a detailed analysis of absolute/generic suffixes of nouns. Examples of these are shown in **figure 3.23**.

The independent pronouns are of particular interest for determining the linguistic affiliations of CLM texts. Indeed, Werner Nahm (Lacadena 1998) interpreted the hieroglyphic spellings **ha-7i**, **ha-7o-b'a**, and **ha-7o-b'o** as spelling the third person singular and plural personal pronouns ha7-Ø 's/he/it' and ha7-o7b' 'they'. Soonafter, several epigraphers noted the presence of **hi-ni** and **hi-na** also as personal pronouns; the **ha-7i** and **hi-na** examples can in fact co-occur, as in the text on pot K1440 (Kerr 1989:83). The first forms, based on ha7-, resemble closely the forms attested in Chontal and Ch'orti', while the second forms, based on hin-, resemble closely the forms of Chontal and Ch'ol (cf., **table 2.38**). Given that the ha7- form is reconstructible to proto-Mayan (Kaufman 1989), this form should not be used for determining the linguistic affiliation of the texts, since it could simply be a retention in any of the modern languages that may have gotten modified (e.g., ha7-in > (hi7-in >) hin-i) or lost. However, the hini form, attested in Chontal and Ch'ol, is apparently a Western Ch'olan innovation, and can be used to determine linguistic affiliations. Thus, texts with **hi-ni** and **hi-na** are likely representing Western Ch'olan languages, while the **ha-7i** and **ha-7o-b'V** examples could be spelling either Western or pre-Eastern Ch'olan, since the ha7+ABS base is a retention from proto-Mayan. For the purposes of Late Preclassic texts, proto-Ch'olan-Tzeltalan, pre-Ch'olan, proto-Eastern Ch'olan, and proto-Western Ch'olan should be expected to

have had *ha7- as the base for the personal pronouns.

3.3.5. Prepositional and Relational Noun Phrases. Prepositions and prepositional phrases have been studied by Josserand, Schele, and Hopkins (1985), MacLeod (1990), Macri (1991), and Grube (1991). These authors have discussed gerundial prepositional phrases (e.g., **7u-B'AH ti-CHOK-(k)o** [PERSONAL.NAME] for 7u-b'ah ti+chok(-ol) [Personal name] 'It is the portrait of [Personal Name] throwing'), adjectival prepositional phrases (e.g., **yu-k'i-b'i ti-TE7-7e-le ka-ka-wa** for y-uk'-ib' ti+te7-el kākāw 'It is his/her cup for fresh chocolate'), adverbial prepositional phrases (e.g., **JOK'-yi ti-7AJAW jok'-(o)y-i-Ø ti+7ajaw** 'He rose/was.tied as lord'), and instrumental prepositional phrases (e.g., **7AK'-ta-ja ti-[INSTRUMENT] 7ahk't-aj-Ø-Ø ti+[instrument]** 'He danced with [instrument]'), respectively.

It has also been widely recognized too that temporal and locative adjunct phrases may optionally take this generic preposition ti7 (e.g., **(ti-)10-7AJAW** for (ti+)10-7ajaw '(It was) (on) 10 Ahau (when)...'). In addition to these uses of prepositional phrases based on ti7, there are three more functions attested in the texts (**figure 3.23**), as I argue in Mora-Marín (1998, 1999a, 2000a, 2000b, 2001): (a) an addressee prepositional phrase (e.g., **ya-la-ji-ya hu-b'i ti-chi-ji** for y-al-Ø-Ø+jiy(+a) hub' ti7+chihj 'Conch Shell had said to Deer'); (b) an oblique object prepositional phrase (e.g., **7u-7UCH'7UK'-ni ti-ka-la-2*ka-wa PAWATUN-K'IN-7AJAW** for 7uch'-n-i-Ø ti7+kal-a(l)=kākāw pawahtun k'in 7ajaw 'Pawahtun K'in 7ajaw drank from the alcoholic chocolate'); and (c) as an oblique agent or benefactive prepositional phrase (e.g., **na-wa-ja 7u-B'AK-ki ti-ya-(7)AJAW-TE7** for na[h]w-aj-Ø-Ø(+a) 7u-b'a(a)k(-il) ti7+yajaw=te7 'His prisoner was adorned by/for Yajaw Te7'). Finally, a relatively common glyph, **7u-T526/528(-hi)(-ya)** is used to express human agents and causers (**figure 3.23c**) of both transitive and intransitive/positional clauses, though it is still unclear whether this glyph represents a verb or a possible relational noun. These types of constructions could be similar to the inverse constructions present in some Mayan languages, such as Akatek (Zavala 1997).

3.3.6. Word Order. Consistent with most Mayan languages, CLM texts exhibit a verb-initial BWO, whether VS or VOA, or more generally, a P(redicate)-initial BWO, or PS, where the predicate is a verb, noun, or adjective phrase (Bricker 1986; Schele 1982). In Mora-Marín (2001b) I present preliminary arguments for several cases of PWO in CLM texts (AVO, OVA), and more generally for their BSS of CLM texts as TOPIC/FOCUS [VOA], which is so far consistent with England's proposed BSS for proto-Mayan. In **figure 3.24** I show examples of the following word orders: VS, VOA, AVO, VOA (antipassive), OVA, AVO (antipassive).

3.3.7. Discourse Structure. Josserand (1991, 1995), Josserand and Hopkins (2000), Wald and MacLeod (1999), and Stuart (1991), among a few others, have described and analyzed the discourse structure of Classic Mayan texts, with regard to the grammatical features used to background or foreground different types of events. They have defined the following components of the structure of CLM narratives: events, episodes, event-line, background, and foreground. Events are of two main kinds: background and peak. An episode consists of several events related to one another sequentially along a common time frame. A peak event is the central event of an episode or narrative, and may be marked by T679, syllabic **7i** and logographic **YUWAL** '(and) then, when' (Justeson 1993; Justeson, personal communication 2000), or by marked syntax. Background events, signaled by the presence of the syllabograph T126 **ya**, which aids in spelling a morpheme that is generally translatable as 'since, after' in this context, may or may not relate to the event-line of the peak event; either way, events marked as background with T126 **ya** precede peak events marked with T679 **7i/YUWAL**. The form of the morpheme represented in part by T126 has been convincingly proposed to be roughly **+ij-iyy ~ +iyy** 'already/ago/earlier' by Wald (2000); it may be cognate with Colonial Chontal **<-ihi>** and **<-i>**. Because I regard it as unlikely that synharmonic spellings reflect vowel length, I think a better transliteration would be **+ij-iy ~ +iy**.

In Mayan languages coordination of clauses may be realized by means of

juxtaposition of the conjuncts or by means of conjunctions. In the Classic texts both strategies are used, with T679 **7i/YUWAL** functioning as the conjunction ‘and then, when’ (e.g., Justeson 1993). It is likely, in my opinion, that **yi-ta-ji/hi** was another conjunction meaning simply ‘and, with’, but I defer arguments for this for another paper. T126 **ya**, a phonetic sign, is used as a “background” deictic marker, translatable roughly as ‘since, after’ (Josserand and Hopkins 2000; Wald and MacLeod 1999).

As I already noted in Chapter II, in Mora-Marín (1998) I conducted a study of pivot-chaining constructions focusing on the use of passive and antipassive verbs to feed pivot constraints. In it, I concluded that CLM texts seem to exhibit an S/S syntactic pivot constraint, requiring transitive verbs to be intransitivized through passivization or antipassivization. I have since revised and refined some of my previous conclusions (Mora-Marín 2001b): I have identified examples of S/S, S/A, A/A, S/O, and possibly also A/GEN and S/GEN pivot chains, and argue that CLM texts do not exhibit an obligatory syntactic pivot constraint, whether nominative (S/A) or absolutive (S/O), for interclausal coordination constructions. The S/O examples constitute cases of switch reference: the S/O pivot is always old information while the A non-pivot role is new information. There is an overwhelmingly high incidence of S/S chains, and for this reason I have defined S as the preferred discourse pivot of CLM texts.

3.4. Summary and Assumptions. The following assumptions regarding the orthographic conventions and grammatical structure of CLM texts are particularly important for subsequent chapters.

(1) CLM texts exhibit a series of artistic conventions, some of which had practical purposes, such as condensation of the space necessary for representing more than one sign. These include: pars-pro-toto representation; graphic separation; graphic compounding; graphic infixation; graphic conflation; generic head addition; generic head conflation; full-figure writing; and graphic overlaying.

(2) There were four main types of signs: logographs, syllabographs, semantic

determiners, and diacritics. Logographs may have been monomorphemic and polymorphemic. Syllabographs were of the shapes CV and CVC.

(3) There may have been a commutativity principle of orthographic representation allowing C_1V_1 phonetic signs to be used as V_1C_1 signs, though the evidence is not yet conclusive, and in many cases a phonetic complementation explanation may be fitting.

(4) Purely phonetic spellings and postposed phonetic complements, in my view, may not represent in diacritic fashion preceding complex vowels through disharmony. It is still too premature to simply assume the disharmony hypothesis by Houston, Stuart, and Robertson (1998), or the modified version by Lacadena and Wichmann (Grube and Martin 2001), especially in light of the many exceptions and inconsistencies. In light of other explanations, including one based on observable orthographical practices pertaining to the standardization of frequent spellings of inflected or derived stems (e.g., **yo-(7)OL(-la)** for y-ohl 'his heart' vs. **7o-la-si** for 7ohl-as 'heart', both take a root-closing phonetic **la** sign), and one based on the possibility that it was the synharmonic spelling of Cä(G)C roots and sequences that Mayan scribes may have been after (Justeson 2000). As a result, disharmonic spellings, the vast majority of which applied to Ca(G)C roots and sequences, may have been an attempt at least in part to show that a certain root or sequence was not Cä(G)C (Justeson 2000).

(5) Several orthographic conventions were used: consonant insertion, vowel insertion, and consonant deletion, for example, as described in Bricker (1986) and Justeson (1989).

(6) Root intransitive verbs were consistently spelled in one of two ways: logographically with no explicitly spelled affixes, or logosyllabically with a Ci root-closing sign suggestive of the expected *-i 'completive status' marker of intransitives.

(7) Root transitive verbs were consistently spelled in one of three ways: logographically with no explicitly spelled suffixes (e.g., **7u-CHOK**), logosyllabically with a CV₁ root-closing sign (e.g., **7u-CHOK-(k)o**) or simply a **wa** sign (e.g., **7u-**

CHOK-wa), or phonetically with two a CV-CV₁-**wa** sign sequence (e.g., **7u-cho-ko-w(a)**), all of which are consistent with the expected ***[V₁(w)]** ‘completive status’ marker of root transitives.

(8) There were probably several marked voices, including passive, mediopassive, and antipassive. There were probably several types of antipassive constructions, consisting of three major types: agentive, absolutive, and incorporative.

(9) The generic preposition **ti7** was used for a wide variety of purposes, including the expression of gerundial complements, adjectival complements, manner adverbial complements, instrumentals, temporal and locative adjuncts, addressee prepositional phrase, oblique objects, and oblique agents or benefactives.

(10) Various clause- and sentence-level word orders are attested: VS, VOA, AVO, VOA (antipassive), OVA, AVO (antipassive). VOA and VS were likely the basic word orders.

(11) Various multiclausal sentence types are attested. They are defined in terms of the roles of the coreferential arguments in the conjoined or sequential clauses: S/S, S/A, A/A, S/O, S/GEN, A/GEN. The most frequent type is the S/S type, given the overall higher frequency of noun phrases in S role; the S/GEN and A/GEN cases may constitute examples of conjoined clauses based on the coreferentiality of noun phrases in S or A role in one clause and in possessor (genitive) role in another.

UNIT II:

EPIGRAPHIC CASE STUDIES

CHAPTER IV:

THE DEDICATORY FORMULA OF CLASSIC MAYAN TEXTS

4.0. Overview. In this chapter I offer a brief overview of prior work on the structure of the dedicatory formula of Classic Mayan texts, also referred to as the Primary Standard Sequence, or PSS. I carry out an epigraphic and linguistic analysis of my own.⁷⁸ The purpose is to evaluate previous discussions and proposals, and to provide a framework for analyzing the structure of dedicatory texts on other media. I argue for a typology of possible constituent structure types and possible sentence types that supports previous proposals and also fills in some blanks. I conclude that the PSS can be composed of more than one clause, and that each clause may have a different subject.

4.1. Background.

4.1.1. The Primary Standard Sequence. Thompson (1950:26, 1962:14-18) argued that texts inscribed on pottery were in their majority of a purely ornamental and nonsensical nature. He did not think this of bone, shell, and jade objects, which he pointed out were often of a similar textual and iconographic subject matter as those on monumental media.⁷⁹ Despite this shortsighted interpretation about the nature of texts on pottery, Thompson was the first to observe the frequency of recurring glyphic compounds on pottery, such as T229.617 and T61.77:585, among others. His observations on, and terminology for, some of these glyphs have been adopted by subsequent authors, including Coe (1973, 1978), Stuart (1986), and MacLeod (1990).

Coe (1973, 1978) decisively changed the Thompsonian view of pottery texts as nonsensical. He conducted a structural analysis of a subset of 48 inscribed vases,

⁷⁸ This chapter is a synopsis of a monograph 'A Preliminary Typology of the Structure of the Classic Lowland Mayan Dedicatory Formula' to be published online at www.famsi.org.

⁷⁹ He did admit that a few pottery texts, which he regarded as the exception rather than the rule, exhibited subject matter similar to that of monumental media.

showing: (1) that primary texts tend to show a repetitive and formulaic structure consisting of at least 35 different glyphic compounds which exhibit a strict relative order with respect to one another, and (2) that individual texts can consist of anywhere from 4 to 22 glyphs. He dubbed this formula the Primary Standard Sequence (PSS) (**figure 4.1**), and suggested that it represented “codified chants or recitations” (1973:18).⁸⁰ Coe’s seminal contribution is the preliminary definition of the position of each glyph within the PSS, which other epigraphers have subsequently refined with the use of larger data sets.

4.1.2. Name-Tagging and Emic Nomenclature.⁸¹ The first step in achieving a linguistic analysis of the PSS was given by Mathews (1979), Justeson (1983), and Stuart (1985). Mathews (1979) described a passage on an obsidian earplug from Altun Ha, Belize, as reading **7u-tu-pa** + PERSONAL.NAME (**figure 4.2**); he interpreted **7u-tu-p(a)** as 7u-tup ‘his/her/its earplug’ based on a gloss from the colonial Yukatek Motul dictionary (Martínez Hernández 1929:872), and paraphrased the entire text as ‘the earplugs of [Personal Name]’, analyzing the structure of this statement as a possessed noun, the inscribed object itself, followed by the name of its owner, which was coreferenced on the possessed noun by means of a third person ergative prefix. Mathews claimed that this portable text with a name-tag and ownership statement was unique for the Classic Mayan script.

Justeson (1983) soon after refined the translation of 7u-tup as ‘earring’ based on glosses from modern Itzaj, Lakantun, Mopan, and Yukatek; in the latter the term is tùup (cf. Bricker, Po7ot Yah, and Dzul de Po7ot 1998:286), suggesting that the hieroglyphic form was either *tuup if pre-Yukatekan (or *tùup if proto-Yukatekan or Yukatekan).⁸²

⁸⁰ Coe adopted in part the terminology used by Thompson (1962) for some of its more common glyphic compounds (e.g., Wing-Quincunx, Fire-Imix, Serpent, Fish, Hand-Monkey).

⁸¹ In Footnote 12 of Chapter II I list all the abbreviations for linguistic glossings used in this dissertation.

⁸² Justeson (1983:42) points out that this term only appears in Yukatekan languages, and in no other language subgroup. This does not preclude the possibility that

Also, he pointed out that the glyph appears in ear ornaments different from ear plugs, and therefore that other types of objects were also inscribed with name-tags and ownership statements.

Stuart (1984, 1987) extended the range of artifact types with name-tags and ownership statements to carved bones, and dog effigies; Schele and Stuart (1986) and Stuart (1986) added stelae to the list of name-tagged media; and Houston and Taube (1987), Houston, Stuart, and Taube (1989), Stuart (1986, 1988), and Grube (1986, 1989, 1991) provided detailed evidence for the presence of name-tags and ownership statements in pottery containers of three main types. Indeed, these last authors described a complementary distribution relationship among three different terms referring to functionally different pottery vessel types (**figure 4.3**). These consisted of the glyph **7u-la-k(a)** for 7u-làak ‘his/her dish’, **7u-ja-wa-TE7** for 7u-jawa(n)-te7 ‘his/her wide (tripod dish)’, and **yu-T77/128-b’i/b’a** for either y-uch’-ib’ or y-uk’-ib’ ‘his/her (drinking) cup’.⁸³ They also noted that the PSS texts on pottery provided additional information regarding the artifact types, such as the possible contents of the vessels (e.g., **ka-ka-w(a)** ‘chocolate’, **SAK-HA7** ‘atole, maize gruel’). And lastly, these same authors, in addition to Stuart (1987, 1989), Grube (1991), and MacLeod (1990), have argued that the texts on pottery refer not only to the pots themselves, but also to parts of the pots, such as their decorations: thus, they argue the glyph **7u-tz’i-b’(i)** commonly present in the PSS of pottery vessels may read 7u-tz’ihb’ ‘his/her/its writing’, perhaps referring to the inscribed text itself. In short, virtually any artifact type could be name-tagged and owned, parts of the artifact could be mentioned in the texts, and the use or function of the artifact could be described too.

Ch’olan once had it and lost it, or that it may have even been a borrowing from Yukatekan into a Ch’olan language.

⁸³ The latter interpretation of the glyph **yu-T77/128-b’i/b’a** was first offered by Stephen Houston and Barbara MacLeod (cf. Stuart 1989:150), while more recently Mora-Marín (2000) has presented evidence for the reading of T77 as **k’i**, which would favor y-uk’-ib’.

4.1.3. Dedicatory Statements. MacLeod (1990) has proposed the reading **7AY** for the IS, for which additional evidence is presented below. MacLeod (1993) and Stephen Houston have also proposed the reading **K'AL** 'to wrap' for the FLAT.HAND glyph, a reading now accepted by most epigraphers on very good grounds. Regarding the GOD.N and STEP glyphs, Houston (1986) argued that they were equivalent, mutually exclusive, and sometimes conflated with one another. However, as MacLeod (1990) has shown, there is at least one example (i.e., K1921) where they co-occur not just in the same text, but actually adjacent to one another, suggesting that they represented different, though perhaps semantically similar, verbs. MacLeod (1990) has argued for the readings **HOY/HUY** 'to bless, to inaugurate' for the GOD.N and STEP glyphs, supported with clear phonetic complementation and spelling evidence. More recently, Elizabeth Wagner (Schele and Grube 1995:197) and Stuart (1995) have proposed the reading **T'AB'** 'to anoint' for the STEP sign, though to my knowledge based on very scanty evidence (see below). A detailed discussion of these two glyphs is not permissible in this paper, but in a future paper I will argue for the readings **HUY** and **7UY** for the GOD.N/STEP verbs.

4.1.4. The Grammar of the Primary Standard Sequence. Houston and Taube (1987), Grube (1985, 1986, 1990, 1991), and Stuart (1989) have made it clear that the core component of the PSS corresponds to the possessed noun phrase (e.g., 'it is the cup of Mr. X'), and that the preceding glyphs, the so-called Introductory Glyphs (i.e., Initial Sign (IS), FLAT.HAND, GOD.N, and STEP glyphs) were probably verbal glyphs referring to the manner of crafting and dedication of the possessed noun.⁸⁴

Stuart (1989), Grube (1990), and MacLeod (1990) recognized the existence of prepositional phrases following the possessed noun which serve as complements modifying the noun (i.e., they provide information regarding the types of contents of the

⁸⁴ Schele (1982) analyzed the IS, FLAT.HAND, GOD.N, and STEP glyphs as verbs on syntactic grounds. As argued below, however, the IS is not a verb but an 'existential' particle with a predicative function.

vessels).⁸⁵ Stuart provided a first typology of PSS structures:

- (1) Possessed Noun + Personal Name;
- (2) Possessed Noun + Prepositional Phrase + Personal Name; and
- (3) Introducing Glyphs + Possessed Noun + Prepositional Phrase + Personal Name.

Grube (1990) modified Stuart's view by pointing out that the Possessed Noun Phrase can consist of more than one possessed noun (e.g., **7u-ja-yi + yu-T77-b'i**).

MacLeod (1990) has agreed with this general scheme, and proposed that all the verbs in the PSS were inflected as completive intransitives. She further added the following structure, which she regards as an abbreviated PSS:

- (4) IS + **tz'i-b'i + na-ja + hi-chi**.

She also suggests that some glyphs could exhibit more than one syntactic function (e.g., **tz'i-b'i** for tz'ihb' 'writing, to write' could function both as a noun and as a verb), that **na-ja** was used as an antipassivizing suffix -n-aj (i.e., suffixed to the GOD.N or **tz'i-b'i** glyphs), and that **hi-chi** represented a root for 'page' and could function in the PSS either as an incorporated noun (e.g., after **tz'i-b'i-na-ja**, rendering something like tz'ihb'-n-aj=hich-Ø 'it got page-written') or as a possessed noun of the form **yi-chi(-li)** functioning as subject (e.g., after GOD.N).

More recently, Lacadena (1996) has suggested that the **na-ja** glyph spells the passive of derived transitives, -n-aj, attested in Eastern Ch'olan. As I explain next, some of these interpretations may require revision (e.g., **na-ja** as a -n-aj suffix), while others are thoroughly supported by the evidence presented here (e.g., multiple functions of

⁸⁵ This very constrained structural interpretation, consisting of Possessed Noun (PN) + Prepositional Phrase (PP), where the PP contains maximally a modifier and a following noun referring to the vessel's contents, allowed them to decipher additional glyphs (e.g., **tzi-hi** for tzih 'fresh, raw', **ch'a-j(a)** for ch'aj 'incense', **7u-l(u)** for 7ul 'corn gruel').

certain glyphs as nouns, adjectives, verbs).⁸⁶

4.2. Discussion of Selected Glyphs from the PSS.

4.2.1. The Initial Sign. MacLeod (1990) first proposed a reading for the INITIAL.SIGN (IS) of PSS texts, most often spelled with T617 as a main sign. Given its text- and clause-initial contexts, typical of the existential grammatical particle in many Mayan languages, and the likely phonetic complements of T617, typically **7a-** and **-ya**. MacLeod proposed the reading **7AY** ‘existential particle’, attested in Ch’olan-Tzeltalan as ***7ay** (Kaufman and Norman 1984). In more recent years, however, new readings have been advanced: **7AL-ya** based on Ch’olan ***(7/h)al** ‘to say’, suggested by various epigraphers but not in print (to my knowledge), and **la-ya** presumably based on ***7ila(-i)** ‘this’, suggested by MacLeod (personal communication, 1999). I think that the evidence strongly points to MacLeod’s original reading, **7AY** ‘existential particle’, and that the varied spellings and inflections apparent in the glyphs cannot be used to support the **7AL** or **la-ya** readings. Rather than presenting here a full review of the data for these proposals I prefer to simply outline some of the evidence used by MacLeod (1990), as well as new evidence which she did not originally take into account.

The first line of evidence comes from the spelling and inflection patterns of the IS. Some of these are illustrated in **figure 4.4**. I have taken into account several of the main signs that regularly substitute for the generic T617 IS₁. The first such substitute, the FISH.HEAD or RAIN.GOD head, henceforth IS₂, common in the Early and Late Classic periods, is shown in **figures 4.4a-e**, where the spelling patterns **7a-IS₂**, **7a-IS₂-ya**, and **7a-ya-IS₂** suggest a logographic reading **7AY** (i.e., **(7a-)7AY**, **(7a-)7AY(-ya)**, **(7a-ya)7AY**, respectively). Two additional main signs that substitute for T617 on occasion during the Late Classic only are T574(?), the TAMALE sign, henceforth IS₃, and T769, the MAW.OF.THE.UNDERWORLD sign, henceforth IS₄. IS₄ is known to have the

⁸⁶ Stephen Houston (Alfonso Lacadena, personal communication 2001) observed around 1996 or earlier that there were cases of the **na-ja** glyph that occurred in contexts where a function as a suffix cannot be sustained.

logographic reading **WAY** for **wäy* ‘animal spirit’ (Schele 1990). **IS**₃ too may have this reading; both it and **IS**₄ are found in various contexts supporting this reading, including the **7IK’-WAY** ‘black transformer’ placename (figures 4.4g,i), often spelled with the more common **WAY** glyph, T539 (Houston and Stuart 1989). As shown in figures 4.4f,h, these signs were used in the spelling **7a-IS**₃-**ya** and **7a-IS**₄-**ya** instead of the more common **IS**, T617. This could suggest the reading **7a-WAY-ya**. But if instead of **WAY** one reads it as **(W)AY** > **(7)AY**, a possibility supported by examples such as T552 **K’AT** also with the reading **7AT** (i.e., **(K’)AT** > **(7)AT**) (Lounsbury 1989), then the spellings could read **7a-7AY-ya**. I think it is possible that **IS**₂, the FISH.HEAD/RAIN.GOD sign, may have been used in this way if it had a reading **KAY** for *chay* or *kay* ‘fish’; a reading **7AY** may have been derived through the same process as the reading **7AT** of T552 **K’AT**. I think it is not likely a coincidence that at least two signs with readings **CAY** (TAMALE, MAW.OF.THE.UNDERWORLD), and possibly a third one (FISH.HEAD/RAIN.GOD), were used to spell the **IS**.

Lastly, there is evidence from the spellings of the **IS** using the T617 form (**IS**₁) that suggest that it in fact reads **7AY**. The earliest examples of the glyph, attested in the DO pectoral (see Chapter VI), Balakbal Stela 5 (figure 4.4j), and various other Early Classic sites, show **IS-ya**. This suggests a likely CV or CVC reading for the **IS**, and if T126 **ya** is a phonetic complement, a CVY reading, and even possibly a CAY reading if there is synharmony. Another early spelling shows **IS-la** (figure 4.4k), suggesting at first a CVL or CAL reading. However, there is evidence from regular spellings of the forms **IS-ya-la** (figure 4.4l) and **7a-IS-ya-la** (figure 4.4n) that point to CVY, and suggest a representation of a word of the form CVy-al whenever a **la** sign is present. While there are spellings that place the **la** sign on top of the **IS** (figures 4.4m,o), it is not uncommon for signs to be placed in a position unrelated to their correct reading order for aesthetic purposes: T168 **7AJAW** was almost always placed on top of the toponym or polity name in the Emblem Glyph context (e.g., **K’UHUL.7AJAW:MUTUL**), even though its correct

linguistic order was after the toponym or polity name (i.e., **K'UHUL-MUTUL-7AJAW**). In contrast, there are no examples, to my knowledge, of a phonetic sign appearing as the last sign in a sequence of one or more phonetic signs (e.g., **la** in **IS-ya-la** or **7a-IS-ya-la**) that was in fact meant to be read first (i.e., **la-IS-ya** or **7a-la-IS-ya**), with the only exception being the aberrant spelling **MUWAN-ni-wa** at Yaxchilan. This fact, as well as the assumption of free substitution among all the initial sign variants discussed here, the free substitution of known **CAY** signs for **T617**, and especially the spellings **7a-ya-IS**, all suggest that the reading of the **IS** was in fact **7AY**. The **IS-ya-la ~ 7a-IS-ya-la** spellings then point to a form such as **7ay-al**. As I point out in Chapter VI (section 6.7.4), such a form is analyzable as **EXIST-STA**, and is undoubtedly related functionally and semantically to the surviving form in Ch'orti', **7ay-an**.

In addition, if a reading **7AY** 'existential particle' is assumed, then certain grammatical contexts of the **IS** can be explained readily. For instance, the frequently text-initial but always clause-initial contexts of the **IS** in **CLM** texts is consonant with the pragmatic function of the existential predicator or particle in Mayan languages overall: as a new information marker. Larsen (1981), for example, has shown that in Awakatek (Greater Mamean) the existential predicator **7at** introduces new information, specifically new **S** and **O** arguments which it coreferences by means of absolutive agreement markers. Also, assuming this interpretation, the sentences in **figure 4.5** could be examples of predicative possession, a type of possession which one would expect in almost any Mayan language but which would otherwise be unattested in the Classic texts. Indeed, the examples in **figures 4.5a,b** could be cases of the schema in (7.1), while the example in **figure 4.5c** could be a case of schema (7.2) (Heine 1997:Table 2.1, 47):

(4.1) GENTIVE: X's Y exists

(4.2) GOAL: Y exists for/to X

Mayan languages exhibit both types, though the second type may be attested only Yukatekan (Itzaj) and Ch'olan (Chontal). Type (4.2) is illustrated by example (4.3) from

Itzaj (Hofling 1990:558),⁸⁷ while type (4.1) is illustrated with (4.4) from Itzaj, with ten in (4.3) analyzable diachronically as t-en or PREP-1sABS (Hofling 1990:558)⁸⁸:

(4.3) Yan ten ka'=tuul paal
 EXIST 1sIO two=ANIM child
 'I have two children'.

(4.4) Yan ka'=tuul im-paal
 EXIST two=ANIM 1sPOSS-child
 'I have two children'.

While in modern Yukatekan these constructions may no longer be analyzable as type (4.2) constructions, they probably were originally, but became reanalyzed.

4.2.2. GOD.N Dedicatory Verb. Although there are four glyphs whose iconic referent is God N, these are different in form and function, although in certain traits they grade into one another. Three of the GOD.N glyphs have logographic readings as nouns (**figure 4.6**): **PAWATUN** 'God N', **HO7** 'five', and **MAM** 'grandfather, grandson, nephew, ancestor'. The fourth GOD.N glyph has a verbal function whose exact reading has not been determined to everyone's satisfaction. The reading **HUY/HOY** 'to bless' (MacLeod 1990) has been proposed with supporting evidence from phonetic complementation patterns, and the reading **T'AB'** 'to anoint' has been suggested by Elizabeth Wagner and David Stuart (Schele and Grube 1995:197) based on more scanty evidence, as I point out below. For this paper the exact reading is not crucial, although

⁸⁷ Hofling (2000:286-287) provides further examples and discussion of these existential constructions.

⁸⁸ Chontal may have a construction similar to that of Itzaj. Knowles (1984:202) provides the following suggestive, the second one using an indirect object pronoun similar in form to those in Itzaj:

- (a) chitam-lop' ta 7ah+yan
 pig-3PL PREP PRO+John
 'The pigs which belong to John'.
- (b) 7um=p'e 7asunto ya7an-Ø t(-)a7a
 one=CL business EXT-3sABS PREP(-)2s?
 'You have one business'.

here I review the evidence and suggest a likely reading. The only point that matters in this paper is that the GOD.N glyph has a verbal function in dedicatory texts. The following are the attributes of the three GOD.N glyphs.

The GOD.N glyph read **PAWATUN** is characterized by the following traits (**figures 4.6a,b**): (1) an obligatory netted hat, (2) an optional earflare (with T585 **b'i** or T281 **K'AN** infix), (3) an optional beard, (4) and a **NETTED.TURTLE.CARAPACE** sign with an optional T281 **K'AN** infix as a substitute.

The glyph read **HO7** 'five' is characterized by the following traits (**figure 4.6c**): (1) the head of the old God N, (2) a T548 **DRUM** sign as a headdress, and (3) an earflare.

The glyph read **MAM** is characterized by the following traits (**figures 4.6d,e**): (1) the head of the old God N, (2) a long tuft of hair, (3) an optional earflare, (4) an optional cartouche on the forehead with a circle inside, (5) a wrinkled face, and (6) a **BIRD.HEAD** variant recognizable by its long beak, a tuft of hair identical to that of the anthropomorphic variant, and an optional cartouche on the forehead with a circle inside. The **PAWATUN** glyph does not take any of the diagnostic attributes of the **MAM** glyph, including the tuft of hair or the cartouche with a circle inside. It does not have a **BIRD.HEAD** variant either.

And lastly, the verbal GOD.N glyph is more complex in its attributes, some of which appear to grade into those of the **MAM** and **PAWATUN** glyphs. The only attributes that can serve to distinguish the verbal GOD.N glyph from the other two are the following (**figure 4.7**): (1) an optional fish-like face (**figure 4.7c**), (2) optional shark's tooth (**figure 4.7a**), and (3) optional fish barbels (**figures 4.7a,b**). Like the **PAWATUN** version, it can exhibit the following: (4) a netted hat (**figures 4.7a-f**), and (5) a beard (**figures 4.7a,b,e,f**). Like the **MAM** version, it can exhibit the following attributes: (6) a tuft of hair (**figures 4.7a,b,c,g,h,i**), (7) a wrinkled face (**figures 4.7g,h**), and (8) an optional cartouche on the forehead with a circle inside (**figure 4.7i**). Like either of the other two, this version regularly, but not always, exhibits (9) an earflare (**figures**

4.7a,b,c,d,g,h,i). Also, the verbal GOD.N glyph can appear with (10) a bird's head on its hat (**figures 4.7b,d**). Unlike the PAWATUN version, the verbal GOD.N cannot be substituted by a NETTED.TURTLE.CARAPACE sign, and unlike the MAM version, the verbal GOD.N cannot be substituted by a BIRD.HEAD sign with long beak and a tuft of hair.

The GOD.N verb exhibits the following spelling and affixational variation (some of these patterns apply to the STEP verb too): (1) GOD.N (K2085, K2292, K4143, K5605, K6997) (**figure 4.9c**); (2) hu-GOD.N (K518, K4945); (3) GOD.N-li (Yaxchilan Lintel 24:H1 (**figure 4.12c**); (4) GOD.N[yi] (K518, K1892, K3230); (5) GOD.N-yi (K1398, K1698, K764) (**figures 4.9a,b**); (6) hu-GOD.N (K518); (7) hu-GOD.N[yi] (K1837) (**figures 4.8a,b**); (8) hu-GOD.N-yi (K927); (9) hu-GOD.N[yi]-yi (K1775) (**figures 4.9c,d**); (10) 7u-GOD.N (**figure 4.9k, figure 4.10b**); and (11) 7u-GOD.N-yi (**figures 4.9h-j**). In addition, in some pottery texts, the GOD.N verb may be replaced by the phonetic sequences 7u-yi, as on K4357 and K4551, and hu-yi as on the Hondo jar (Kurbjuhn 1989:152), suggesting the readings 7uy(-i) and huy(-i).

Given the 7u-GOD.N, 7u-GOD.N-yi, and 7u-yi spellings, a logographic reading 7UY seems likely. Given the hu-GOD.N, hu-GOD.N[yi], hu-GOD.N[yi]-yi, and hu-yi spellings, an alternative reading HUY also seems likely. This root-initial 7/h alternation may be dialectal or interlinguistic in motivation; for example, the proto-Ch'olan root *hul 'to arrive (here)' was *7u7ul in proto-Yukatekan, even though both descend from proto-Mayan *hul. For an 7UY reading, a possible lexical identification could be *7u7y 'to hear', perhaps in reference to the official dedicatory reading of an inscription, which might explain the fact that the GOD.N verb is often the first verb in a dedicatory text. This does not explain the 7UY reading, however. Before I provide a possible interpretation I must review the evidence for the T'AB' reading.

The reading T'AB' is based on two lines of circumstantial evidence (**figure 4.11**). First, since the STEP sign shows a footprint climbing up a staircase (**figure 4.11c**), a

reading **T'AB'** is possible, based on proto-Ch'olan *t'äb' 'to rise, to go up' (Stuart 1995, 1997). And second, the assumed identity of the values of T843 STEP and T1016 GOD.N, based on what at first appears to be a distribution characterizable as free variation, would suggest the same reading for both signs: **T'AB'**. Now, since these glyphic verbs most likely represent passive inflections of a transitive root, t'äb' 'to rise, to go up' cannot be the root represented, or else a transitivizing suffix (e.g., -t, -es) would be necessary, but none is present. More likely, STEP serves as a rebus for a near homophone corresponding to a transitive root, and consequently, so would the GOD.N.

To date, this reading for either T843 and T1016 lacks support of the strongest kind: a spelling such as **t'a-T843/1016-b'a(-yi)** in free substitution with **t'a-b'a-yi**. The only potential support comes indirectly from signs that are as of yet still undeciphered or unspecifiable and restricted to these contexts only. The first is a text from Chichen Itza that shows a dedicatory verb spelled **?-b'a** (figure 4.10b). The second is a text from Ikil that shows a dedicatory verb spelled **?-b'a-yi** (figure 4.10a). Thus, the signs thought by Stuart and Grube to be possible cases of a **t'a** syllabograph, which is otherwise unattested or undeciphered to date, are not as crystal clear as one would like. In fact, in the first case (**?-b'a**) the unread sign resembles T66, which in the Dresden Codex appears to represent **hi** in the spelling **hi-na** for *hina7 'seed', while in the second case (**?-b'a-yi**), the unread sign resembles T278, which has the phonetic reading **sa**. The former sign is thought to read **t'a** in the Chichen Itza text again based on iconic grounds; according to MacLeod (personal communication 2001) the sign resembles rising smoke, and may therefore be indexical of the word t'äb' 'to rise (smoke)' or of Itzaj t'äb' 'to light' (Hofling and Tesucún 1997:616), which could have served as the basis for the acrophonic derivation of its hypothetical reading **t'a**. The latter sign, if **sa**, would provide a reading **sa-b'a-yi** for the Ikil glyph; such a synharmonic spelling is expected for intransitives or intransitivized verbs taking -V₁y suffixes. Thus, where on orthographic grounds one would expect a **Ca-b'a-yi** glyph, T278 **sa**, which closely resembles the first sign of the glyph in question at

Ikil, more than fits the bill.

Thus, I find the evidence for a **t'a** reading of either of the two signs just reviewed unconvincing, and even doubtful, given the closer resemblance that each one shows with the already-read signs **hi** and **sa**. Given the absence of any possible cases of **t'a-STEP/GOD.N-b'a-yi** spellings, the reading becomes less plausible. And given the fact already established that T843 and T1016 may in fact co-occur (MacLeod 1990), there may be no identity relationship between the two signs on which to establish a reading **T'AB'** for GOD.N. Finally, given the securely established cases of **7u-GOD.N(-yi)** and **hu-GOD.N(-yi)**, its apparent free variation relationship with the sequence **7u-yi**, the fact that T46 functions clearly as **hu** in the glyph **hu-li** for **hul-i* 's/he/it arrived (here)' and **hu-STEP** in the same text, I think that GOD.N clearly had a logographic value with the phonological reading **7UY/HUY**, even if its semantic value is still not secure.

My guess is that, given the colonial ritual of dedicating and rededicating books by anointing them with virgin water, termed suhuy, a likely interpretation of **7UY/HUY** might be related to this word and this ritual of anointing with virgin water. It may be related to the term huy of modern Yukatek (Bricker, Po7ot Yah, Dzul de Po7ot 1998:117), for which the following derivations are given: huyb'al (av) 'become powdery', huyb'ankúuns (caus) 'grind fine; wash hair', huyb'ankúunt (caus) 'grind fine: wash hair', and huhuykil (aj) 'soft, smooth'. Key in these entries are the associations with washing, grinding, and smoothness, which could be the ways of treating an object/structure and the end result: in the first case, by cleansing with water (e.g., virgin water), and in the second case, by grinding until the surface is smooth.

The term suhuy has the following entries in modern Yukatek (Bricker, Po7ot Yah, Dzul de Po7ot 1998:250): suhuy (aj) 'intact, virgin', suhú7uy (aj) 'intact, virgin', sùuhuy (n1) 'frontal bone', and sùuy (n1) 'frontal bone'. Unfortunately, the etymology of suhuy is not clear, and its derived forms suggest a stem with two morphemes or more, either su(C)-huy or sub-(C)uy. In modern Itzaj juy means 'watery', apparently related to joy

‘watery’ (Hofling and Tesucún 1997:321, 330), which is used verbally only with the incorporated object ja ‘water’ as joy=ja ~ joy=jaa ‘sprinkle water (with palm up)’. This Itzaj term juy ~ joy, would explain MacLeod’s (1990) observed variation between **HOY** and **HUY** logographic readings. If Yukatek once had such a clear relationship between cognate terms, one of them perhaps huy mentioned above, the possible second term could be hoy, a root transitive verb meaning ‘dilute, dissolve; prepare /coffee/’; in fact, a term possibly cognate with Itzaj’s joy=ja may be attested in Yukatek as hóoy-a7t ‘irrigate’ and hóoy-há7at ‘spray’ (Bricker, Po7ot Yah, Dzul de Po7ot 1998:112). This Yukatek term hoy ‘dilute, dissolve’, which also has the derived form x+hoy-ob ‘stirring rod’ could also be related to the term húuy (probably N) with the following entries: húuy (ap) ‘stir, agitate’, húuyt (tv) ‘stir’, and x+húuy-ub (instr) ‘stirrer’ (Bricker, Po7ot Yah, Dzul de Po7ot 1998:117). In proto-Ch’olan, in fact, the term *juy is a root transitive meaning ‘stir’, descended from proto-Mayan *juy (Kaufman and Norman 1984:122). As if intended as a semantic determiner, a few examples of the GOD.N verb are shown with a stick in his hat, which could be a reference to a stirrer or stirring rod, and therefore, to the term húuy or hoy.

Finally, the **7u-GOD.N** ~ **hu-GOD.N** alternations, which seem to be cases of free substitution, can be explained as likely inter-dialectal or inter-linguistic variation. There are no examples, to my knowledge, of **7u-STEP**. Thus, GOD.N varied as either **hu-GOD.N** or **7u-GOD.N**, while STEP consistently takes **hu** only, if anything, as a phonetic complement. For this paper all that matters is that the action that this verb entails must be general enough to account for its use in reference to the dedication of buildings, benches, ceramic pots, jade objects, clothing, etc.

4.2.3. SPOTTED.BAT.HEAD Glyph. The SPOTTED.BAT.HEAD glyph may have been a logograph for CARVING/INCISING/WRITING. The SPOTTED.BAT.HEAD sign has two deciphered readings in Classic Mayan texts: a phonetic reading **ts’i** and **SUTS’** for proto-Ch’olan *suts ‘bat’ (Stuart 1987). However,

it also occurs frequently in scribal titles (e.g., **7AJ+7u-SPOTTED.BAT.HEAD-lu** and **b'a-7u-SPOTTED.BAT.HEAD-lu**) and in the name of some form of artistic treatment on incised pots and carved monuments. I, following other epigraphers, think that this last context is indicative of a reading for SPOTTED.BAT.HEAD different from its other two readings. In the past the phonetic reading **xu** has been proposed. However, this is not likely the reading this sign has in the incising/carving/polishing context.

For example, the following three spellings are attested at Xcalumkin: **yu-SPOTTED.BAT.HEAD-lu-li** (Column 1), **yu-SPOTTED.BAT.HEAD-lu** (Lintel 1:L), **yu-SPOTTED.BAT.HEAD-li** (Panel 3:A1) (**figure 4.12b**), and **7u-SPOTTED.BAT.HEAD-li** (Panel 5:B2) (**figure 4.12a**). The first example is preceded by the verb **k'a-la-ja** for k'a[h]l-aj-Ø-Ø(+a7) wrap[(M)PASS]-(M)PASS-CMP-3sABS(+ENCL) 'it was/got wrapped', and followed by a series of names and titles referring to the person who owns the object referred to as **yu-SPOTTED.BAT.HEAD-lu-li**. Since the verb is passive, and the name of the owner of the subject of the verb is not preceded by a prepositional or relational noun construction, the only explanation for its function is as the possessor of the verb's subject: thus, the y of phonetic **yu** in **yu-SPOTTED.BAT.HEAD-lu-li** is very likely spelling the prevocalic allomorph of the third person ergative prefix, y-. This is confirmed by the example from Panel 5 where the SPOTTED.BAT.HEAD glyph is simply preceded by **7u-**, rather than **yu-**, suggesting the root or word denoted by this glyphic collocation begins with 7u. The fact that this **7u-SPOTTED.BAT.HEAD-li** spelling is the unpossessed form is strongly suggested by the fact that this glyph is text-final, and therefore no possessor follows it.

Lastly, as I mentioned above, the SPOTTED.BAT.HEAD glyph occurs in scribal titles as **7AJ-7u-SPOTTED.BAT.HEAD-lu** (**figures 4.12a,b**). This supports, of course, the proposal that the root spelled begins with 7u. On Xcalumkin Column 2:A6, this same title appears as **7AJ-SPOTTED.BAT.HEAD-la** (**figure 4.13c**), supporting the proposal that SPOTTED.BAT.HEAD is in fact logographic. Additional support is found in two

spellings where the glyph is used verbally (**figures 4.12d,e**). In the first, one reads:

YUWAL-7u-SPOTTED.BAT.HEAD-lu-yi. This context for **7u-**

SPOTTED.BAT.HEAD-lu-yi (following T679 **YUWAL** and with a suffix spelled partly with **yi**) is characteristic of root and derived intransitive verbs, strongly suggesting T1 **7u** is not a third person ergative prefix but a phonetic complement to a logographic, or part of a phonetic spelling of a verb root and not of an ergative prefix. In the second case one finds: **7u-SPOTTED.BAT.HEAD-lu-ja/AJ**. This context (with T181 **ja/AJ** spelling a verbal suffix) is also characteristic of root and derived intransitives, suggesting T1 **7u** is a phonetic complement or part of a phonetic spelling of a verb root, but not an ergative prefix.

What does the root/word end in? Again, the spellings already discussed offer the key. At Xcalumkin, in the spelling **yu-SPOTTED.BAT.HEAD-lu-li**, a **lu** sign is postposed to the **SPOTTED.BAT.HEAD** sign; it is followed by phonetic **li**, which is probably spelling the possessive suffix **-il**. In the spelling **yu-SPOTTED.BAT.HEAD-li** no **lu** sign is present, suggesting that it is optional, and consequently, that when phonetic **lu** is present it spells a phonetic complement. The fact that in the Column 2 example above one finds **la** instead of **lu** suggests that the **l** is in fact the only important part of this phonetic sign, and therefore, that it functions as a phonetic complement. If it is a phonetic complement, then a logographic reading **7U(CV)(G)L** for **SPOTTED.BAT.HEAD** is likely. The fact that the sign functions as an isolated constituent in the DO pectoral, as I explain below, suggests that it is in fact logographic. Based on the Classic period uses of this sign in the scribal signature and dedicatory text contexts, it seems likely that it means ‘carving/incising/writing/polishing’, that is, some form of artistic treatment of a hard surface.

Several epigraphers have supposed, based on the hypothesis that the sign is phonetic **xu** in this context, that the resulting spellings **7u-xu-li**, **yu-xu-li**, **yu-xu-lu-li** are related to the root ***hux** ‘whetstone’. It is possible that instead the spellings above are for

(7u-)7U(XU)L(-li), y(u)-7U(XU)L-li, and y(u)-7U(XU)L(-lu)-li, respectively.

Unfortunately, whether the sign is read **xu** or **7U(XU)L**, the ***hux** hypothesis, though semantically appropriate, would require that the dialects involved had a variant ***7ux** of ***hux**, which to my knowledge is not attested in the descendant languages. Although Yukatekan had ***7ú7ul** < proto-Mayan ***hul**, showing a **7/h** correspondence that is attested in other roots, it had ***hù:x** < proto-Mayan ***hu7x** ‘whetstone’, while proto-Ch’olan had ***hux**. More research is needed to determine the precise reading of SPOTTED.BAT.HEAD.

4.3. The Structure of the Dedicatory Formula.

4.3.1. Goals. I intend to achieve the following goals: (1) to use a database of transcriptions and transliterations of 240 Primary Standard Sequence (PSS) texts for coindexing signs, sign compounds, and their syntactic contexts; (2) to apply a structural analysis to the body of data in order to discover possible constituent structure types (i.e., sequences of signs and sign compounds that can function in isolation from others); (3) to apply a structural analysis to the data in order to discover equivalent signs and sign sequences (i.e., sequences of signs and sign compounds that can appear in the same context); (4) to attempt to account for the structural analysis in terms of a linguistic and epigraphic framework; and (5) to provide new sign readings and interpretations for glyphic expressions whenever necessary and possible.

4.3.2. Methods. I focus on the **(y-)uk’/uch’-ib’** ‘(his/her) drinking cup’ glyph (figures 4.14 and 4.15), variously spelled as **yu-T77-b’i**, **yu-T77-b’a**, **7u-T77-b’i**, **7u-T77-b’a**, **yu-T128-b’a**, **yu-T128-b’a-b’i**, or **7u-T128-b’a**, for two reasons: (1) its unambiguous character as a nominal stem of the form (3sERG-)drink-INSTRUMENTAL, given that instrumental nouns cannot undergo additional derivations; and (2) it is the most common nominal expression attested in dedicatory texts on portable objects. Because **(y-)uk’/uch’-ib’** ‘drinking cup’ is an instrumental noun, and because instrumental nouns cannot serve as the basis for the derivation of other types of nouns, verbs, or adjectives, I

avoid potential ambiguities arising from the possibility of diverse interpretations of certain glyphs as either nominal or verbal (e.g., **7u-tz'i-b'a** has been interpreted in the past as either 7u-tz'ihb 'her/his writing' or 7u-tz'ihb'-a(-Ø) 's/he writes/wrote (it)'). This unambiguous syntactic nature makes it an ideal point of departure for any morphosyntactic study. And second, I do not use other glyphs that can appear in the same structural position as 'drinking cup' (e.g., **(7u-)la-k(a)** for 7u-làak '(his/her) dish'), because they are not nearly as frequent and contextually diverse as the 'drinking cup' glyph.

Also, I describe and analyze the morphosyntactic patterns of clauses containing the 'drinking cup' glyph in an incremental manner, starting from the less complex and proceeding to the more and more complex patterns. In this fashion, I attempt to determine possible constituent phrases, as well as the ways in which separate constituent phrases may be juxtaposed to, or combined with, others.

I carry out the last step with the aid of a database of PSS texts I compiled during the Fall of 1998-Spring 1999. The database contains hieroglyphic transcriptions and transliterations of PSS texts found in Kerr (1989-1997) and Robicsek and Hales (1981). The database can be used for the following purposes: (1) to list all occurrences of specific searchable units, such as individual segments, signs, collocations, phrases, and clauses; and (2) to examine all affixational and syntactic contexts within the sample database for every searchable unit of interest. It is thus possible to search for all occurrences of the sign T563 **tz'i**, for all occurrences of the sequence **tz'i-b'** (which would call up cases of both T563:585 **tz'i-b'i** and T563:501 **tz'i-b'a**), or more narrowly, for all occurrences of **tz'i-b'i** or **tz'i-b'a**, **7u-tz'i-b'i** or **7u-tz'i-b'a**, et cetera. In this way one can determine whether there are any contextual differences between the two spellings. The following are two examples of the types of transliterations that make up the database⁸⁹:

⁸⁹ Identifiable signs were transliterated with the corresponding readings, unidentifiable signs were transliterated with double question marks (i.e., ??), signs whose values and/or readings are still debated are shown with Thompson numbers (e.g., T77),

(4.5) K 1355
7a-IS-ya tz'i-b'i na-ja hi-ch yu-T77-b'i

(4.6) K 3366
7a-IS-ya tz'i-b'i na-ja hi-chV hi-chi yu-T77-b'i
ta-yu-ta-la ka-wa

For the most part, only complete texts with readily identifiable glyphs have been included, with few exceptions. Each entry can potentially have the following information: (1) Entry Number (if vase is not cataloged), (2) Kerr Number (K-Number), (3) Cross-listings (in other catalogs besides Kerr's, such as BOD for the corpus in Robicsek and Hales (1981), or MScribe for the corpus in Coe (1973)), (4) Transliteration, and (5) Type of Artifact (Kerr's abbreviations are used: e.g., PY = polychrome, CX = codex-style). The following is a sample entry (entries are sorted by the Kerr Number, in this case K 578), where the double bars, ||, indicate that the preceding glyphic collocations are graphically isolated from what follows as though comprising a separate clause:

(4.7) K 578 MS 1392
7a-IS-ya GOD.N-yi 7u-tz'i-b'a-li-wa ||
7u-tz'i-b'a yu-T77-b'i ta-tzi-hi-li-wa
PY

A much more detailed description of how to use the database to cross-index expressions is not permissible here. I explain important details pertaining to four of the glyphic compounds commonly present on PSS texts on vases: (y)u-T77/128[501]-

phonetic signs whose consonantal reading is certain (to some reasonable extent) but whose reading value is not are represented with a capital V standing for the undetermined vowel (e.g., kV), alternative readings for a single sign were separated with single slashes to separate phonetic from logographic readings or double slashes to separate alternative logographic readings (e.g., ku/TUN//HAB'//KAWAK for T528), logographic signs are shown in capital letters, syllabographic signs in minuscules, and signs within a glyph block or belonging to the same phrase or word are separated by hyphens (e.g., ti-yu-ta-la). Separate glyph blocks or collocations were separated by a space (e.g., 7a-IS-ya GOD.N-yi yu-T77-b'i).

b'(i)/b'((a)-l(a)), (7u-)tz'i-b'(i)/b'((a)-l(i))(+wa), (7u-)na-ja(-l(a)/y(a)), and (yi-)(h)i-chi(-l(i)).

4.3.3. The ‘Drinking Cup’ Glyph. The following remarks are based on a total of 167 examples of the ‘drinking cup’ glyph, 163 of them spelled with T77 and the remaining 4 using T128. **Table 4.1** shows its spelling and affixational pattern based on T77, and **Table 4.2** shows the patterns for the same expression based on T128. One way to capture these patterns in a single statement is as **(y)u-T77/128([501])-b'(i)/b'(a)-l(a)**, where the first component sign may be T61 **yu** or T1 **7u**, followed by either T77 or T128[501], followed by either **b'i** or **b'a**, or **b'i-b'a**, or **b'i-la**. Regardless of the values of T77 and T128([501]), I assume that the noun stem is based on the root for ‘to drink’, **7uch'** in Ch'olan and **7uk'** in Yukatekan, an assumption supported by two observations previously made by other epigraphers: (1) T62 **yu** seems to spell both a prevocalic 3sERG prefix and the vowel of the root (Houston, Stuart, and Taube 1989; MacLeod 1990; Stuart 1989); and (2) the presence of T1 **7u** instead of T62 **yu** in some cases (e.g., K703, K1183, K1186, K2323, K4379, and K6997), noted by Grube (1991), shows that the beginning two segments of the root to be **/7u/**.

4.3.4. Constituent Structures and Their Functions. In this section I use the following conventions for describing the morphosyntactic structure of clauses: { } delimit clauses, [] delimit phrases, and () delimit optional constituents.

4.3.4.1. Structure Type 1: {[7u-T128-b'a]PRED}CLAUSE. This type may be attested on K1339 (**figure 4.16a**), published in Robicsek and Hales (1981:170, Vessel 140). The expression **7u-T128-b'a** occurs in seeming isolation, as a clause: (drink-INSTR)-3sABS for **7uch'/7uk'-Vb'-∅** ‘it is a cup’. It is not uncommon for inscribed artifacts to bear a label that names the artifact without referring to it as a possessed object, as already noted in Chapter 5 for jade plaques that may carry T503 **7IK'(NAL)** as a label. Such isolated labels may constitute the simplest form of PSS formula.

4.3.4.2. Structure Type 2: {[yu-T77-b'i]POSS}PRED}CLAUSE. Vase K5466

(figure 4.16b) is the closest example to this possible structure type. It shows: **7u-ja-yi + yu-T77-b'i** (I use a <+> sign to separate glyph blocks). The reasons why I believe this example is not significantly different from a case where **yu-T77-b'i** might be found in isolation are the following.

First, as Grube (1990) has explained, **ja-yi** serves as the most common or the most frequently recurring name for the Chocoma-style vases, although other types of vases that are not carved may have it. Also, even though **jay* is an adjective ('thin') in proto-Ch'olan (Kaufman and Norman, 1984:121) and in modern Yukatek at least (Bricker, Po7ot Yah, and Dzul de Po7ot 1998:99), the description by Bricker, Po7ot Yah, and Dzul de Po7ot (1998:366-367) of a type of nominalization of adjectives based on a -Ø derivational suffix makes it possible to interpret **7u-ja-yi** as 'his/her thin one', underlyingly 7u-jay-Ø 3sERG-thin-NOMLZR. The following are examples of nouns derived from adjectives in Yukatek through suffixation of -il and vowel lengthening (when adjective is unpossessed) or -Ø (when adjective is possessed): 7al 'heavy', 7aal-il (heavy-NOMINALIZER) 'weight', uy-al-Ø (3sERG-heavy-NOMINALIZER) 'the heavy one'.

And last, as Grube also points out, and this is I think strong evidence by itself, a pot from Uaxactun is described (by means of the phrase **7u-K'AB'A7** 'is the name of') as a **NAL + ja-yi** (figure 4.16d), as follows:

(4.8) **NAL ja-yi 7u-K'UHUL-K'AB'A7 yu-T77-b'i**
 nal/nahal jay-Ø 7u-k'uhul-k'aab'aa7
 ?earned thin.one 3sERG-divine-name
 y-uk'/uch'-ib'
 3sERG-drink-INSTR

'The divine name of his/her cup is Na(ha)l Thin One'.

Here, **NAL** may spell nah-al 'earned', perhaps as a modifier to **ja-yi jay** 'thin (one)'.

Thus, the clause **NAL + ja-yi + 7u-DIVINE-K'AB'A7 + yu-T77-b'i** constitutes a

nonverbal clause, interpretable, with **NAL + ja-yi** functioning as the predicate of the clause, and the noun **K'AB'A7** 'name' functioning as the head of the subject noun phrase of the clause. In any case, because **NAL + ja-yi** is the name of the cup, one has to conclude that it functions as a noun phrase.

It is possible that the text on K5466 constitutes a couplet, each noun describing the vase in a different way: 'It is his thin one, it is his cup'. Because the structure of the whole text is basically a reduplication of the basic constituent 3sERG-noun, I regard as likely that texts consisting of just 3sERG-noun are indeed waiting to be described.

4.3.4.3. Type 3: {{{[yu-T77-b'i]POSS + [POSSESSOR]}}}PRED. Vase K 4332 (**figure 4.16c**) is an example of this structure type. Stuart (1989: 150) regarded this type of structure as the most basic type. This is the prototypical proprietary statement. Even though a type 2 structure would indicate ownership of the artifact in question, type 3 names the owner. Thus, type 3 is a constituent that is made up of two separate, smaller constituents, one of which consists of an idealized type 2 structure. It can be read as 'it is the cup of So-and-So', or as {[POSSESSED] + [POSSESSOR]} PREDICATE.

4.3.4.4. Type 4: {[NP]PRED + [[7u-DIVINE-K'AB'A7] + [[yu-T77-b'i]POSS (+ [POSSESSOR])]}]SUBJ}. This type of structure has been described by various epigraphers before. It not only occurs on inscribed objects, but it is a common structure type used to relate two historical or supernatural personages with one another in the monumental texts. It is attested on the Uaxactun vase described above (**figure 4.16d**), and on another Early Classic vase described by Grube and Schele (1990:136). Both examples have the **yu-T77-b'i** glyph as the subject of the nonverbal clauses with the structure [NP]PREDICATE + [[NP]POSS + [POSSESSOR]]SUBJECT.

4.3.4.5. Type 5: {{{[TYPE 2]POSS + [(+ ti) [(+ MODIFIER) [CONTENTS]]]}]} PRED}. This type has been described by various epigraphers, foremost of all Stuart (1988, 1989), Grube (1986), and MacLeod (1990). This is an important context for epigraphic decipherment, since it provides a controlled environment for

setting up hypotheses about the function and meaning of affixes and glyphic collocations. MacLeod was perhaps the first epigrapher to notice that the contents of the vase may be mentioned without a preceding modifier or without a preceding modifier and preposition. An example of a type 5 structure is present on K1182 (Robicsek and Hales 1983:20, Vessel 15), as well as on K1344 and K1371 (Robicsek and Hales 1983:98-99, Vessels 125 and 128) (**figure 4.17**).

4.3.4.6. Type 6: {{{[TYPE 5]POSS + [POSSESSOR]]PRED}}

This type has also been well documented before by other epigraphers. A pair of examples is shown in **figure 4.18**.

4.3.4.7. Type 7: {{{[IS] + [GOD.N]]PRED + [TYPE 1/2/(3/5)/6]SUBJ}CLAUSE.

This type (**figure 4.19**) is attested as a type 1/2/6 structure following at least one of several possible verbs and the Initial Sign (IS). It is the type Stuart (1989) regarded as the third basic type of PSS structure. In general, whenever one of these verbs appears in the PSS of pottery vases, the IS is always present. However, the Initial Sign can be present in clauses lacking verbs, and I believe usually introduces the predicate of a verbal or nonverbal clause when such predicate constitutes new information.⁹⁰

Vase K5605 is an example of an IS + GOD.N + Type 2 structure. Vase K2085 is an example of an IS + GOD.N + Type 6 structure. Vases K1560, K1698, K4464, K4619, and K4996 also attest to this pattern. Lastly, vase K6997 may be an example of an IS + GOD.N + Type 1, but I prefer to discuss it below as a component of an even larger structure type (Type 8).

4.3.4.8. Type 8: {{{[IS] + [GOD.N]]PRED-1 + [TYPE 1]SUBJ}CLAUSE-1 + {{{[TYPE 3]PRED-2}CLAUSE-2. This type is composed of a subtype of type 7 and a following type 3. A clear attestation is K6997 (**figure 4.20a**), where the following appears:

⁹⁰ I have not found examples where types 3 and 5 follow the IS + GOD.N/STEP/other sequence, but I have placed them within parentheses because I regard them as possible constituents in and of themselves and for that reason they could be used as the subjects of the preceding verb, just like the types 1/2/6 are used.

(4.9) 7a-IS + GOD.N + 7u-T77-b'a + yu-T77-b'i +
 ch'o-ko + b'a-ka-b'a

Clearly, this is a juxtaposition of two types: 7 + 3. Interestingly, the first type ends in an unpossessed 'drinking cup' glyph with **b'a** rather than **b'i** as suffix. The second type begins with the possessed 'his/her drinking cup' glyph. Assuming GOD.N is passive verb, **7u-T77-b'a** would have to be its subject. Following **7u-T77-b'a** is a whole other constituent, which could be its own clause as 'it is the drinking cup of Ch'ok B'akab'. The following is a plausible analysis:

(4.10) {[7a-IS + GOD.N]PRED-1 + [7u-T77-b'a]SUBJ-1}CLAUSE-1 +
 {[yu-T77-b'i + ch'o-ko + b'a-ka-b'a]PRED-2}CLAUSE-2

4.3.4.9. Type 9: {[[IS] + [GOD.N]]PRED-1 + [TYPE 1]SUBJ}CLAUSE-1 + {[na-ja(-la)]PRED-2 + [TYPE 3]SUBJ}CLAUSE-2

This type is an elaboration of a type 7 structure in which an additional element is inserted between the types 7 and 3 structures. Because type 7 ends in an unambiguous noun stem from which a verb could not be derived, and because in this particular subtype that noun is unpossessed, what follows the unpossessed noun, namely, **na-ja-la**, is not likely to be part of the type 7 structure (in keeping with the VS word order, where **7u-T77-b'i** is the S). Instead, it probably is the first component of a following structure. Because predicates are clause-initial, the **na-ja-la** glyph would likely function as the predicate of the subject expressed by the type 3 structure that follows. In a sense, this type could also be described as a Type 7 + Type 7 structure, the only difference being that the second type 7 lacks the Initial Sign. It could also be described as Type 7 + [Verb + Type 3]T7, where T7 stands for "Type 7." The absence of the Initial Sign is not problematic: it usually occurs just once within a PSS text (with few exceptions).

Vase K4379 illustrates this type. It can be transliterated as follows (figure 4.20b):

(4.11) 7a-IS-ya + GOD.N-yi + 7u-T77-b'i + na-ja-la +
 yu-T77-b'i + ta-yu-ta + NAL + TE7-le + ka-wa +

**CHAK-ch'o-ko + HAND-MONKEY + MUYAL(-ya-la) +
 ?-?-?-?**

Based on my analysis of its composition, it could be schematically shown as follows:

(4.12) {[[7a-IS-ya + GOD.N-yi]PRED-1 +
 [7u-T77-b'i]SUBJ-1]TYPE7/CLAUSE-1 +
 [[na-ja-la]PRED-2 +
 [yu-k'i-b'i + ta-yu-ta + ... ?-?-?-?]}TYPE6/SUBJ-
 2]TYPE7/CLAUSE2}TYPE9

I would imagine that the following possible variations could be expressed: Type 7 + Predicate + Type 1/2/3/5/6. However, none of these is attested in my database of 240 examples: that is, none in which (y)u-T77/128-b'(i/a) serves as the noun that forms the basis of the formula.

4.3.4.10. Type 10: {[IS]PRED + [tz'i-b'i + na-ja + hi-chi]SUBJ}. As I recall, MacLeod (1990) was first to describe this type as a basic structure type. There are only a few examples in my database where its “constituencyhood” is confirmed by its occurrence in isolation or seeming isolation from any other glyphs. These are K5437, K1355, and K2285. The clearest case of an occurrence in isolation may be K5453 (**figure 4.21a**).⁹¹ As I explain in the following two structure types, the proposed

⁹¹ K1355 is interesting because it ends in the sign T61 **yu**. There are three possible explanations for the presence of the **yu** sign at the end of this example. First, it may have been used as a “filler,” as Coe and Kerr (1998:143) have suggested. Second, it may have been in anticipation of the sign that would have followed (i.e. **yu-T77-b'i**) had there been more space left in between the **hi-chi** glyph and the Initial Sign. And third, it could have been due to both of the above. There are other instances in the database (e.g. K1211, K1227) where the last collocation of a PSS dedicatory text was apparently left unfinished due to lack of space, suggesting that the scribe chose to fill it in with the beginning of what would have been the next full glyphic collocation, rather than leave an empty space. For instance, on K 1227 the following appears: **7a-IS-ya + tz'i-b'i + na-ja + hi-chi + yu-T77-b'i + ta-yu-ta + ka-wa + 7a**. The last sign, **7a**, may very well have been intended as the so-called ‘male proclitic’ that probably began the glyphic expression for the name of the owner of the vase, since the glyph for ‘cacao’ was commonly followed immediately by the name of the owner of the vase.

structural and semantic cohesion of this sequence (type 10) can be supported on other grounds, since they can make up clause-like constituent structures in longer texts.

4.3.4.11. Type 11: {[TYPE 10]CLAUSE/PRED + [TYPE (1/2/3/5/6)CLAUSE/SUBJ]}. Vases K771, K1227, K1647, K1899, K2152, K2226, K2773, K3229, K3433, K4644, and K5360 are examples where the last glyph of the type 10 structure is spelled **hi-chi** (figure 4.21b). Vases K2068, K2583, K2783, and K3684 are examples where the last glyph of the type 10 structure is spelled **hi-chV**, where the sign following **hi** is not securely read.⁹² Even though structurally types 1/2/3/5/6 should all be able to function equally in this type 11 structure, since they could all be thought of as a noun phrase whose head is the (y)u-T77/128-b'(i/a) glyph, only type 6 is attested in my database so far.

4.3.4.12. Type 12: {[TYPE 10]PRED-1}CLAUSE-1 + {[hi-chi]PRED-2 + [TYPE (1/2/3/5/6)SUBJ]CLAUSE-2}. This type is attested on K3366 and K1348 (figures 4.21c), the last one corresponding to BOD 135 (Robicsek and Hales 1983:164). Since type 10 is a structural unit, and so is type 5, the intervening **hi-chi** glyph is clearly an elaboration of a type 11 structure. Because the last glyphic expression of type 10 is **hi-chi**, it is not too likely that the sequence **hi-chi + hi-chi** is supposed to be part of a single constituent. (One could suppose that one is dealing with reduplication, but another explanation makes more sense). Instead, given the fact that Type 5 is a noun phrase that in other structure types could function as the subject of a predicate (e.g. types 7, 8, 9, which take the noun phrase headed by (y)u-T77/128-b'(i/a)), it is possible that **hi-chi**, which comes immediately before type 5, could be such a predicate. Based on the following

⁹² The presumed **chV** sign is indistinguishable from the Rain God glyph, read **CHAHUK** or **CHAK**. It is thought by some epigraphers to have a **chV** reading in the context discussed here, since it appears in free substitution word-finally with T671 **chi** in the **hi-chi** glyphic compound. I think it is worth pointing out that on the Tablet of the Temple of Inscriptions at Palenque, the same sign appears in substitution with the T671 **chi** sign word-initially, suggesting a **chi** reading. This is in the context of a verbal expression that appears after the T679 AND.THEN/WHEN conjunction. This verb is spelled out as T671:103 **chi-ki** at D2 and as RAIN.GOD-**ki** at C8 on the same tablet, also after T679.

transliteration (**figure 4.21c**),

(4.13) **7a-IS-ya + tz'i-b'i + na-ja + hi-chi +
 hi-chi + yu-T77-b'i + ti-yu-ta-la + ka-wa**

one can posit the following as a plausible analysis of its structure:

(4.14) **{[IS + tz'i-b'i + na-ja + hi-chi]TYPE10/PRED-1/CLAUSE-1 +
 [[hi-chi]PRED-2 + [yu-T77-b'i + ti-yu-ta-la + ka-
 wa]TYPE5/SUBJ-2]TYPE7/CLAUSE-2}TYPE12**

If **hi-chi** is a predicate in this case, then **hi-chi** + Type 5 would correspond to a type 7 structure, except for the absence of the Initial Sign at the beginning of a type 7 structure which, as already explained above, is usually needed only when the type 7 structure occurs at the very beginning of a text. Furthermore, if **hi-chi** is a predicate in the second clause, then there is no reason why the same glyph, **hi-chi**, in the first clause could not be a predicate as well. If so, the type 10 structure could constitute a case of the IS followed by three words functioning as predicates.

4.4. Conclusions and Summary of Structure Types. The following is a summary of the constituent structure types described above:

- (1) cup (K1339);
- (2) y-cup (K5466);
- (3) y-cup + possessor (K4332);
- (4) predicate.NP (+ **7u-DIVINE-NAME**) + TYPE 3 (Uaxactun);
- (5) TYPE 2 (+ **ti**) + [(+ modifier) contents.NP] (K1182);
- (6) TYPE 5 + possessor (K4991);
- (7) Initial.Sign(IS) + GOD.N/other + TYPE 1/2(/3/5)/6 (K2085);
- (8) IS + GOD.N/other + cup + TYPE 3 (K6997);
- (9) IS + GOD.N + cup + **na-ja(-la)** + TYPE (1/2/3/5)/6 (K4379);
- (10) IS + **tz'i-b'i + na-ja + hi-chi** (K2285);
- (11) TYPE 10 + TYPE (1/2/3/5)/6 (K1899); and

(12) TYPE 10 + **hi-chi** + TYPE 5 (K3366).

As already noted above, this list is not comprehensive, since it only takes into account complete texts from a database with a total of 240 PSS texts. There are probably several hundred other PSS texts, both on portable and monumental media, and this paper focuses only on those inscribed on drinking vessels. However, within the parameters that were set, and with the limited set of variables that were considered, this list may very well be close to comprehensive. The list also shows, within parentheses (e.g. TYPE (1/2/3/5/6) and TYPE 1/2(/3/5)6) what I predict are also possible structures waiting to be identified, if not for texts with the (y-)uk'uch'-ib' expression, then certainly for texts inscribed on other artifact types.

The above list says little about my interpretations regarding clause structure in terms of Mayan grammar. In the breakdown that follows I specify the structural categories which I have already proposed in the previous sections: clauses, phrases, predicates, subjects, and optional elements⁹³:

- (1) {[cup]PRED}CLAUSE;
- (2) {[y-cup]PRED}CLAUSE;
- (3) {[y₁-cup + POSS₁]PRED}CLAUSE;
- (4) {[NP]PRED + [(7u-DIVINE-NAME) + TYPE 3]SUBJ}CLAUSE;
- (5) {[TYPE 2 + [(+ ti) [(+ MOD) [CONT]NP]NP]PP]PRED}CLAUSE;
- (6) {[TYPE 5 + POSS]PRED}CLAUSE;
- (7) {[IS + GOD.N]PRED + [TYPE 1/2(/3/5)6]SUBJ}CLAUSE;
- (8) {[IS + GOD.N]PRED-1 + [cup]SUBJ-1}CLAUSE-1 +
[TYPE 3]PRED-2}CLAUSE-2;
- (9) {[IS + GOD.N]PRED-1 + [cup]SUBJ-1}CLAUSE-1 +

⁹³ {} = clause, [] = phrase, PRED = predicate, SUBJ = overt subject, POSS = possessor, MOD = modifier, CONT = contents, GOD.N = the GOD.N verb or another verb in its place, PP = prepositional phrase, NP = noun phrase, and optional elements are shown between parentheses.

- {[**na-ja(-la)**]PRED-2 + [TYPE (1/2/3/5/6)SUBJ]CLAUSE-2};
- (10) {[IS + **tz'i-b'i** + **na-ja** + **hi-chi**]PRED}CLAUSE;
- (11) {[TYPE 10]PRED + [TYPE (1/2/3/5/6)SUBJ]CLAUSE or
 {[TYPE 10]PRED-1}CLAUSE-1 +
 [TYPE (1/2/3/5/6)PRED-2}CLAUSE-2; and
- (12) {[TYPE 10]PRED-1}CLAUSE-1 +
 {[**hi-chi**]PRED-2 + [TYPE (1/2/3/5(6)SUBJ]CLAUSE-2.

Again, the category PREDICATE is defined, in the case of nominal and adjectival predicates, in terms of absolutive agreement: a type 1 clause is interpreted here as cup-3sABS, or 7uk'/7uch'-ib'-Ø drink-INSTRUMENTAL-3sABS 'it is a cup', for example. I believe some of the verbs are more restricted than others as far as their possible range of contexts. For instance, there does not seem to be any restrictions at all for the kind of objects or physical structures that can be GOD.Ned, so to speak, whereas the **hi-chi** glyph, which in the above presentation I argued can appear in a predicative function, seems to be much more restricted (i.e. only the container on which the text is painted can undergo the action represented by the possible verb represented by **hi-chi**).

CHAPTER V:

TEXTS ON JADE AND STONE PORTABLE OBJECTS

5.0. Overview. This chapter deals with the study of inscribed jade and stone objects, with a special focus on Early Classic jade belt and pectoral plaque pendants. I review prior research on the iconographic themes, grammatical structure, and content of inscribed jade plaques, and summarize some of the proposals for their social context and symbolism. I discuss the evidence for a few key hieroglyphic phrases, including T617, T712, and T841, for which I propose revised readings. This is relevant to the study of Late Preclassic portable texts, specially the ones I discuss in detail in Chapters VI and VII.

5.1. Goals. The main goals of this chapter are: (1) to describe the iconographic and hieroglyphic data on two closely related types of jade objects, namely jade belt and pectoral plaques; (2) to describe the art historical attributes of these plaques, with an emphasis on their uses and symbolic associations.

5.2. Methods. The ethnohistorical methods of relevance involve iconographic, epigraphic, and linguistic description and analysis. I begin with a review of prior scholarship on these objects, focusing on their iconography and texts. I then present new evidence and interpretations that may be of relevance for the study of Late Preclassic inscribed jade objects.

5.3. Brief Background to the Study of Jade Plaques. The study of incised and inscribed jade objects has a long history in Mesoamerican studies.⁹⁴ The Leyden Plate (**figure 5.1**), a jadeite belt plaque discovered in a mound in Bahia de Graciosa in the northern Guatemala coastal plain in 1864 (Leemans 1878), and with a Long Count date

⁹⁴ By jade I refer to jadeite proper, but also more generally to other green minerals used by prehispanic Mesoamericans, such as nephrite, diopside, albite, quartz, and others.

placing it in the year A.D. 320 (Morley and Morley 1939), was for a long time the earliest-dated Mayan inscription known to scholars. For this reason, and as dictated by the then prevailing notion of writing as an intrinsic marker of civilization, the Leyden Plate was used by scholars to define the beginning of the Classic period of Mayan civilization for some time.⁹⁵

At the same time, the discovery of a great number of jade plaques (see Chapter I) in a distinctive style over a broad area of Mesoamerica was instrumental in allowing scholars like Covarrubias (1946, 1957) and Coe (1965) to recognize the major attributes and the antiquity of the Olmec art style, and to propose one of the major theories for the cultural history of Mesoamerican civilization, the Mother Culture theory. Among other reasons, the significance of these artifacts lies in their relation to the origin and diffusion of writing, and in their potential usefulness in deciphering early Mayan writing, as discussed in Chapter I. With the last point in mind, the following sections summarize the iconographic, epigraphic, and archaeological evidence pertinent to understanding the symbolic significance and contexts of belt and pectoral plaque pendants.

5.4. The Corpus of Inscribed Mayan Jade Plaques. Including the Leyden Plate, the first of its kind to be discovered, there are at least 46 incised and inscribed Mayan jade plaques. Most are Early Classic (A.D. 200-600) in date, though at least three, the Dumbarton Oaks quartzite pectoral, the Jade Museum jadeite spoon, and the Unprovenanced jadeite clamshell effigy, are of Late Preclassic (400 B.C.-A.D. 200) age. With the exception of only five of these plaques (the Leyden Plate, the three Calakmul plaques, the Altun Ha plaque, and the Lake Güija plaque), most are unprovenanced, though in a few cases their reported discovery sites are known (e.g., the two purported Rio Azul plaques).⁹⁶ Also, most are fragmented and reworked, as a result of still unclear

⁹⁵ Holmes (1907) described the Tuxtla Statuette, a jade statuette with an even earlier date of A.D. 164 which was for a long time thought to be Mayan but is now known to be Epi-Olmec (Justeson and Kaufman 1993; Méluzin 1992).

⁹⁶ Interestingly, of the 46, a total of 33 have been reportedly found in Costa Rica, where the majority probably arrived as trade pieces during prehispanic times (Balser

factors and processes, such as ritual termination, so that their iconographic and textual material is incomplete. Many of these have been discussed in an excellent monograph by Reents-Budet and Fields (1990), and in unpublished but well-circulated articles by myself (Mora-Marín 1995a, 1995b, 1995c, 1996, 1997).⁹⁷

5.5. Art Historical and Archaeological Evidence. The art historical study of jade plaques has been very prolific. Starting with Morley and Morley (1939), many authors have contributed either with brief but significant remarks, or with highly detailed essays and monographs.⁹⁸ Here I review only those of special relevance to this dissertation, including studies on Olmec-style and Mayan-style jade plaques. Rather than reviewing them chronologically, a thematically organized review may prove more useful.

First of all, the plaques are of three main types: belt plaques for vertical suspension, pectoral plaques for horizontal suspension, and limb plaques that were simply tied to arms and legs (Taube 1995) (**figure 1.11**). For the purposes of this paper, I regard pendants as diverse as flat celt-like plaques, concave clamshell effigies, and spoon-shaped pectorals as equivalent. Iconographic evidence suggests they were similarly used as ornaments, and as I elaborate further here and in Chapter VI, these three types bear very similar iconographic and textual themes.

Second, the main iconographic subject matter found in Olmec-style plaques appears to consist of three interrelated subthemes: (1) the Maize Ear Theme (**figure 1.18c**), (2) the Maize God Theme (**figures 1.18a,b**), and (3) the Ruler Portrait Theme

1974, 1980; Easby 1968; Fields and Reents-Budet 1992; Garber et al. 1993; Graham 1991, 1992, 1998; Mora-Marín 1995, 1999; Stone 1964, 1977; Stone and Balser 1965).

⁹⁷ I have personally examined half of the corpus, including one previously unknown to other scholars and housed at the Jade Museum in Costa Rica (INS 4563) and soon to be published in my FAMSI Interim Report at www.famsi.org.

⁹⁸ These authors include: Proskouriakoff (1950), Joralemon (1971, 1988), Digby (1964), Rands (1965), Coe (1965, 1966), Balser (1974, 1980), Mathews and Pendergast (1979), Mathews (1985), Justeson et al. (1985), Justeson (1986), Schele and Miller (1986), Fields (1989, 1991), Reilly (1989, 1991), Justeson and Mathews (1990), Reents-Budet and Fields (1990), Fields and Reents-Budet (1992), Graham (1992, 1998), Porter (1992), Folan et al. (1995), Taube (1995), Stone (1996), and Mora-Marín (2000), among many others.

(figure 1.12). These subthemes can coalesce to form (4) the Axis Mundi Theme (figures 1.16 and 5.2). Put simply, the figure of the ruler, indicated by his ceremonial attire and status symbols, among which were the celt effigy plaques which were perceived as maize ears and the so-called Jester God or royal headband motif that itself represented a maize plant, represented a maize tree himself. As such, he was at the center of the cosmos, as the axis mundi (Fields 1989, 1991; Freidel, Schele, and Parker 1993; Joralemon 1971, 1988; Reilly 1990; Reents-Budet and Fields 1990; Taube 1995). This complex of themes, subthemes, motifs, and expressive media (e.g., jade objects, stelae, mural paintings) constitute what has been called the Middle Formative (Preclassic) Ceremonial Complex (Grove 1984; Reilly 1990). The rituals implied in other contemporaneous plaques were likely part of the ritual formulae prescribed by this ceremonial complex. The ruler, through shamanic ritual, became the Maize God, and as such had creative powers. Consequently, jade belt, pectoral, and limb jade plaques, as manifestations of maize ears themselves, were the optimal media in which to encapsulate this ideological program. At the same time, because of the portable, rare, and precious qualities of jade objects, they were also the optimal media for the transmission of this political ideology, as attested in their broad distribution throughout Preclassic Mesoamerica and Lower Central America (Coe 1965; Grove 1984).

Third, it is in jade plaques that the evidence for the origin of writing in Mesoamerica is the clearest to date. As discussed in Chapter I, Justeson (1986) and Justeson and Mathews (1990) trace some of the shared representational conventions of all Mesoamerican scripts back to the Middle Preclassic Olmec-style celt iconography. These conventions include: (1) the pars-pro-toto ('part-for-the-whole') principle (Coe 1976), in which a referent (e.g., RULER) (figure 1.12a) was represented with a segment of the whole (e.g., the ruler's head) (figure 1.12b); (2) the vertical linear format (figures 1.13 and 1.14); and (3) the left-facing sign orientation (figure 1.11). The presence of these features in Middle Preclassic Olmec iconography, and the prestige that became associated

with the Olmecs throughout Mesoamerica, as reflected in the Mixe-Zoquean loans for ritual and cultigen vocabulary into other Mesoamerican languages during the Preclassic (Campbell and Kaufman 1976; Justeson et al. 1985; Kaufman 1976), are suggestive of inheritance from an Olmec system.

Fourth, in addition to constituting an efficient media for the iconographic transmission of the Middle Preclassic Olmec political ideology, it has been argued that jade plaques or celts are not only maize ear effigies, but also miniature stelae, or vice versa, that stelae were celt effigies (Drucker and Heizer 1956; Drucker, Heizer, and Squier 1959; Porter 1992; Taube 1995). The archaeological, stylistic, and iconographic evidence support this for the case of Olmec-style celt and stela complexes (**figures 1.16a,b** and **1.17c**). Given that the stela format was the preferred textual/iconographic format of subsequent Mesoamerican script traditions, such as the Epi-Olmec and Mayan, these facts strongly suggest that such an association was a Middle Preclassic development. Furthermore, I would argue that this was precisely the function of jade plaques: to transmit not only the Olmec political ideology and its iconographic code, but also to propagate the monumental stela format itself by means of portable models.

What about Mayan-style jade plaques? As Fields (1989), Freidel, Schele, and Parker (1993), Reents-Budet and Fields (1990), and Taube (1995) have shown, Mayan-style jade plaques bear very close formal and thematic relationships to the Olmec-style plaques, including the following traits (**figure 5.1**): the celt-like shape of the plaques themselves, the manner of suspension (**figures 1.11d**), the left-facing orientation of pictorial imagery, the prevalence of the Ruler Portrait Theme, the Maize God and maize tree attire worn by the ruler (**figure 5.3**), the centering of the ruler as the axis mundi with the jade plaques as its corners (**figure 5.4**), and the textual information alluding to the ruler's ritual prerogatives, which I discuss in the following section. The continuity between Olmec and Mayan celt traditions is not surprising given that the direct descendants of the Olmecs, the Epi-Olmecs, continued the tradition, as attested in Tres

Zapotes Stela C (Porter 1992), and in an Epi-Olmec plaque of possible Late Preclassic age discovered in Costa Rica (**figure 5.5**) (Mora-Marín 2000f), the latter bearing various stylistic correspondences with the glyphs of La Mojarra Stela 1 and the Tuxtla Statuette.

Unlike the Olmec, Mayan jade plaques were arranged in one, two, three, or four sets of three as belt ornaments around the ruler's belt. The grouping into threes has been convincingly argued to relate the jade plaque ornaments with the three-stone Jester God motif, the royal headband, which itself may represent the three hearth stones of Creation (Fields 1989; Taube 1998). Thus, in addition to centering the ruler with respect to the four corners, the Mayans also associated the ruler (and rulership itself) with the three hearth stones of Creation that were set by the Maize God, Hun-Nal-7ey to the Classic Lowland Mayans (Freidel, Schele, and Parker 1993:73-74; Houston, Robertson, and Stuart 2001; Taube 1995:6, 1998). Consequently, the Mayans inherited the basic precepts of Olmec political ideology transmitted via jade plaques.

And last, but not least, as Morley and Morley (1939), Mathews (1985), Mathews and Pendergast (1979), Proskouriakoff (1950), Reents-Budet and Fields (1990), and other authors have noted, the similarities between the iconography of jade plaques and stone monuments are too many to be coincidental. The Ruler Portrait Theme, with the characteristic Maize God attributes, was the most prevalent theme of Early Classic jade plaques and stone stelae, although other themes and subthemes, such as the Bound Prisoner and the Self-Coronation Theme, were also common to both types of media (**figures 0.1** and **5.1**). Most scholars in fact regard Mayan jade plaques to be miniature stelae for this reason. Taking into account their likely predecessors, the Olmec-style celt and stela iconography, the Early Classic Mayan jade plaques and stelae are very likely a continuation of the Olmec pattern, attesting to the importance of history, whether oral or written, and of ancestral heirlooms, such as jade celts themselves, in preserving such knowledge for over a millennium. The Late Preclassic jade plaques that I study in Chapter VI, in fact, may provide insight into how such knowledge was preserved, as they

close the link between the Middle Preclassic Olmec celt iconography and the Early Classic Mayan celt iconography.

5.6. The Structure and Content of the Texts.⁹⁹ The following are the major works on the texts present on Mayan jade plaques: L. Anderson (1993), Ayala (1983), Balsler (1974, 1980), Berjonneau and Sonnery (1985), Coe (1966, 1973, 1976), Fields (1989, 1991), Fields and Reents-Budet (1992), Folan et al. (1995), Freidel and Schele (1988, 1989), León (1984), Marcus (1976), Mathews (1985), Mathews and Pendergast (1979), Mora-Marín (1995, 1996, 1997), Morley and Morley (1939), Proskouriakoff (1950, 1974), Reents-Budet and Fields (1990), Schele (1982), Schele and Miller (1986), Stone (1977), Stone (1997), and Stone and Balsler (1965).¹⁰⁰ The following summary focuses on the glyphs and themes that are most prevalent; the signs listed in **figure 5.6** are particularly important.

The first textual theme that must be mentioned is that of calendrical and astronomical reckoning. This theme was intimately linked to the theme of accession to office, as mentioned below. In **figure 5.7** I provide examples of the types of calendrical and astronomical information preserved for some of these plaques. Most of the information comes from three plaques that are pristinely preserved, the Leyden Plaque and the two Rio Azul plaques (**figures 5.7a,c,d,e**). Another plaque, this time a jade plaque from Costa Rica, may preserve sufficient information to place the date of the inscription at A.D. 270, 8.11.12.11.0 (**figures 5.7f,g**).¹⁰¹ Yet another plaque from Costa

⁹⁹ In Footnote 12 of Chapter II I list all the abbreviations for linguistic glossings used in this dissertation.

¹⁰⁰ The epigraphic discussions in Balsler (1974, 1980), Stone and Balsler (1965), and Stone (1977) were contributed by Eric Thompson and Tatiana Proskouriakoff.

¹⁰¹ The Calendar Round appears to be 3-Ahau 17-Yax, which was the notation of certain regions (Thompson and Proskouriakoff 1945). If one assumes this was 3-Ahau 18-Yax in the more standard practice, and if one takes into account the data on the lunation in the same text (3 lunations), then 8.11.12.11.0 matches these data. While the Fourth Lord of the Night would have been in power that day, no Lord of the Night information survives in the text. Of the seven positions of 3-Ahau 18-Yax in the Long Count during the Early Classic period only one, that on 8.11.12.11.0, A.D. 270, coincided

Rica has as its text-opening glyph a distance number (**figure 5.7h**), suggesting that the plaque may have been one of a set with a continuous text.

Another textual theme is that of accession to office. Starting with the Leyden Plate (**figure 5.8a**), three of the Costa Rican plaques (**figures 5.8b-d**), and the DO celt (**figure 5.8e**), accession to office is expressed either by T644 **CHUM/KUM** ('to sit (in office)'), T684 **JOK'** 'to rise (to rulership)', or distance numbers and titles (e.g., 'X-YEAR as lord'). This theme is quite prevalent in the contemporaneous monumental record.

Lastly, another general theme present in a few of the plaques is genealogical statements. One example (**figure 5.9a**) shows the terms **y(a)-AL(-la)** proto-Ch'olan **y-al* 'her child. the child of (mother)', and probably **7u-ma-m(a)** proto-Ch'olan **7u-mam* 'the grandson/nephew/grandfather/ancestor of (relative)' (Mora-Marín 1995a; Reents-Budet and Fields 1990).¹⁰² Another example shows the term **7u-HUN-TAN(-na)** (**figure 5.9b**), interpreted as 'the cherished one of (mother)' by Stuart (1997), but which in my opinion might be read 'her first/one/only chest/stomach' or 'the one/only chest/stomach of (mother)' as a reference to either nursing (i.e., the first child to be nursed by a woman, and therefore a first-born) or pregnancy (i.e., the first pregnant belly of a woman, and also presumably a metaphor for first-born) (Mora-Marín 1995a). In any case, genealogical statements are also typical of texts on stelae. This is in keeping with jade plaques being essentially miniature stelae.

There are also several placenames attested in these texts (**figure 5.10**), one of which is attested in two jade plaques, the Leyden Plaque and a Costa Rican plaque

with a Moon Age of 3, while the others had moon ages of 4, 5, 6, and 1. So 8.11.12.11.0 seems like a more probable date.

¹⁰² In the DO celt the accession verb is likely in glyph block B3, but it is unclear what the glyphs spell. However, the following glyph appears to read T51.168:518 **ta-7AJAW** 'as lord', and consequently, B3 may be either a verb (e.g., 'He sat as lord') or a time period (e.g., 'X years as lord'). T1 **7u** is the only easily identifiable sign in B3, and may be spelling the third person ergative/possessive prefix.

(figure 5.10a), and another which refers most likely to a cosmological location (figure 5.10c). There are several names of people¹⁰³: one of them in an incomplete genealogical statement, and referring to a ruler's mother as **7u-HUN-TAN(-na)** [...] **B'ALAM** 'the first-born of ... Jaguar' (figure 5.9b). Several names of historical people are present in the Leyden Plaque and the two Rio Azul plaques; given that the name of the Leyden Plaque's protagonist (figure 5.8a), spelled **WAY(AB')-ko-?**, was seated as lord in A.D. 320, and that the person from the same place as that lord (**CHAN-na CHAK-ko-wa**) mentioned in the Costa Rican plaque (figure 5.10a) may have acceded fifty years earlier on A.D. 270, it seems likely that the name that is now lost on the Costa Rican plaque may have been the father or at least the predecessor of the **WAY(AB')-ko-?** individual, and therefore that [...] **B'ALAM** was his grandmother perhaps. As Linda Schele (1982) pointed out, the name of a possible personage from Tikal is found on another jade plaque from Costa Rica (figure 5.10e); although the glyph in question may simply be a phonetic sign **la**, this sign may have still been part of his name. As noted by several authors, the name of one of the lords from Tikal, which I read as **HUN-B'ALAM**, may appear on another jade plaque from Costa Rica (figure 5.10f). And lastly, a glyph that corresponds in at least one instance to part of the name of Sihjyaj Chan K'awil on a lidded tripod pot (Grube and Martin 2000:II-31) is also present in a jade plaque from Costa Rica (figure 5.10h).

Quite a variety of different verbal expressions are attested in these jade plaques, most of which are typical of texts on stelae too. I show most of them in figure 5.11. These do not include the accession statements already mentioned, nor the T712 glyphs discussed below in more detail. They include ritual and dedicatory verbs (e.g., **TZAK** 'to conjure', **CHOK** 'to throw down incense', **K'AL** 'to wrap', **CH'AM** 'to carry, to grab'), possible agency/cause verbs/nouns (e.g., **7u-T528-hi**), and death expressions (e.g.,

¹⁰³ Unfortunately, due to the fragmented state of the jade plaques in question, the names of the personages mentioned in these genealogical statements are absent or at best incomplete.

7OCH-HA7-ja/AJ), among others. Active transitive, intransitive, passives, antipassives, and positionals are all attested.

Other subject matter includes the names of objects, including possible references to the jade plaques themselves (given that such terms do not occur on other portable or nonportable media in self-referring contexts). These are shown in **figure 5.12**, and include the T712 and T841 glyphs, the T503 **7IK** 'wind' glyph, the **ka-ya-wa-ka** glyph, the **ya-T840-li** glyph, the T548 **HAB'/TUN** glyph, and the **yu-k'e-sa** glyph. I discuss these briefly in the order I have just now listed them, although I discuss T712 and T841 in more detail after this quick summary.

Mathews (1985) has noted that several jade plaques contain examples of the glyphs T712 and T841. Rather than suggest a close association between the two on that basis, he notes that this is consonant with the generally high frequency of T712[841] glyphs during the Early Classic period, specially at sites like Tikal. Indeed, many different types of artifacts, both portable (e.g., jade plaques, jade masks, slate disks, bone bloodletters) and monumental (e.g., stelae, altars, lintels), may bear examples of T712 and T841. Only six inscribed jade plaques, out of about three dozen (granted the majority are fragmentary), contain the T712[841] glyph. I do not think that in terms of frequency of occurrence in particular media alone one can say anything about the meaning of T712 and T841. Houston (personal communication 1995) and Marcus (in Folan et al. 1995), though, have suggested that the association is more direct, that T712 or T841 or both may refer to the plaques themselves. In the case described by Marcus (Folan et al. 1995), the glyph **ya-T841-li** (**figure 5.12f**) might be text-initial, supporting her view that **ya-T841-li** might stand for a possessed noun, and possibly serve as a label for the jade plaque (e.g., 'It is the T841 of...'). However, as I mentioned earlier, some jade plaques may not have had self-contained texts, but instead, may have been part of a set of jade plaques with a continuous text running across the separate pieces. This means that the text-initial **ya-T841-li** may not be text-initial at all, only plaque-initial. I am therefore not convinced

that there was a direct relationship between T712 and T841 and jade plaques.

In contrast, there is a very clear glyphic and iconographic relationship between T503 **7IK'** 'wind' and jade objects of various types. Reents-Budet and Fields (1990) have pointed out that in pictorial depictions of jade plaques T503 **7IK'** is often shown infixed. Following up on this, I hypothesized that T503 **7IK'** might be a label for jade plaques, as well as for other artifact types (Mora-Marín 1995a, 1995b, 1995c, 1996, 1997a) (**figure 5.13**). I tested this hypothesis in the Jade Museum jadeite spoon text, as I describe in Chapter VI, and argued that T503 **7IK'** in fact functions as a name for jade objects based on its syntactic context in that text. While at the time I proposed the reading **NAL** for T503 outside of its day name context, based on what I still think is an unexplained set of substitutions of T503 for phonetic **na-li** first pointed out by Barbara MacLeod, I now think it might read **7IK'(AL)**, but the evidence for this is not important to the morphosyntactic analysis of Chapter VI, and I will therefore present it elsewhere.

Taube (2000a) has more recently shown that jade pendants and more generally musical instruments such as drums and rattles, were labeled with T503 **7IK'(AL)** 'wind', and in this way they may be associated with the Wind God. The Wind God, indeed, is the patron of music and dance, and therefore the T503 **7IK'** 'wind' label is appropriate (e.g., Taube 1992); in Colonial Yukatek the term <(ah) ikal> for (7aj+)7ik'-al meant 'poet or one who knows music' (Barrera Vásquez et al. 1980:266). Jade pendants, rattles, and drums are all percussion instruments. To my knowledge there are no examples of T503 infixed inside images of any other type of musical instrument. Based on this evidence, then, I think jade plaques and other jade pendants may have in fact served as musical instruments; their tinkling sound may have made them ideal dance regalia components, which suggests they were designed and crafted for ritual dancing and display, regardless of whatever symbolic associations they may have had.

This idea is supported by a few textual contexts of T503/1082 **7IK'** 'Wind (God)'. It is found in two bone rattles from Tikal, one of which is worth mentioning here briefly.

As shown in **figure 5.14**, the rattle in question (Tikal Burial 116, MT-29) contains two passages that seem to refer to the rattle itself by means of T1082 **7IK'(AL)**. The text itself contains three clauses. The first clause opens with a date, followed by a predicate **BAD.OMEN-la**, and a subject **?-?-NAL**. The second clause opens with a date too, a predicate **PUL-yi-ya**, and a subject **7IK'(AL)**. And the third clause opens with a date, and is followed by a predicate **BAD.OMEN-la**, and a subject **7IK'(AL)**. The second passage reads: [DATE] **PUL-yi-ya + 7IK'(AL)** for [DATE] pul-(u)y-iv-Ø(+a) 7ik'(-il/al) 'it was [DATE] since/after the [instrument] was burned (here)'. The presence of the deictic 'since' suggests this is a background event. The main event follows shortly afterward (a few calendrical glyphs intervene between the two): **7u-BAD.OMEN-la + 7IK'(AL)** for VERB-(V)l-Ø-Ø(+a) 7ik'(-il/al) '(and) it was [DATE] (when) the [instrument] was VERBed (here)'. The meaning of the **BAD.OMEN** glyph is not clear, but its reading may be something like **7U(CV)L** according to Schele and Grube (1997:25). Regardless of the meaning, this **BAD.OMEN** glyph refers to some type of dedication ritual, perhaps one involving termination, given that the **7IK'**, that is the bone rattle, had already been burned.

In Mora-Marín (1995a, 1995b, 1995c, 1996, 1997) I also identified another type of glyphic label for specifically jade objects. This glyph is attested on the Lake Güija Plaque (Houston and Amaroli 1988). Indeed, at A1 one finds the expression **7u-SHARK.HEAD** (**figure 5.15a**). This **SHARK.HEAD** icon permeates Mayan iconography, always present where jade beads and plaques are supposed to be (**figure 5.15b**). The presence of the expression on a jade plaque, which is followed by the apparent name of a person referred to as [...] **MAM** [...], at A2, the word generally used in the glyphs for 'ancestor', suggests that this plaque was owned by an ancestor of the person who inscribed it or who commissioned its inscribing.¹⁰⁴

¹⁰⁴ This glyph shows some of the diagnostic traits of the **GOD.N** glyph: first, a circular bead on the head (**figures 4.6e, 4.7e,i**); and second, a beard (**figures 4.7a,b,e,f,h**). Moreover, it shows part of the full version of T74 **ma** at the bottom. Given the fact that

David Stuart has identified a few examples of another possible name-tag for jade plaques, read phonetically **ka-ya-wa-ka** (figure 5.12h). Since this expression begins with a consonant, and since the SHARK.HEAD glyph must also begin with a consonant since it takes the preconsonantal third person ergative prefix, and given that the two occur in the same type of artifact, it is possible to hypothesize that the SHARK.HEAD may be simply the logographic form of **ka-ya-wa-ka**.

The last example I wish to mention briefly is one suggested by Marc Zender: **yu-k'e-sa** (figure 5.12i). This glyph appears on three texts: the Pearلمان conch shell, the Unprovenanced jadeite turtle shell effigy, and one of the Rio Azul jade plaques. In all examples it is not clear what its syntactic function might be; it could be either a noun or a verb. Indeed, it is clause-initial in the jade turtle shell, suggesting a verb or a possessed noun if **yu** spells y-u... 3sERG-..., the prevocalic third person ergative prefix. In the Rio Azul plaque it follows the verb **7u-CH'AM-wa** 'He grabbed it/them' and precedes the possessed noun **7u-ka-ya-wa-ka** 'His [jade.plaque]' (see above). Marc Zender (personal communication 2001) analyzes **yu-k'e-sa** as y-uk'-esa 3sERG-cry-CAUS. However, he favors a nominalized form of this causative verb form meaning 'his tinkler' or 'his noisemaker', rather than a verbal function as y-uk'-esa-Ø-Ø 3s-ERG-cry-CAUS-CMP-3sABS 'he made it tinkle (lit. he made it cry)'. In my opinion the morphosyntactic contexts make it likely that **yu-k'e-sa** is a verb, but I have yet to see the lexical and syntactic evidence from modern Ch'ol and Tzotzil that Zender uses to support his nominalized reading.

5.7. The T712 and T841 Glyphs. Here I briefly discuss the T712

the GOD.N glyph has several readings, and that one of them is **MAM**, I take this bottom part of T74 **ma** to be a likely phonetic complement to **MAM**, hence **MAM(-ma)**. The circular bead element resembles a half T62 **yu**. This is not surprising, since T62 **yu** is itself a depiction of a bead. In a previous paper (Mora-Marín 1995b) I suggested that this bead sign, T62 **yu**, together with the bottom part of T74 **ma** provided a reading of **yu-YUM-ma** for this glyph, or in other words, of yum 'owner, boss'. However, I have since realized that the half or partial T62 is an iconic element of the **MAM** sign.

PERFORATOR glyph (**figure 5.6c**), variously read by epigraphers either as **CH'AM** 'to pick/harvest' or as **CH'AB'** 'to create, creation' (see Schele, Stuart, and Grube (1991) for review of these proposals and the evidence), and the often accompanying T841 glyph (**figure 5.6b**), with the established reading **7AK'AB'/7AK'B'AL** 'night', and the proposed reading **7AK'** 'tongue' (Bricker 1986). First of all, there is evidence supporting two different syntactic functions for the T712: a nominal function and a verbal function. And second, there is evidence supporting two nominal meanings.

First, regarding the reading of T712, Schele, Stuart, and Grube (1991) review the phonetic evidence suggesting two logographic readings: **CH'AB'** and **CH'AM**. The first reading is more strongly supported in more contexts, and was first presented as a hypothesis by Barbara MacLeod. First, T712 on occasion appears spelled with phonetic **ch'a** preposed, as **ch'a-T712**, regardless of its context. Second, it appears in a parentage statement where sometimes it takes T501 **b'a** as an apparent postposed phonetic complement (**figure 5.16a,b**). In this same parentage statement context, it is substituted by the sequence **ch'a-b'a** in one instance (**figure 5.16c**). This last fact, together with the optional **ch'a-T712** and **T712-b'a** spellings point to a logographic reading **CH'AB'**. In addition, on an alabaster vase from Los Higos one finds the glyph **7u-ch'a-b'a-wa**, spelling an apparent active transitive verb as 7u-ch'ab'-aw-Ø(+a) (3sERG-VERB-CMP-3sABS(+ENCL)) 's/he/it CH'AB'ed it' (Schele and Grube 1995:139). Unfortunately, there is not a single example of a spelling **...ch'a-T712-b'a...** that would once and for all clear up the issue. In fact, the story does not end there. There are also a few instances where T712 may appear as **ch'a-T712** (Caracol Stela 3:B19b) or **T712-ma** (Tikal Stela 39:B4) or **ch'a-T712-ma** (Copan Structure 22A Stone:F4). These spellings, which are all optional (only T712 is obligatory in these contexts), point to a logographic reading **CH'AM**. But this time there are no cases whatsoever of a purely phonetic spelling **ch'a-ma** in a context where one would otherwise find T712; nor are there cases of T710 **CH'AM** 'to take, to grab, to carry' substituting for T712 or vice versa. While grapheme

polyvalence is not uncommon in the Mayan script, the discussion so far should instead point to a different conclusion: a basic reading **CH'AB'**, with an optional postposed **ma** sign in certain contexts perhaps spelling a grammatical suffix or marker of some sort.

Regarding the interpretation of the glyph, there are two certainties: T712 is somehow associated to both sacrificial rites (e.g., bloodletting from the tongue and penis) and parentage. MacLeod suggested the lexical item <ch'ab> 'abstenerse de deleites carnales, ser casto y hacer penitencia' and 'criar, hacer de nada', from colonial Yukatek (Barrera Vásquez et al. 1980:120), as the possible referent of **CH'AB'** (cf., proto-Ch'olan *ch'ahb' 'fast', from Kaufman and Norman [1984:118]). As Schele, Stuart, and Grube (1990:7) recount, "the former definition she associated with bloodletting rites, suggesting that the glyph refers to the abstinence known to be associated with Maya ritual," while the latter reading could be the one appropriate to parentage statements. In Colonial Yukatek at least, <ch'ab> required transitivization with -t or -s in order to be used verbally (Barrera Vásquez et al. 1980:120), suggesting it was not a transitive verb otherwise. In Ch'olan a noun such as *ch'ahb' may have been transitivized with *-t or *-s, both transitivizers, or with *-ā, an applicative suffix.

Schele, Stuart, and Grube (1990:7), for their part, cite the following lexical item from Ch'orti', and its derivations, as the possible referent of the **CH'AM** reading: ch'am 'to take, grab, harvest'. However, the validity of this interpretation would rest on a metaphorical association between harvesting and sacrifice, which while not difficult to entertain, is not as straightforward as the term <ch'ab>, which already refers to sacrifice and has a second meaning referring to creation. Furthermore, there is supporting evidence from the possible iconic motivation behind the reading **CH'AB'** for T712.

All art historians and epigraphers agree that T712 depicts a bloodletting implement, a perforator. This is evident in the iconography, where T712 is shown as one of the implements used in bloodletting rituals (cf. **figure 5.17b**). It is also evident contextually from an example of an inscribed bone bloodletter excavated at Yaxchilan

(figure 5.17a): the bloodletter's text refers to the bloodletter or perforator as **7u-B'AH** + **7u-T712-li** + [Itzamnah B'ahläm] 'It is the image of the T712 of [Itzamnah B'ahläm]' (Martin and Grube 2000:126). This strongly suggests that T712 refers in this instance to the perforator itself. Does this mean that T712 is polyvalent after all? I think that T712 can mean 'penance, fasting' and 'perforator' at the same time without having to summon the term polyvalency.

I think that the **ch'a-T712**, **T712-b'a**, and **ch'a-b'a** spellings not only suggest a reading **CH'AB'** for T712, but perhaps also a reading **CH'ACH'AB'**. Indeed, under the consonant deletion rule of Mayan writing (e.g., word-finally as in **7AJAW-le** instead of **7AJAW-le-le**, and word-initially as in **ka-wa** for **ka-ka-wa**), the spellings **ch'a-T712** and **ch'a-b'a** could in theory be read **ch'a-ch'a-T712** and **ch'a-ch'a-b'a**. An iconic referent such as BLOODLETTER/PERFORATOR (T712), may have had a logographic reading based on a lexical item such as Modern Yukatek term ch'áach'ab' means 'perforator' (Bricker, Po7ot Yah, Dzul de Po7ot 1998:78), derived from ch'ach' 'perforate /in many places/' by suffixation of a synharmonic instrumental suffix -ab'. I think, then, that the T712 glyph represents a ch'ach'ab', that is, a 'perforator', and that in some contexts (e.g., bone bloodletter from Yaxchilan) it had precisely that reading, **CH'ACH'AB'**, which may have been orthographically equivalent to **CH'AB'** through the rule of consonant deletion.

Now regarding the verbal and nominal uses related to sacrifice, the following can be said. One example from a jade plaque can be used to illustrate a verbal usage of T712. In this plaque, the following passage appears (the text is incomplete, but the passage appears to make up a clause by itself, and to be found at the beginning of the text: the name phrase of the subject most likely followed but is now missing)¹⁰⁵:

¹⁰⁵ The alternative reading **JOY** 'to circle, turn', a root transitive verb, for T684 has been recently proposed by David Stuart. It may refer to a ritual demarcation of sacred space. It has long been thought by several epigraphers that the iconic motivation of T684 **NOOSE**, *jok' 'knotted cloth, hanging, noose' in proto-Ch'olan (Justeson 1984:351), was

- (5.1) 7u-T712 JOK'/JOY-yi
 7u-T712 jok'/joy-i-Ø
 3sERG-T712 rise/circle-CMP/THEME-3sABS
 ta- 7AJAW
 tā 7ajaw
 PREP lord
 'He(S/A)_i T712ed (it) and ___i(S)_i rose//was.tied//was.circled as lord'.

In this example a verbal interpretation of T712 (e.g., 'He T712ed (it) and rose/circled as lord') makes more sense than a nominal interpretation of T712 (e.g., 'It is/was his T712. He rose/circled as lord'). The reason for this is that, as pointed out above, T712 cannot be a reference to the jade plaque itself, because T712 appears in all different types of media and is not directly associated to jade plaques; and also, because T712 functions as a noun referring to 'fasting' or 'penance' or more generally to 'sacrifice', or to 'perforator'; jade plaques were not perforators, nor were they in any obvious way 'sacrifices'. Other than serving as documents when inscribed, their major function was probably as ceremonial tinklers, as already argued above. Thus, it is more straightforward to interpret T712 as a verb.

There are clear-cut examples of T712 used as a verbal expression in Classic Mayan texts: **figure 5.18a** shows YAX-T712-ja/AJ + [AGENT] '[AGENT] was T712ed for the first time', if T712 represents a root transitive verb and is mediopassivized, or '[AGENT] T712ed for the first time', if T712 represents a noun that can be derived into a verb by means of **-aj* 'intransitivizer of nouns' (Lacadena 1996). If the former interpretation is assumed, a possible meaning would be 'to create', but this would not

a rebus for **jóok* 'to rise, to come out'. As Justeson points out, there is at least one clear instance where T684 is used with the meaning 'hanging', and thus was probably read JOK' in at least that instance. In the example in **figure 5.6c**, the verb appears inflected as an active transitive verb: 7u-T684-wa. This might eliminate the meaning 'to rise, to come out'.

evident that god-conjuring was undertaken through bloodletting rituals, and also that the instruments used for bloodletting were a perforator and a rope or vine. I propose that the former is named by T712 as **CH'ACH'AB'** 'perforator', while the latter is named by T841 as **7AK'** 'weed, vine'.

T841, like T712, is surrounded by controversy. It has a known and well-established reading **7AK'AB'/7AK'B'AL** for proto-Ch'olan *7ahk'äb' ~ *7äk'b'-äl 'night'. In addition, Bricker (1986) has proposed the reading **7AK'** for proto-Ch'olan *7ak' 'tongue', based on the tongue-piercing imagery already mentioned. While I support the second reading as **7AK'** in addition to the **7AK'AB'/7AK'B'AL** reading, I think it may be based on proto-Ch'olan *7ak' 'weed, grass', in addition to, or instead of *7ak' 'tongue'. Regardless of the precise interpretation, the reading **7AK'** has additional iconographic support: the Ak'bal sign, T504/841, is sometimes used as an infix in depictions of water jugs (**figure 5.20**), which could be explained via Yukatek word 7á:k' 'green, immature, unripe, moist; new, fresh' (Bricker, Po7ot Yah, and Dzul de Po7ot 1998:3; Swadesh, Álvarez, and Bastarracchea 1991:34). Besides tzak 'to grasp, to conjure', the Mayans, whether the Classic Lowland Mayans or modern Mayans, use additional terms in reference to interaction with the supernatural. The terms for 'entering' and 'seeing' are typically two of these. As shown in **figures 5.19a,b**, the T712 and T841 instruments were also used to undertake such activities.

5.8. Conclusions. The study of the corpus of jade plaques suggests jade plaques were related to the Maize God and the Wind God, and also, that they were stylistically and thematically related to stelae. They may have been regarded as maize ears effigies. Taube (2000a) has more recently shown that jade plaques, as well as other jade pendants and more generally musical instruments, were labeled with T503 **7IK'** 'wind', and in this way they may be associated with the Wind God. I made this discovery independently in Mora-Marín (1995, 1996), although at the time I only noticed that T503 served as a label for jade plaques and pendants, not for percussion musical instruments in general. I now

think jade plaques and other jade pendants may have in fact served as musical instruments; their tinkling sound may have made them ideal dance regalia components. This in turn suggests they were specially designed and crafted for ritual dancing and display.

Porter (1992) has shown that certain types of Preclassic stelae were stylistically and thematically related to jade plaques. This supports the argument by Morley and Morley (1939), Proskouriakoff (1950), Mathews and Pendergast (1984), Mathews (1985), and Reents-Budet and Fields (1990) that inscribed jade plaques were effigy stelae, and that their royal iconography and textual content makes may have made them symbols of royal office. Furthermore, Justeson (1986) and Justeson and Mathews (1990) have observed that the iconographic principles of Middle Preclassic Olmec-style jade plaques are very similar to those of some types of Early and Middle Preclassic Olmec stelae. Following Justeson's (1986) suggestion that Olmec-style iconography and possibly writing may have spread throughout Mesoamerica by means of portable elite objects such as jade plaques, and following Reilly's (1990) arguments for the world-axis theme of Middle Preclassic Olmec-style jade plaques, I think this artifact type was instrumental in the development and diffusion of Olmec political ideology during the Middle Preclassic, and that Late Preclassic and Early Classic Mayan jade plaques are direct descendants of this tradition. This is supported by the iconographic and stylistic content of both the Olmec-style and the Mayan jade plaques: the Ruler Portrait Theme and accession-related rituals.

I question whether there is a significant correlation between jade plaques and the T712[841] glyphic compound. As first noted by Mathews (1985), the presence of such compound in jade plaques is no more prevalent than in inscribed stelae from the same time period. Since jade plaques are miniature versions of stelae (or vice versa, stelae are monumental versions of jade plaques), this should not be surprising. Here I propose a new reading for T712, supported by orthographic, linguistic, iconographic, and contextual

evidence: **CH'ACH'AB'** 'perforator'. From this basic reading it is possible that other readings are derived: **CH'AB'** 'fasting/sacrifice//creation' and **CH'ACH'** 'to perforate'. I also argue that T841 is read **7AK'** 'rope, vine' in the T712 + T841 contexts, and that T712 as **CH'ACH'AB'** 'perforator' and T841 as **7AK'** 'rope, vine' name the implements used for bloodletting in nominal contexts, while T712 as **CH'AB'** refers more generally to sacrifice or ritual in verbal contexts.

CHAPTER VI:

LATE PRECLASSIC PORTABLE TEXTS: A CASE STUDY

6.0. Overview. In this chapter I carry out an epigraphic and linguistic study of four contextually, calligraphically, and orthographically related Late Preclassic texts: the Dumbarton Oaks quartzite pectoral, the Peabody Museum at Yale basalt jaguar figurine, the Jade Museum jadeite spoon, and unprovenanced jadeite clamshell effigy. I dub these artifacts the DO Pectoral Subtradition (DOPS). I also study a few additional texts, such as the Dumbarton Oaks jadeite plaque, the Cenote tubular jadeite bead, the Brooklyn Museum of Art jadeite pectoral mask, and the Pomona jadeite flare. I begin with a description of the data set and of prior research on it. I describe the sign inventory, or signary, of the four related texts, attempt to identify some of the signs with Classic period counterparts, and mention the distribution and frequency of the more common signs. I also discuss possible stylistic and calligraphic relationships between these and other texts from the Mayan highlands and lowlands, and from the Late Preclassic and Classic periods. I proceed with a structural analysis of the texts, and a linguistic interpretation of their more constrained passages. I conclude that the DOPS texts date in their majority to the early Late Preclassic period (ca. 400 B.C.-A.D. 1), exhibit the basic orthographic conventions of the Classic period, and generally conform to the dedicatory genre, although some of their content overlaps with the historical genre. I also provide a preliminary emic hieroglyphic nomenclature for the objects, and with a summary of the major findings.

6.1. Goals and Methods. The primary goal of this chapter is: to present a structural and linguistic analysis of a subset of Late Preclassic Mayan texts. The secondary goals include: (1) to present a preliminary paleographic analysis of part of the sign inventory of the texts; (2) to use the paleographic results to provide relative dates for

the texts; and (3) to contextualize the artifacts and the texts by means of a preliminary art historical analysis. The results of this chapter are used in Chapter VIII to attempt to determine the linguistic affiliation of the texts, and to compare their structure and orthographic conventions with those of Classic texts.

The methods I have attempted to apply systematically include: (1) first-hand documentation of the texts; (2) structural analysis to isolate constituents and functionally equivalent signs; (3) a linguistic analysis of the structural patterns based on a (Lowland) Mayan framework; (4) iconographic identification of glyphs; and (5) an interpretation of the content of the texts. The first step is what I have called the Late Preclassic Inscription Documentation project, or LAPIDA. The main objective of LAPIDA has been the close examination and accurate documentation in the form of line drawings of Late Preclassic inscriptions. The details and results of this project are provided in **addendum 1**. The following paragraphs concern steps (2)-(5). But first I briefly describe the artifacts that make up the focus of my study.

6.2. Data Set. Various authors have discussed the characteristics of Late Preclassic Mayan texts, including Coe (1957, 1976), Marcus (1976), Ayala (1983), Mathews (1985), Justeson et al. (1985), Schele and Miller (1986), Fahsen (1987, 1988a, 1988b, 1995, 1996, 2000), Houston (1989, 2000), Justeson and Mathews (1990), L. Anderson (1993), Mora-Marín (1995b, 1996, 1997a), and others. Most of these authors have pointed out that Late Preclassic Mayan texts (**table 6.1**) are generally poorly preserved, with the exception of inscribed portable jade, bone, and shell objects, which seem to constitute the majority of texts known for this period; nevertheless, while better preserved, inscribed portable objects are typically brief, unprovenanced, and lacking in calendrical data that can be used to secure their dating, which could be very useful in attempting to formalize a developmental chronology for the early stages of the script. In the absence of more calendrical data, iconographic and paleographic studies are essential to attempt optimal datings for these artifacts.

6.2.1. The “Dumbarton Oaks Pectoral” Subtradition. I use the nickname “DO Pectoral Subtradition” or DOPS to refer to the scribal tradition responsible for the four texts that I focus on in this chapter, based on the fact that the best evidence for this tradition is found in the Dumbarton Oaks quartzite pectoral. Coe (1973, 1976) first formulated the hypothesis that the texts on the Dumbarton Oaks quartzite pectoral and the Peabody Museum at Yale basalt jaguar figurine were so similar in their stylistic, formal, and orthographical attributes that they were probably the product of a single scribal school. I agree with his assessment: the discovery of the Jade Museum jadeite spoon and the Unprovenanced jadeite clamshell pectoral has only strengthened this hypothesis, by highlighting the great cohesion of this small subset of texts when compared to other possibly coeval texts. From this point on I use the abbreviations in **table 6.2** for the texts.

These four texts exhibit the following features: (1) they are all present on portable objects, three of them jade ornaments and one of them a basalt figurine; (2) two of them are relatively lengthy as far as portable texts are concerned, with one showing twenty-four glyph blocks and another sixteen; (3) they are characterized by both single- and double-column formats; (4) they share several calligraphic traits, some of which are shared with other coeval and later Mayan texts, such as double outlines, while others appear to be restricted to this set, such as very fine incisions and angular rather than curvilinear lines; (5) they share several orthographic traits, such as graphic affixing, multiple signs for the same phonetic CV value, phonetic complementation, infixation, animation, compounding, and unlike other coeval and later Mayan texts, a significant degree of stylization of some signs; (6) they share some of their content too, as determined by the occurrence of some of the same signs and sign sequences; (7) they lack calendrical information; and (8) they can be classified as “Izapan” in style (see Chapter VII for definition and discussion of term Izapan).

These qualities make these four texts an optimal data set for epigraphic analysis. Their relative lengthiness and the repetition of signs and sign sequences allows for the

recognition of orthographic conventions and linguistic structure. Also, their presence on portable objects makes it likely that they contain dedicatory and proprietary statements: the type of object itself could therefore be useful in constraining the possible meanings of certain signs. Lastly, unlike their monumental counterparts the vast majority of the glyphs in these four texts, as well as in the other portable texts I discuss here, are legible. Next I describe each of the four artifacts.

6.2.1.1. DO Pectoral. The DO pectoral (**figure 6.1**) was first published by Coe (1966), who provides a lengthy discussion of both its pictorial and textual components.¹⁰⁶ It measures 26.7 cm x 9.0 cm x 2.8 cm, and is drilled for horizontal suspension (two pairs of drill holes, shown in black in **figure 6.2**), and carved with two “X” motifs (Saint Andrews Cross motifs) on the obverse on either side of an Olmec style face with fangs (Coe 1966:6-7).¹⁰⁷ On the reverse it has an incised text and seated personage. Several drawings of the text have been published (see **addendum 1**). My revised and final drawing, prepared and checked against the original, is shown in **figure 6.3**. The pectoral and its inscription have been discussed also in Coe (1973, 1976), Ayala (1983), Schele and Miller (1986:117-119), Fahsen (1987, 1988a, 1995), Fields (1989:52, 56), Freidel and Schele (1989:236), L. Anderson (1993), and Mora-Marín (1996:123-131; 1997:3-12); their observations are summarized prior to my epigraphic analysis.

6.2.1.2. PMY Jaguar. The PMY jaguar (**figure 6.4**) measures 17.1 cm in height, and was first published in Coe (1973:25), who provided both a photograph and a line drawing. My drawing of the text (**figure 6.5**) represents an improvement over the published drawing, as it shows some signs that were left out in that drawing (see

¹⁰⁶ The DO pectoral is not made of jadeite, but quartzite. In this paper, however, I use the generic term “jade” to refer to objects made of any one of a series of green minerals and rocks, including jadeite, nephrite, diopside, albite, quartz, etc., that the precolumbian artisans carved in similar forms for similar uses.

¹⁰⁷ Although Coe (1966:6) says that the face shows “two large canine fangs” which “descend from the otherwise toothless upper palate,” I think it is possible that what he regards as a toothless upper palate is in fact a shark’s tooth; if so there would be a combination of canine fangs and a shark’s tooth, resulting in an composite creature.

addendum 1). The text has been discussed also in Coe (1976), Ayala (1983), L. Anderson (1993), Fahsen (1987, 1988a), Hansen (1991a), and Mora-Marín (1996, 1997). I discuss its stylistic attributes in more detail below.

6.2.1.3. JM Spoon. The JM spoon (**figure 6.6**) measures 18 cm x 5.2 cm, and is made of blue-green jadeite. It has been published in photographic form in the the catalog of the Precolumbian art exhibit in Belgium and the Netherlands (Delataille 1992:Plate 74; Geluwe 1992:Plate 74), in the catalog of the Fidel Tristan Jade Museum (Soto 1996:102-103), in Fields and Reents-Budet (1992:Figure 9), and in the catalog of the exhibit at the Metropolitan Museum of Art (Graham 1998:Plates 26 and 28), and as a drawing (**figure 6.7**) in Mora-Marín (1997:Figure 5) and Soto (1996:20). It is reportedly from Cerro Negro, a hill site in the province of Guanacaste, in the northwestern region of Costa Rica. I discuss its dating below.

The drawing of the text provided here (**figure 6.8**) is a revised and final drawing checked twice against the original; however, there may still be some recoverable details in glyph A1 that my drawing does not show. The text has been discussed previously in Reents-Budet and Fields (1991), L. Anderson (1993), and Mora-Marín (1995a, 1995b, 1995c, 1996, 1997a).

6.2.1.4. UNP Clamshell. The UNP clamshell (**figure 6.9**) is published in Justin Kerr's archive with the number 763 (i.e., K763). No information is available to me regarding its dimensions and precise chemical composition: because of this I simply refer to it as "jade" (in the generic sense of precious greenstone). It resembles the KND bivalve (Schele and Miller 1986:Plate 10) in being a bivalve clamshell effigy, though it likely predates it on stylistic grounds. The previous drawing by John Montgomery (Justin Kerr, personal communication, 1998), partially published in L. Anderson (1993:112-113), is for the most part accurate, but lacks a few small details, one of which is of potential epigraphic significance (see **addendum 1**). My drawing (**figure 6.10**) makes these relatively minor corrections. The location of the UNP clamshell is unknown to me; for

this reason it has not been possible to examine it in person to check the drawing. The drawing was prepared by tracing the high-quality printouts provided to me by Justin Kerr. The dating of the object is uncertain. Below I propose that it dates to ca. A.D. 1-150, corresponding to part of the late Late Preclassic, based on a comparison with another inscribed object (the DO celt). The pictorial portrait of a lord on the concave side of the clamshell and the inscribed text on the convex side conform in general to the standard Early Classic belt plaque format as on the Leyden Plaque.

6.2.2. Other Texts. I discuss three other texts in detail in this chapter: the Dumbarton Oaks jadeite celt (Coe 1976:figure 17; Schele and Miller 1986:plate 22), henceforth DO celt (**figure 6.11**); the Chichen Itza Cenote tubular jadeite bead (CNT 6125) described by Proskouriakoff (1974:85-86, 110-111, Plate 45-1), henceforth CNT 6125 (**figure 6.12**); the Brooklyn Museum of Art jadeite pectoral mask described by various authors (Covarrubias 1957:Figure 94; Schele and Miller 1986:151, Plate 45; Soustelle 1979:Plates 60 and 61), henceforth BMA mask (**figure 6.13**); and the Pomona jadeite flare described in Kidder and Ekholm (1951) and Justeson, Norman, and Hammond (1988), henceforth PMA flare (**figures 6.14**). I have also discussed the inscriptions on these artifacts in detail in Mora-Marín (1995a, 1995b, 1996). These texts are rather different stylistically from the DOPS texts, as I discuss below; whether the differences reflect temporal or geographical variation between the two groups is not clear, although the texts of this second set may postdate those of the DOPS. Proskouriakoff (1974:86) suggested that the CNT 6225 text is early but more closely related to Early Classic Lowland Mayan texts than to Late Preclassic texts such as that on Kaminaljuyu Stela 10, a general assessment that I agree with. The DO celt is of great importance because of its plausible dating to ca. A.D. 120 by Schele and Miller (1986); if correct, and I think it is so, this dating can allow the use of the DO celt's text as a temporal anchor for the relative dating of other texts.

6.3. DO Pectoral Subtradition: Signary. The sign inventory, or signary, of the

four texts discussed here, is shown in **figures 6.15-6.20**, which provide the frequency of each sign in the four texts as well as possible Classic period counterparts. Some of these identifications with Classic signs are explored further in § 6.4. The signary can be described in terms of (i) the total number of signs (TNS), (ii) the total number of distinct signs (TNDS), (iii) the total number of glyph blocks (TNGB), (iv) the ratio of total number of signs to distinct signs per text (TNS/TNDS), (v) the ratio of total signs to glyph blocks (TNS/TNGB), and (vi) the ratio of distinct signs to glyph blocks (TNDS/TNGB). As shown in **table 6.3**, the TNS is 89, the TNGB 56, and the TNDS 61. The TNS/TNDS ratio 1.2, the TNS/TNGB ratio is 1.6, and the TNDS/TNGB is of 1.1. Interestingly, the DO pectoral, the lengthiest of the four texts, matches both the average TNS/TNDS (1.2) and TNS/TNGB (1.6) ratios.¹⁰⁸

According to Grube (1994:177), “the total sum of signs in the sign corpus” of the Mayan script as a whole is of 650-700. He also states, with regard to the Classic period, that “The number of signs used at one specific point of time never exceeds four hundred,” and also that between A.D. 435-909 “The average number of signs employed at any time... is between 250 and three hundred.” If this applies to the Late Preclassic signary, then the four texts of the DOPS may capture anywhere between 20.3-24.4% of the total signary. The DO pectoral provides nearly half of this: with its 32 distinct signs it contains 10.6-12.8% of what may have been the total signary during its time. In other words, it will take a much, much larger corpus of legible texts to approach the 250-300 total estimate.

I have classified the signs into the following types according to iconic motivation and/or graphic shape: human heads (**figure 6.15**), animal head and/or bodies (**figure 6.16**), human body parts (**figure 6.17**), man-made and natural entities (**figure 6.18**), graphic main signs of unclear iconic motivation (**figure 6.19**), and graphic affixes of clear

¹⁰⁸ Other variables may be counted, such as the number of phonetic and logographic signs, but such counts would presume the validity of proposed identifications and decipherments. For this reason I will attempt this in a future paper.

and unclear iconic motivation (**figure 6.20**). This classification should facilitate the task of visual sign identification. The frequency of distinct signs is described in the corresponding **figures 6.15-6.20**. Two signs are represented five times each: BEARDED.GOD.N (No. 1) and T168 (Nos. 155 and 156). Two appear four times: DOUBLE.TRIANGLES (No. 151) and T116 **ni** (No. 154). Three appear three times: FOREHEAD (No. 5), DOUBLE.MERLON (No. 142), and T518 (Nos. 79-81). And eight appear twice: CROSSED.BANDS (Nos. 75-76), HAWK/EAGLE (No. 31), T126 **ya** (No. 46), MOUNTAIN (Nos. 83 and 84), T505 **MAN** or **7AK'(A)B'(AL)** (No. 73), CLOSED.FIST (T671 **chi**) (Nos. 51 and 52), CROSS.HATCHING (T586a **pa**) (No. 159), and possibly T60 **hi** (No. 153).

The DO pectoral text (**figure 6.3**) consists of four columns (A, B, C, D) and six rows of glyph blocks (e.g., A1-A6, B1-B6, C1-C6, D1-D6), for a total of 24 glyph blocks. The columns are paired. It has a total of 34 separate signs, and a total of 28 distinct signs. The number of separate signs per glyph block varies: there is one glyph block with three signs (C6), eight with two signs (A1, B1, A2, B2, B6, C1, C4, C5), and 14 with a single sign (A3, B3, A4, B4, A5, B5, A6, D1, C2, D2, D3, D5, D6). The first two types of glyph blocks are the ones used by Coe (1966, 1976) to identify the use of graphic affixing in the script of the DO pectoral and the PMY jaguar. One glyph block (C3) is incomplete, though probably still legible to the scribe if not to the epigrapher. Two glyph blocks (B2, C1), which are identical, are judged as composed of two signs each based on the comparison with other renderings of the same glyph in other early texts, and based on the morphosyntactic analysis presented below. Two other glyph blocks (A3, D4) are also identical, but consist of a single sign.

Next in length is the text on the PMY jaguar (**figure 6.5**), with two columns and eight rows of glyph blocks, for a total of 16 glyph blocks. The columns are paired. As Coe (1976:115) notes, the glyphs show graphic affixing. There is a total of 24 separate signs, none of which is repeated in the text elsewhere; there are seven glyph blocks with

two component signs (A1, B1, A2, A4, B4, A5, B7, A8), and the rest are composed of a single sign. Of the ones with two component signs, however, at least one may have been separated into two signs due to convention (A2), since there is iconographic evidence discussed briefly which suggests that the two signs are in fact a single iconic motif. In another case (B1) the two signs may also be part of the same iconic referent.

The JM spoon (**figure 6.7**) has a single column of eight glyph blocks, there is a total of 16 separate signs, and a total of 12 distinct signs: three glyph blocks consist of three signs (A3, A7, A8), two consist of two signs (A1, A4), and three consist of a single sign (A2, A5, A6). In the case of A1, however, it may very well have consisted of three signs, as suggested below.

The UNP clamshell (**figure 6.9**) has a single column of eight glyph blocks, like the JM spoon. There is a total of 10 separate signs, none of which occurs more than once (one iconic element, infixed in the cheeks of A1 and A5 is present twice): one glyph block consists of three signs (A6), and the rest all seem to consist of a single sign (although A2 has an infixed “polished surface” icon almost identical to one occurring at C3 on the Pearlman Conch Shell, which is probably not a phonetically-coded sign, but simply a semantically-coded one, i.e., POLISHED.SURFACE). I treat T168:518 to be a single sign in these texts: as Stuart (1995) has shown for the Classic examples of T168:518, there are good grounds for regarding them as an iconic unit, suggesting that cases where one is shown (T168) and the other is not (T518) are cases of graphic overlaying of a sign over T518.

There are some important characteristics of the signary that need to be explored in more detail in future works. Grube (1994:179) has pointed out that during the Classic period

syllabic signs were used over longer periods of time than logographic signs. The average life of a logographic sign in [Classic] Mayan writing was nine katuns [or 180 years]. In contrast, the average duration of use of syllabic signs was twenty and one-half katun periods [or 410 years]. These data show that Maya scribes more easily invented new logographic signs than syllabic signs.

The data presented here support Grube's conclusion. To my knowledge some of the probably logographic signs I have identified in this signary are unattested in the much larger and diverse Classic signary. Others may be attested just once or twice in the hundreds or even thousands of Classic texts, suggesting that they were discontinued or replaced by other signs.¹⁰⁹ However, many may not have disappeared at all but simply changed dramatically in form to the extent that their Classic counterparts may remain unrecognized as such for some time to come.

I disagree with some of Grube's (1994) conclusions about the history of various signs and conventions. For instance, the DO pectoral contains an example of T757 **B'AH/b'a**. This sign had two logographic values: one of them purely iconic, **B'AH** 'gopher' (the sign depicts a gopher's head); the other purely symbolic, **B'AH** 'self/head/top/image'. In a practical sense the second logographic value is simply a phonetic usage of the first logographic value; however, it was a phonetic usage applied consistently to the lexical item *b'ah 'self/head/top/image', and probably became logographic for that reason. T757 also had a purely phonetic value with the reading **b'a**. Grube argues that this last usage of T757 is not attested until after A.D. 652. Nevertheless, the example in the DO pectoral points to this purely phonetic value, rather than either of the logographic ones, suggesting its phonetic usage by ca. 300 B.C.

6.4. Dating. The stylistic and paleographic arguments for the relative dating of the DOPS are quite detailed and interconnected, and do not directly advance the most immediate objectives of this chapter, namely, the structural and linguistic analysis of the DOPS texts. For this reason I have relegated them to **addendum 2**. For now suffice it to say that the iconographic evidence strongly supports Coe's (1973, 1976) identification of

¹⁰⁹ There is of course another possibility: the subject matter of the Late Preclassic texts discussed here may be different enough from that of later texts to account for differences in the glyphs attested. Nevertheless, the analysis of the subject matter of these texts provided in this chapter suggests this is not the case.

the DO pectoral and the PMY jaguar as Izapan, at least in the thematic sense, and therefore early Late Preclassic in age (by his estimate, ca. 300 B.C.-A.D. 1). The JM spoon may also date to the early Late Preclassic period, though it may postdate the DO pectoral and the PMY jaguar, but the UNP clamshell, I argue, is likely late Late Preclassic in age.

More specifically, in **addendum 2** I provide detailed arguments for close stylistic correspondences between the DOPS texts and the writing and art from Kaminaljuyu, Abaj Takalik, and El Baul, especially with materials dating to ca. 400-100 B.C. More generally, there are a series of stylistic and calligraphic traits that point to an early age for these texts but which do not necessarily allow one to provide an accurate dating. These include: (1) the angularity of incised motifs, characteristic of Late Preclassic Kaminaljuyu writing and Late Preclassic Epi-Olmec texts, but not of Protoclassic and Early Classic Lowland Mayan texts; (2) the double-outlining convention, attested as late as the mid-fourth century A.D. in the Mayan lowlands at Tikal and Copan but not subsequently; (3) the complete absence of U-elements inside glyphs in the DO pectoral text, pointing to a very early date for this text; (4) the presence of U-shaped and double-stub elements in the PMY jaguar, pointing also to an early relative date; (5) the complete absence of O-shaped elements as substitutes for U-shaped elements, also a feature suggesting a pre-.A.D 529 age; and (6) a tendency toward iconic stylization and simplification rather than toward iconic transparency and elaboration, as is more characteristic of Early Classic and Late Classic texts. The distribution of features such as the use of U-elements, graphic stylization, and the angularity of incised lines suggest a relative dating of the DOPS texts as follows, from earliest to latest: DO pectoral > (PMY jaguar/JM spoon) > UNP clamshell. And the DO pectoral in particular may be roughly contemporaneous with Kaminaljuyu Stelae 10 and 11, dated to ca. 400-100 B.C.

There are also paleographic arguments, which I intend to present in full detail at a later time, suggesting a Late Preclassic date for all four of these texts, such as: (1) the use

of the T130 (DO pectoral) and T517.130 forms (JM spoon, UNP clamshell) of the T168 **7AJAW** graphic superfix, attested as late as A.D. 120 in the DO celt text but already discontinued by A.D. 197 in the Hauberg Stela, which uses T517.584¹¹⁰; (2) the use of the single-bracket-and-two-dots design of T1 **7u** in the DO pectoral, the BMA mask, the CNT 6125 texts, and the DO celt dated to A.D. 120, unique to these texts but incorporating a triangular element in between the dots in examples as early as A.D. 197 in the Hauberg Stela; and (3) the use of a MOUNTAIN/PLATFORM sign that shows close iconographic relationship with MOUNTAIN/PLATFORM symbols from Middle Preclassic Olmec-style iconography and with Late Preclassic MOUNTAIN/PLATFORM signs from Oaxaca and the Mayan highlands. All the sign forms of the DOPS are consistent with the earliest known Classic equivalents (e.g., T17 **yi**, T23 **na**, T24 **li**, T116 **ni**, T124 **tzi/TZIK**, T126 **ya**, T130 **wa**, T503 **7IK'**, T617 INITIAL.SIGN, T671 **chi**, T740 **hu/SIJ**, T757 **b'a/B'AH**, T841 **7AK'AB'/7AK'B'AL**) but the cases of T517.130, T1, and MOUNTAIN/PLATFORM alluded to above and described in more detail in the next section, are probably the forms that may be most successfully used to classify a text as Late Preclassic or Protoclassic. That does not mean that undated early texts with a different version of T1 **7u**, for example, may not be Late Preclassic: the DO celt text itself

¹¹⁰ Two examples are present in the Xukpi Stone at Copan, a text proposed by Schele, Grube, and Fahsen (1994) to date to A.D. 437. One shows T517.130 on top of the right half of T518. The second shows STAR-T130 on top of the right half of T518. Nevertheless, on stylistic grounds this text seems significantly earlier than A.D. 437, especially when compared with contemporaneous texts elsewhere in the Mayan lowlands. The alternative is of course that Copan may simply have had a regional style that preserved more archaisms than other regional styles. In this respect it is interesting to note Fahsen's (1996, 2000) suggestion that the Copan elite lineages may have arrived in the Copan Valley around ca. A.D. 200 possibly from Kaminaljuyu in the Mayan highlands as a response to a possible invasion of Kaminaljuyu by foreigners. If this in fact happened, it is possible that the Copan scribal style may have been brought from Kaminaljuyu, accounting for its differences with respect to contemporaneous CLM texts. While all contemporaneous glyphic evidence to date suggests that writing started at Copan with Yax K'uk' Mo', the founder of the royal dynasty, ca. A.D. 426, a few texts at Copan (e.g., Copan Stela I) retrospectively mention events that took place earlier than that. Some of these, such as the celebration of katun-endings, imply the presence of a priestly group at Copan by ca. A.D. 159 (Grube and Martin 2001).

contains two different versions of T1 **7u**, one at A7a conforming to the one attested in the DO pectoral, BMA mask, and CNT 6125, and the other more closely related graphically to T3 **7u** at B3b, although still lacking the intervening triangular element. It only means that a text with T517.130 and the No. 141 version of T1 **7u** are very likely to be Late Preclassic. All four texts of the DOPS may predate the DO celt text, from A.D. 120; although the UNP clamshell shows a very similar rendering of T518 as that in the DO celt, it shows more stylistic, calligraphic, and orthographic similarities in general with the other DOPS texts.¹¹¹

With regard to the BMA mask text and the CNT 6125 text, the following can be said. First of all, the two are more closely related to one another than either is to any other text based on the form of the T757 **b'a/B'AH** sign, which is unique to these two texts. Though neither contains calendrical data, making it impossible to attribute this form of T757 to an absolute point in time, the form of T757 and of the rest of the signs present in the texts suggest an early date. CNT 6125 uses the first design of T124, which as pointed out by Lacadena (1996:255) may have persisted from ca. 236 B.C. (the earliest possible date of Abaj Takalik Stela 2) to A.D. 393 with very little modification. So at the latest CNT 6125 may date to ca. A.D. 393, still within the Protoclassic as recently redefined (70 B.C.-A.D. 400).

Another important attribute is the example of T548 **HAB'/TUN** present in the CNT 6125 text at A1b: it is very similar to that on the Hauberg Stela at A1c, dated to A.D. 197, and to that on the DO celt at B2c, dated to A.D. 120. The DO celt also shows

¹¹¹ Interestingly, though this is a subject of a future paper, the text on the UNP clamshell may be closely related in calligraphic and orthographic details to the later unprovenanced Pearlman conch shell (PRL conch) text, possibly dating to ca. A.D. 360-400 based on a preliminary paleographic analysis still underway. The PRL conch text could be a direct descendant of the DOPS: the length and format of the text (24 glyph blocks, arranged in four columns and six rows) is identical to that on the DO pectoral, while many of the calligraphic and orthographic practices are closely related. Given the absence of contemporaneous Early Classic texts in the same style, format, and calligraphy as the PRL conch text, it is possible that the DOPS and its possible descendants may have been a regionally-defined subtradition.

at B2a a similar rendering of the numeral FOUR to that of the CNT 6125 at A1a, although this rendering of FOUR is attested in two Early Classic texts from Yaxchilan and Tikal as well as already noted by Fields (1989). Of course, the form of T1 **7u** on the BMA mask and the CNT 6125 is only attested otherwise in the DO pectoral, pointing to an early date. Lastly, the BMA mask text has at A4b a form of the PENIS glyph that is otherwise only attested in the DO celt. The remaining signs (e.g., T24 **li**, T62 **yu**, T585 **b'i**) all conform to the earliest Early Classic forms, and for that reason do not provide a particularly useful diagnostic. Based on these lines of evidence I would argue that the BMA mask and the CNT 6125 are only slight later than the DO celt, with the CNT 6125 in particular closer to the Hauberg Stela in its rendering of T548 **HAB'/TUN**. A rough dating of A.D. 100-200 is therefore quite reasonable.

I conclude that the DO pectoral may be the earliest text of the DOPS: it may date to as early as 300-100 B.C. The PMY jaguar and the JM spoon may postdate the DO pectoral. An educated guess for now will have to suffice for their dating: ca. 100 B.C.-A.D. 1. One important feature supporting a later date for these two texts with respect to the DO pectoral is their use of U-shaped and double-stub elements, which the DO pectoral lacks in its entirety. It is not possible based on current evidence to say which of the two, the PMY jaguar or the JM spoon, is earlier than the other. However, the UNP clamshell can be argued to be the latest of the four, dating perhaps to ca. A.D. 1-150: it is clearly later than the PMY jaguar and the JM spoon, but may be earlier than the DO celt (A.D. 120). Lastly, the BMA mask and CNT 6125 texts may postdate the DO celt but predate the Hauberg Stela. A dating of A.D. 100-200 is quite possible. The deposition of the PMA flare has been broadly dated by Justeson, Norman, and Hammond (1988:108) to A.D. 1-250 based on its archaeological context, though these authors suggest a more narrow dating of ca. A.D. 200-250 based on the epigraphic evidence. It only contains two signs that are present on the DO celt: T51 **ta** and T24 **li**. They correspond closely in calligraphic style, but these forms of T51 and T24 survive into the Early Classic, and

hence do not provide solid diagnostics. The only narrow marker that the two share is the inverted orientation of T51, which dates to the first half of the Early Classic period (Justeson, Norman, and Hammond 1988). The PMA flare text lacks evidence of double-outlining present in all the texts of the DOPS and in the BMA mask, the CNT 6125 text, and the DO celt too; and also, it shows the beginnings of the detailed iconographic elaboration of graphemes characteristic of the Early Classic script. I would thus place the PMA flare in the second half of the A.D. 1-250 range, and closer to A.D. 150-250. It may thus be the latest of the texts discussed in this chapter.

6.5. Glyphic Identifications. The study of what I define here as the DOPS started with Coe's (1966) description of the DO pectoral. Most of his glyphic identifications have stood the test of time. They include: (1) B1a as T843 STEP; (2) B1b as T671; (3) B3 as REED; (4) A5 as same sign at A7b in the Leyden Plaque (T644); (5) C6b as T504/841 7AK'AB'/7AK'B'AL; (6) A1b and C6a as T126 (Coe's T125, a similar but orthographically unrelated sign); and (7) B6 and C2-D2 as the name of the seated personage. Coe correctly matched the outline of D6 with Classic T88 **hi/ji**; however, I argue below that it actually corresponds to T24 **li**, whose earliest form was identical in outline to T88.¹¹² The most important of Coe's identifications, from a syntactic point of view, is the identification of the name of the portrayed seated personage (**figure 6.21**). He suggested that B6b and D2 is an example of a MUWAN 'hawk' glyph, but there is some doubt on this regard. For one, the glyph lacks the feathers-in-the-mouth motif that is generally assumed to be diagnostic of the MUWAN sign. Also, while B6b

¹¹² Coe (1966:16) concluded that the text "is written in Maya fashion, is basically non-calendrical, and refers twice to the seated personage. It is not unreasonable to suppose that, like the Classic Maya inscriptions, it refers to one or more important events in the life of that individual, or to his lineage." He added regarding the possible relationships between the script with other known scripts: "The glyphs are Mayoid in style and show resemblances to signs in the earliest writing of Monte Albán, Kaminaljuyú, and the lowland Maya." He emphasized the differences with the first two of these early scripts, however, and concluded that it was more likely related to the lowland Mayan script.

and D2 do resemble the **MUWAN** head form in every other respect, they also resemble the **CHAN** head form (**figure 6.21d**), which is identical to the **MUWAN** sign (i.e., it is the same bird species) except for the feathers-in-the-mouth motif. However, this does not resolve the problem. On Piedras Negras Stela 3:F5, a ruler's name is spelled (**mu-**)**MUWAN**, with the preposed phonetic complement securing the reading of the logograph as **MUWAN**, yet the glyph lacks the feathers-in-the-mouth motif. For this reason I use the neutral label **HAWK** in reference to B6a/D2.

Coe's identification of B3 in the DO pectoral as T340 REED(.TASSEL) (**figure 6.22a**), and as the centerpiece of the jeweled headband on the Tikal Burial 85 jadeite mask (**figure 6.23c**), is also confirmed by epigraphic and iconographic evidence. For one, the form of B3 (T696?) matches very closely the forms of REED day signs in various Mesoamerican scripts (**figure 6.22b**). While at first it is not clearly identical to T584, the Classic Lowland Mayan REED day sign, the DO pectoral example shows a diagonal band (**figure 6.22a**) which is also present in another REED sign present on a looted Early Classic jadeite turtle shell pendant (**figure 6.22c**) discussed by Schele and Grube (Schele 1994:89). In both cases the REED sign takes what in Classic times corresponds to phonetic T60 **hi** as a graphic suffix. Also, the diagonal band element in the jadeite turtle shell example resembles closely the diagonal band element of T518 in the title **7AJAW** (**figure 6.22e**), which in turn resembles the Terminal Late Preclassic or Protoclassic version of T584 REED from the Uaxactun murals (**figure 6.22d**). Stuart (1992) has in fact proposed that the REED day sign is iconographically related to T168:518 **7AJAW**, which seems to depict, as he explains, a jade bead assemblage imitating a flower. The example of **7AJAW** with T518 in **figure 6.22e** also takes T60, the CLM phonetic **hi** sign, just like the REED signs.

Was the REED part of the **7AJAW** sign purely metaphorical in function, or did it have an orthographic function in spelling **7AJAW**? The example shown contains already a likely phonetic sign, T130 **wa**, as the second half of the superfix: T517.130:518:60.

The earliest example of T168:518 **7AJAW**, that in the DO pectoral at B5, shows only T130 **wa** and the right half of T518 (**figures 6.24a**); a very similar form was preserved in the Early Classic period at Copan as late as A.D. 437 (Schele, Grube, and Fahsen 1994) (**figure 6.24b**). If one pays close attention to details, one can see that the earliest form of the Mayan REED day sign in **figure 6.22d** is very similar to the early form of T518 in **figure 6.22e**: the two contain a diagonally-oriented band on the right side and a horizontally-oriented stub on the left side. At the same time, the much earlier form of the REED sign in **figure 6.22a** shows only a diagonal band, with no horizontally-oriented stub; this parallels the also much earlier form of T518 in the same text shown in **figure 6.24a**, which contains only a diagonal band and no horizontally-oriented stub. Thus, I think one can conclude that in the DO pectoral the REED sign matches the T518 sign iconically, suggesting the two had a common origin.

Now, given the proto-Mayan term *7aaj ‘reed’. I think it is possible that this term may have been retained in Ch’olan-Tzeltalan and Yukatekan and that it may have been the linguistic sourceword for T518 and the full-form REED sign. This is supported by the use of T60 **hi** as a suffix in REED-**hi** (**figure 6.22a**) and T517.130:518-**hi** (**figure 6.22e**), if one supposes it once had the reading **ji** as well, and that it may have functioned as a phonetic complement to **7AJ**, as **7AJ(-ji)**.¹¹³ If T518 did represent **7AJ** ‘reed’, as proposed for T584 by Frumker (1993), then T130.518, the form of T168:518 in the DO pectoral, may very well read **wa-7AJ** or more to the point, **7AJ-wa** (or perhaps **7aj-aw**, if commutativity for T130 **wa** is assumed), for *7ajaw.¹¹⁴

¹¹³ Tentative support for the reading **7AJ** for the T340/696 REED sign comes from an example of the phrase **NA7-T696-K’IN** in a pot from Tikal dating to the Manik I phase (A.D. 200-300) and illustrated in Laporte and Fialko (1987:Figure 25). If read T696 reads **7AJ**, acrophonically based on a descendant of proto-Mayan *7aaj ‘reed’, one would get **NA7-7AJ-K’IN** ‘lady/mother priest’, a term otherwise attested as **NA7-T12-K’IN(-ni)**, where T12 is the more common sign for **7AJ** 7aj+ ‘male proclitic’.

¹¹⁴ Another possibility is that REED-**hi** points to a reading *puh ‘cattail reed’, as **PUH(-hi)**; however, the REED sign in the DO pectoral is not iconically a CATTAIL.REED, nor would such a reading explain the spelling T517.130:518:60 (**wa-T518-hi**) for **7AJAW** in **figure 6.22e**.

Another important observation by Coe (1973:25; 1976:115) is his matching of the glyphs at B2 and C1 on the DO pectoral with that at A1 in the PMY jaguar. Schele and Miller (1986), Fahsen (1987, 1988a), Reents-Budet and Fields (1990), and L. Anderson (1993) have identified more examples of this same glyph in other Late Preclassic and Early Classic texts. The following are all the cases known to me (**figure 6.25** and **figures 4.7a,b**): B2/C1 in the DO pectoral; A4 in the JM spoon; A1 in the PMY jaguar; A1 in the UNP clamshell; glyph F on the El Bellote pot (Easby and Scott 1971:Figure 76); A3 in the Protoclassic Kendal jadeite bivalve shell effigy earflare, henceforth KND bivalve (Schele and Miller 1986:plate 10); D2 in the Early Classic Pearlman conch shell trumpet, henceforth PRL conch (Coe 1982:; Schele and Miller 1986:plate 121); and on two carved ceremonial plates illustrated in Berjonneau and Sonnery (1985:351, 355).

Ayala (1983:201-202) summarized Coe's findings and added some observations of her own, including the possible match between A3 and D4 in the DO pectoral with T1023 **pa**, the fact that C6c in the DO pectoral also appears in the HTZ axe at A6b, and she also matched D6 in the DO pectoral with A7c in the DO celt. I agree with these observations, and below I discuss A3/D4 of the DO pectoral in more detail.

Schele and Miller (1986:119-120) have proposed that A5-B6 constitute an accession statement with A5 **SIT/SEATED** as the verb, B5 as **7AJAW**, and A6-B6 as a title and name of the person who acceded. They thus read the clauses as 'he was seated as king', based on Classic period clause such as **CHUM-la-ja ti-7AJAW-le-le [RULER]** '[Ruler] sat as lord'. Below I refine the interpretation of this DO pectoral passage, but I agree with Schele and Miller in that it basically refers to a 'seated lord'.

Some very important epigraphic and iconographic work on the DO pectoral and the PMY jaguar has been carried out by Fields (1989). Fields (1989:111) has correctly identified the iconic motivation of the **CROSSED.BANDS** sign at B6a and C2 in the DO pectoral as a representation of the royal headband based on Olmec-style iconographic depictions of jewel-bedecked headbands on gods and nobles (**figure 6.26**). She also

proposes A2 from the PMY jaguar as a variant of the **CROSSED.BANDS** sign in the DO pectoral. Based on this, and the clear iconographic relationship of this headband motif with the **JESTER.GOD** motif (**figure 5.3, figures 6.27 and 6.28**), a symbol of rulership par excellence, she argued that B6a/C2 in the DO pectoral is an early **7AJAW** 'lord, ruler' glyph. I agree with Fields's iconographic argument regarding the iconicity of the sign and its iconic relationship to the **JESTER.GOD** royal symbol and the T533 **7AJAW** sign, but I think the **CROSSED.BANDS** sign has a different reading in this context: **FLOWER**. Demonstrating this requires detailed argumentation, but the following sketch provides the basic points.

First, in the Classic period T533, the basic **7AJAW** 'lord, ruler' glyph, had four different readings depending on context (and on phonetic complements if present) and on graphic modifications (**figure 6.29**). The plain T533 (**figure 6.29a**) has three readings: **7AJAW** 'lord, ruler', **NIK/NICH(IM)** 'flower', and possibly a reading **NICH'(AN)** presumably to represent a form of the kinterm **nich'an* known from Tzeltalan, meaning 'child of father' (Grube 1992; Hopkins 1991; Justeson, personal communication 2001; Schele and Mathews 1983; Stuart 1997).¹¹⁵ The first two concepts are related metaphorically in Mesoamerican thought (Stuart 1995), and for this reason the relationship between the two readings of the sign is not an entirely arbitrary one. The third reading, as a parentage statement, may have been a more (phonetically and conceptually) arbitrary one, though perhaps not so much to the Mayan scribes who used it almost exclusively to refer to the parentage of lords and rulers. The capped version, T535 (**figure 6.29b**), with or without the topping volutes, has the readings **NIK/NICH(IM)** 'flower' and **?NICH'(AN)** 'child of father' (Grube 1992; Justeson, personal communication 2001; Stuart 1997), and is basically interchangeable with the T533 version when it has either of those two readings. It was never used, to my knowledge,

¹¹⁵ The precise reading of the T533 sign in its kinterm context is not completely clear. The spellings with postposed T23 **na** could in fact suggest the **nich'an* term.

with the reading **7AJAW** ‘lord, ruler’. The leafy version (**figure 6.29c**), characterized by three leaf-like elements emerging from the top of the T533 sign, has the reading **HUN**, as suggested by substitutions with the **JESTER.GOD** glyph (**figure 6.30e**), with which it is iconically and orthographically equivalent, and by the use of T23 **na** as a likely phonetic complement in both textual and iconographic glyphic usages (**figures 6.30c-e**). Thus the leafy version of T533 and the **JESTER.GOD** share a three-pronged leaf-like or sprout-like motif emerging from the top, as described by Fields (1989). The top of the **JESTER.GOD** motif is often shown iconographically as the outline of T533 (**figure 5.3d**, **figures 6.27a,b,d**), which in the Late Preclassic and Classic periods had two main designs: an oval shape (**figure 5.3c**, **figure 6.27f,g**) and a pear shape (**figure 5.3d**, **figure 6.27a,b,d,e,f**). The former, the oval-shaped T533, corresponds to T517, but its emerging volutes or sprouts show that it is iconographically a form of the **JESTER.GOD** royal headband, and therefore, iconically a **FLOWER** motif, as suggested by Stuart (1992, 1995). The oval shaped design therefore could have either the **CROSSED.BANDS** element (**figures 6.28a,c**) or the U-shaped element (**figures 6.28e,f**) as an infix and still refer to the same entity (a jewel); when shown with two leaf-like projections or volutes, they were graphically and functionally equivalent to the pear-shaped T533 whenever it was shown with two leaf-like projections (**figures 6.28b,c**). Since this is basically the diagnostic form of the T535 **NIK** ‘flower’ sign (**figures 6.29a,b**), I think that all the signs in **figure 6.28** are read **NIK** ‘flower’. The last one (**figure 6.28f**), is read more specifically **NIK-TE7**, with T646, phonetic **te**, infixed in the T517 oval.

Thus, the three-pronged version of the **FLOWER** motif, whether as T533 or T517, can be regarded as having the reading **HUN** ‘royal headband’¹¹⁶: the two-pronged version as **NIK/NICH(IM)** ‘flower’ or **NICH’(AN)** ‘child of father’, with the second reading indicated by a prefixed third person ergative/possessive marker 7u- in the Classic texts;

¹¹⁶ More specifically, ***hun** ‘paper, book’, but the term was apparently extended to mean ‘headband’ or even ‘headdress’, given that the iconographic referents of the entities named **HUN** in Classic texts sometimes do not correspond to entities made of paper.

and lastly, the plain T533 sign, in both its earlier pear-shaped and later oval-shaped versions, as **7AJAW** ‘lord, ruler’ and possibly also **NIK/NICH(IM)** ‘flower’ and **NICH’(AN)** ‘child of father’, though this second usage is still not clearly attested with the pear- and oval-shaped forms of T533, only with the circular Classic version. Consequently, the signs at B6a and C2 in the DO pectoral, and A2 in the PMY jaguar likely have the same reading, **NIK** ‘flower’, given that they are not prefixed with **7u** for **7u-** ‘third person ergative/possessive prefix’, which would have suggested the reading **NICH’(AN)** ‘child of father’, and given that they are iconically related to the prototypical **7AJAW** ‘lord, ruler’ sign, T533.

Finally, T534, in form an inverted version of T533, has the phonetic reading **la** (**figure 6.29d**). Iconically it is a depiction of a bead that forms part of bead assemblages that imitate flower arrangements. As Stuart (1992, 1995) shows, all pictorial depictions of bead assemblages in Mayan art are imitations of flowers and floral arrangements. This in turn shows that T534 is in fact related iconically as well to the other forms of T533.

Another very important set of identifications by Fields (1989:56, Figure 43) includes C5b (**figure 6.31a**) and C6 in the DO pectoral as T712 and T841, respectively. These two glyphs commonly occur as part of the same phrase in possible references to sacrifice (see Chapter V: **figures 5.7b,c, 5.13a-f, 5.16-5.20**). In Mora-Marín (1995a, 1995b, 1996, 1997a, 1997b) I have suggested also that: D5 corresponds to the outline of T757 **B’AH/b’a** (**figure 6.32**), a sign also common in the phrase including T712 and T841; C5a might be iconically a jade bead (**figures 6.31a,c**), and therefore a possible variant for **7u**, which very frequently is prefixed to T712 (**figure 6.31b**); and D6 might be T24 **li/IL** (**figure 6.33a**), which also very frequently follows T841 (**figures 5.13f and 5.19b**). Here I assume the correctness of these identifications. I revise my earlier interpretation in Mora-Marín (1995a) of the function of T757 in the DO passage below.

As already mentioned, Coe (1966) and Ayala (1983) both suggested B1 in the DO pectoral could be a match with Classic T843 STEP. Following up on this idea, and with

the benefit of very detailed work on the dedicatory formula of pottery texts already conducted by that time, Freidel and Schele (1989:236) have argued that A1 and B1 of the DO pectoral (**figure 6.34**) correspond to the T617 INITIAL.SIGN and the T843 STEP glyph of the PSS (**figures 4.4j-o, 4.8b,d,f,g**). I also agree with these identifications and discuss them in detail below.

L. Anderson (1993) has attempted a structural analysis of the DO pectoral, the JM spoon, the PMY jaguar, and the UNP clamshell in which he proposed the function of the BEARDED.GOD glyph as a verb, based on its text- and clause-initial contexts. He also assumes Fields's (1989) identification of B6a and C2 in the DO pectoral as equivalent to A2 in the PMY jaguar, and identified glyphs A7 in the UNP clamshell, B4 in the PMY jaguar, and twice at A3 and A8 in the JM spoon as T168:518 7AJAW 'lord, ruler' glyphs; Fahsen (1987) previously had identified B4 in the PMY jaguar as this title too. Lastly, L. Anderson also noted that A3 and D4 in the DO pectoral is the same glyph as A2 in the UNP clamshell text. I agree with these suggestions by L. Anderson by and large, but I add minor revisions below.

In Mora-Marín (1995b, 1996) I made the following observations and proposals. I argued that the BEARDED.GOD occurring in all four texts corresponds to a bearded version of the Classic GOD.N glyph: the unprovenanced carved bowls examples are especially useful because they contain examples of the GOD.N glyph with transitional traits resembling both the forms in the DOPS texts and those in Late Classic texts (**figures 4.6-4.10, 6.25**). I that this BEARDED.GOD.N glyph functioned as a dedicatory verb, adding to the dedicatory expressions identified by Freidel and Schele (1989), and that the glyphs that immediately follow this possible verbal glyph in the DOPS texts were the patients of the verb and possibly referred to the inscribed objects (or parts of the inscribed objects) themselves, followed by the agents of the verb in four out of five occasions.

I identified A2a as either an early form of T57 **si** or T89 **tu**, and A2b in the DO

pectoral as T740 IGUANA, a sign with the logographic reading **SIJ** for sihj 'be born' and the phonetic reading **hu** (figure 6.35).¹¹⁷ I also suggested the presence of the titles MOUNTAIN-LORD in the JM spoon and the PMY jaguar, as well as in KJ 10 (figure 6.36); these identifications are supported by the iconic motivation of the proposed MOUNTAIN/PLATFORM sign, which corresponds to the representation of mountains in Late Preclassic Oaxacan and Highland Mayan art (figure 6.37), and by the existence of the CLM epithet base **WITZ-7AJAW** 'mountain lord', which nonetheless uses a different MOUNTAIN glyph than that in the Late Preclassic texts (figure 6.38).

In Mora-Marín (1996) I also suggested that A7a in the JM spoon (figure 6.39a) may correspond to a glyph in a jade earplug from Kaminaljuyu (figure 6.39b), and more recently I have noted a possible correspondence with a Late Classic example on a looted pot. K1398 (figure 6.39c); this last example appears in a context suggestive of a phonetic **li** value, and could therefore correspond to the **li** sign in the form of a HAWK deciphered by MacLeod (1990) and Grube (1991).

In Mora-Marín (1995b, 1996, 1997a) I proposed the identification of two early versions of T832, a glyph that refers to a wäy 'animal spirit/coessence' creature (Grube and Nahm 1994). One occurs in the PMY jaguar at A3 (figure 6.40a) and the other in the KCH bone at A6 (figure 6.40b).¹¹⁸ The glyph may correspond to T832 in CLM texts, whose spelling patterns (figures 6.41c-e) suggest a reading **b'u-la-yu**, seemingly for **B'ULAY**, although the modern reflexes of this word suggest a proto-Ch'olan

¹¹⁷ A2 may correspond to **tu-SIJ**, interpretable as t-u-sihj(-il) PREP-3sERG-birth 'for/at his/her birth'. A possibly similar phrase appears on Piedras Negras Stela 12:B21 as **tu-SIJ-li/na**.

¹¹⁸ I also suggested in Mora-Marín (1995b, 1996, 1997a) a possible relationship between A5 in the KCH bone and the **B'AK-le WAYAL** glyph in CLM texts (e.g., G3 in Tablet of 96 Glyphs): A5 shows a skeletal jaw, suggestive perhaps of **B'AK** 'bone' (figure 6.40c, first glyph), and the human head exhibits the traits that characterize the **WAYAL** head (figure 6.40c), including the rope-like ornament on his head, an earflare, a circular eyebrow element, and a circular forehead element. However, this is not conclusive and the identification of A6 as T832 does not rely on it.

reconstruction *b'o7lay (Kaufman and Norman 1984:117).¹¹⁹ As shown by Grube and Nahm (1994:687-688), this creature was one of several feline animal spirits, referred to by the term wāy (Houston and Stuart 1989).

In addition to a possible T832, there is another glyph, this time at B1a in the PMY jaguar, that may refer to a jaguar creature, quite likely the jaguar figurine itself. Indeed, as already explained, the PMY jaguar figurine depicts a seated jaguar with a sprout-like feature on its head (**figure 6.42**). At B1 in the text on the back side of the figurine one finds two signs (**figure 6.43**): a SPROUT sign and a generic head (see Chapter III). This SPROUT element is in fact present on the head of a feline way creature (**figures 6.44 and 6.80c**). I think that it is this type of feline, named **BUTZ'-HIX** in a Classic text (Grube and Nahm 1994), that may correspond to the feline portrayed in the PMY jaguar figurine.

As already mentioned, Coe (1966) suggested that B1b in the DO pectoral was a

¹¹⁹ The spelling pattern **b'u-la-yu** is problematic, since there is a known sign **b'o** that could have been used instead of **b'u** in a spelling **b'o-la-yu** for *b'o7lay. It is possible that T23 **b'u** had the reading **b'o** as well, though this is just an hypothesis. As suggested to me by John Justeson (personal communication 2001), it is also possible that a SPOTTED.JAGUAR (i.e., *b'o7lay) sign could have been used as a rebus for an intended term b'u(G)lay, which is what the actual glyphic spellings suggest. It is possible that the term *b'o7lay may have consisted of two morphemes: b'o7l-ay, where -ay could be cognate with a participial suffix attested in Colonial Yukatek as <-ay>, as in the following examples from Smailus (1989:137): <zat-ay> 'thing that gets/is lost' from <zat> '(vt) to lose' and <lot-ay> 'stirred up thing' from <lot> '(vt) squeeze in between the hands'. If so, then b'o7l is some sort of verbal root, whether transitive or intransitive or positional. The same would be true of a hypothetical root b'u(G)l if the intended word was b'u(G)l-ay. A word b'ul, which appears to be a positional root, is attested in Modern Ch'ol (Aulie and Aulie 1978:34): b'ul-täl 'abultadamente (in a stacked manner)', b'ul-ul 'abultado (stacked)'. Interestingly, Modern Ch'ol (Aulie and Aulie 1978:33) also has a term b'ol-täl 'hill'. (On a more speculative vein, this word appears to be semantically linked to b'ul-täl and b'ul-ul. If the roots b'ul and b'ol are indeed related, *b'o7lay and (the hypothetical) *b'u(G)lay may have been related too. If so, T832 **B'ULAY** may have had roughly the same meaning as *b'o7lay.) Another alternative is that the hypothetical word *b'u(G)lay could consist of a root b'u(G)l related to Modern Tzotzil (:24) b'ul-el '(vn) arrancar, arrancarse, caerse (rip/tear off/apart, fall)', used transitively (e.g., ta s-b'ul '(vt) s/he/it rips/tears s/he/it off/apart') or intransitively (ta x-b'ul '(vi) it rips/tears off/apart'). Such a meaning might explain the fact that T832, the SPOTTED.JAGUAR sign, shows a jaguar whose head has been cut or ripped off. If correctly identified as b'u(G)l 'to rip/tear off/apart', then the hypothetical form *b'u(G)l-ay might mean 'ripped off thing', which is a good description of the iconic form of T832.

form of T671 (**figure 6.45a**). T671 has the phonetic reading **chi** and the logographic reading **MANIK** 'day name'. In Mora-Marín (1995b) I suggested that B8 in the PMY jaguar also corresponds to T671 (**figure 6.45b**). While the context of this T671 sign in the PMY jaguar is not clear, in the DO pectoral it is a graphic suffix to T843 STEP, a glyph that likely represents a dedicatory verb, as already mentioned. This context, by itself, is not conclusive evidence for the identification. Early Classic examples of the same sign substituting for T671 in the same context are more suggestive (**figure 6.45d-f**). Another example is important because like the DO pectoral case, it shows the proposed T671 **chi** sign as an apparent suffix to a verb, in this case **TZUTZ** 'to complete' (see Stuart in Schele 1991:85), a root transitive verb. The verb is inflected intransitively, as it lacks an ergative agreement marker and it follows T679 **7i/YUWAL**, which is never followed by transitively-inflected verbs in CLM texts. This suggests a similar function for the early form of T671 **chi** as in the DO pectoral, where the STEP verb is also intransitively inflected.

I proposed the reading **IV** or **la** for A1b, A7c, and A8d in the JM spoon, and A4b in the PMY jaguar as possible syllabographs (**figure 6.46a**). They may correspond to T138 **la** in Early Classic texts. In fact, the example at A4b in the PMY jaguar (**figure 6.46b**) may allow one to hypothesize how the double triangles may have developed into the T138 form (**figure 6.47c**): an initial triangular shape (**figure 6.46a**) may have become somewhat irregular on the bottom end (**figure 6.46b**), until that end became a separate element (**figure 6.46c**). I also proposed the reading **li** for A3d in the PMY jaguar, based on its formal identity with the **li** sign present in the Leyden Plaque and its agreement with the hooked T24 **li** sign (**figure 6.32**).

I have identified the T503 sign at A5 in the JM spoon as a reference to the spoon itself (Chapter V, **figure 6.14**); however, I have since revised my proposed reading for T503 in this context, from **NAL** 'maize ear' to **7IK** 'wind' (see below).

L. Anderson (1995), in an email letter in response to my interpretations (Mora-

Marín 1995b), made the suggestion that C4a in the DO pectoral may be T124 **tzi/TZIK** (figure 6.47a). I agree with this identification. He also suggested it functioned to introduce a month patron, what I assume he takes C4b to be. I disagree with this, and argue in Mora-Marín (1996) that C4 functions as a dedicatory verb and that the glyph that follows it at D4 refers to the dedicated object, likely to be the DO pectoral itself or some part of the pectoral. More specifically, I now think that C4b may correspond to phonetic T136[595] **no**, as I explain below: if so, C4 may match a verbal expression from the Late Classic period spelled T124:136[595] **tzi/TZIK-no** in the Chinikiha Throne (figures 6.47b,c). In this example, as well as in other uses of T136[595] **no** (figure 6.47d), it is likely that the n of **no** spells an antipassive verbal suffix -n and that the o may spell (only partially) either the future/potential suffix -om or the plural suffix -ob'. Indeed, the m of the -om suffix was not infrequently underspelled, as in the case of **7u-to** for **7u-to-ma** in the example in figure 6.48b. Below I weigh the two alternatives.

I have also identified C6a in the DO pectoral as T1 **7u** (figure 6.49f). Previous drawings of the DO pectoral text in Coe (1966), Schele and Miller (1986), and Mora-Marín (1997a) do not show this sign. However, upon close first-hand examination of the text with a magnifying lens at Dumbarton Oaks I realized that there are two dots inside the upper bracket of the T126 **ya** sign, providing the spelling **7u-y(a)-** (7)AK'/(7)AK'AB'/(7)AK'B'AL for C6 as a whole. This form of T1 **7u** agrees closely with the examples in the BMA mask at A1a and the CNT 6125 text at A3a and A4a (figures 6.49d,e). It is characterized by lacking the triangular element that intervenes between the two dots, as is the case in the Classic designs of T1 (figure 6.49a). At the same time, it agrees with the iconic referent of T1 in pictorial representations of bead assemblages (figure 6.49b) in lacking the triangular element.

A comparison between A3 and D4 of the DO pectoral and A2 of the UNP clamshell (figure 6.50) can help resolve the orthographic composition of this glyph. In Mora-Marín (1995b) I mentioned that while the proposal by various authors (Coe 1966;

Ayala 1983; Houston, personal communication 1994) that the sign in question matched T1023 **pa**, a generic head with cross-hatching on the cheek, is consistent with the DO examples, it is also the case that only the DO pectoral examples show cross-hatching: the UNP clamshell example lacks cross-hatching. In its stead, one finds the semantic classifier POLISHED.SURFACE infixed on the cheek: this classifier simply shows that the depicted entity is polished (**figure 6.50b**) and thus belongs to the class of objects that can be polished (e.g., obsidian, shell, jade objects). The style of the infix is almost identical to that on the Early Classic Pearlman conch shell (**figure 6.50c**), which shows a conch shell with a POLISHED.SURFACE infix. These two spellings suggest that the only diagnostic feature is the T-shaped element projecting from the forehead of the head. For this reason I have nicknamed this glyph the FOREHEAD glyph. This fact suggests, then, that the CROSS.HATCHING and POLISHED.SURFACE infixes are optional. The POLISHED.SURFACE infix is known to be a semantic classifier labeling icons depicting objects that can be polished, such as jade, shell, obsidian, flint, stone, etc. The CROSS.HATCHING infix is only known to have one interpretation: as phonetic T586 **pa**. In Mora-Marín (1996) I proposed that the spellings [**pa**]FOREHEAD in the DO pectoral suggest the use of phonetic **pa** as a phonetic complement.

Since then I have entertained the possibility, based on the T-shaped element that projects from the forehead, and the possible phonetic complement **pa**, and on the semantics involved, that proto-Ch'olan **pam* 'forehead' (Kaufman and Norman 1984:128) could be the term intended by the scribe.¹²⁰ Indeed, the term for 'forehead' would be more than appropriate to refer to an elongated and flat surface. In Tzeltal the term *pà[h]m*, with the infixed *-h-* of numeral classifiers, is used as the classifier for 'flat things' (Kaufman 1971:86). In Modern Ch'ol, the term *pam* means 'frente (de la cara); cima, vértice; patio', while the compounded term *pantun* /*pam=tun*/ means 'the surface of

¹²⁰ John Justeson (personal communication 1997) pointed out to me that *pam* 'forehead' also has the meaning 'surface' in Modern Ch'ol, and that this is not uncommon of words for 'forehead' in other Mayan languages.

the stone' (Aulie and Aulie 1978:91-92). This interpretation is supported by the fact that in the UNP clamshell the FOREHEAD glyph has a POLISHED.SURFACE semantic classifier infix, suggesting that it refers to a type of object that can be polished, such as a jade pectoral, and also by the fact that flat jade objects like these were sometimes worn on the forehead.

It seems possible that the FOREHEAD glyph, if representing the word **pam*, could be referring to the surface of the objects themselves: both the DO pectoral and the UNP clamshell texts are inscribed on flat, polished surfaces. The POLISHED.SURFACE sign infix into the FOREHEAD glyph in the UNP clamshell text could be an allusion to the polished state of the clamshell pendant itself. The 'forehead' connection could also have to do with the Mesoamerican practice of strapping polished objects, such as jade celts and mica or magnetite mirrors to the forehead, observations made to me by Marilyn Masson (personal communication 1999) and John Hoopes (personal communication 2001), respectively (figure 6.51). This could be what the T-shaped element on the DO pectoral and UNP clamshell glyphs suggest.¹²¹

Finally, in Mora-Marín (1996) I also suggested that D1 in the DO pectoral could be an early variant of the SPOTTED.BAT.HEAD glyph from CLM texts. I also argued that it probably functioned as a logograph for the incising or writing on the DO pectoral itself; I have subsequently found evidence suggesting that the CLM counterpart also functioned logographically (see Chapter IV). Below I discuss these and other glyphic identifications further.

6.6. Some Orthographic Conventions. The discussion of glyphic identifications has already raised the issue of orthographic conventions. So far it can be argued that the compositional and orthographic principles (see Chapter III) are the same as those of CLM, although I have yet to find secure examples of purely phonetic spellings of words.

¹²¹ Also of interest, the same type of mirror-shaped object could also be crafted in jade (Carlson 1993).

The following orthographic composition conventions may be attested: single-column (e.g., PMA flare, HTZ axe) and double-column formats (DO pectoral, PMY jaguar), graphic main signs (e.g., BEARDED.GOD.N) and graphic affixes (e.g., ni in BEARDED.GOD.N-ni), compounding (e.g., DIVINE-T505-7AJAW-la at A8 in JM spoon) and infixation (e.g., [pa]FOREHEAD and FOREHEAD[POLISHED.SURFACE]), overlaying of signs (e.g., FLOWER-HAWK at B6 in DO pectoral), semantic determiners (e.g., T-shaped element for 'forehead', POLISHED.SURFACE element), blank heads (e.g., SPROUT-GENERIC.HEAD at B1 in PMY jaguar), animated versions of signs (e.g., MOUNTAIN sign at A2 in JM spoon), multiple signs for the same CV sequence (e.g., T1 7u at C6a in DO pectoral, perhaps C5a in DO pectoral also 7u; A1b ya and C6b ya in DO pectoral), glyph-block demarcation of syntactic units (verbs, nouns) and graphic composition (main signs).¹²² In addition, the following orthographic spelling conventions may be attested: phonetic signs to spell affixes (e.g., 7u-y(a)-C6b-li/IL), phonetic signs to complement logographs (e.g., pa-PAM), and underspelling of inflectional affixes in lexicalized phrases (e.g., SIT for chum-ul 'seated' in SIT 7AJAW for chum(-ul) 7ajaw 'seated lord'). I elaborate upon these below.

6.7. Structural Analysis and Interpretation of DO Pectoral Subtradition

Texts.¹²³ In this section I present the structural and linguistic analysis of the DOPS texts. I focus on the passages and glyphs that I consider to be most constrained in terms of the

¹²² John Justeson (personal communication 2001) rightly points out to me that the JM spoon and UNP clamshell texts are not necessarily evidence for a single-column format. This is because each of the texts is composed of a single column of text; it is only possible to know for sure what the reading format might be if there are at least two or three columns of text. And whenever such situation presents itself, as in the DO pectoral and the PMY jaguar, the reading format is in double columns. I still think the JM spoon and the UNP clamshell provide evidence for a default single-column format; this may be the case especially of the UNP clamshell, given that its surface is wide enough to have potentially allowed for two glyphic columns rather than just one.

¹²³ In Footnote 12 of Chapter II I list all the abbreviations for linguistic glossings used in this dissertation.

alternatives for their analysis. These include: the clauses containing the BEARDED.GOD.N glyph, the clauses containing the INITIAL.SIGN and STEP glyphs, the clauses containing the T712 and T841 signs, and the clause with the T644 + T168:518 phrase. I treat any other patterns and passages only to the extent that they can be elucidated by the four already mentioned.

6.7.1. Structural Analysis 1: JM Spoon, A4-A8. The BEARDED.GOD.N glyph is one of the most frequent glyphs in the DOPS corpus. It can offer important insights into the grammatical structure of these texts. For this reason I start by studying its distribution, spelling patterns, and morphosyntax.

In the four texts of interest here, BEARDED.GOD.N (**figures 6.25a-d**) occurs text-initially on two occasions (PMY jaguar, UNP clamshell), and clause-initially on three (B2 and C1 in DO pectoral, A4 in JM spoon), as I show below. The text-initial contexts suggest two likely functions: as a pronominal prefix marking person agreement on a verb or noun, which is likely to begin texts on portable objects; or as a predicate (or part of a predicate), whether verbal, nominal, or adjectival. An adverbial function (e.g., temporal phrase) is not immediately obvious in any way (e.g., due to absence of numerical coefficients), though it cannot be discounted from the start. However, the correspondence between the BEARDED.GOD.N glyph and the GOD.N glyph of CLM texts (see Chapter IV) suggests one of four functions: PAWATUN ‘name of God N’; MAM ‘grandfather’; ?HUY//?T’AB’, a dedicatory verb; or HO7 ‘five’. Of these, only the verbal GOD.N glyph is likely to consistently occur text- and clause-initially, given Mayan basic word order (VOA, VS). Although nouns can also occur text- and clause-initially given Mayan pragmatic word orders (AVO, AOV, OVA, SV), these are nonetheless very rare in CLM texts (see Chapter III). I assume in this chapter that BEARDED.GOD.N is a verb.

BEARDED.GOD.N appears in four Late Preclassic texts with a postposed T116 ni (**figures 6.25b,c,d**). Nikolai Grube (personal communication 1995) first suggested to

me that the example in the KND bivalve at A3 (figure 6.25e) has a postposed T120 **ne** sign. Based on this observation I realized that the BEARDED.GOD.N glyphs in the DO pectoral, the JM spoon, and the PMY jaguar, but not the UNP clamshell, also bear the same postposed sign. However, I think the sign in question is in fact an early form of T116 **ni**, which shows more than one hair or tendril and a particularly lengthy one in some early (cf. Yaxchilan Lintel 49:C8e, where a T116 **ni** with an extended tendril is used as a phonetic complement to **K'IN**: T120 **ne** is never used as a phonetic complement to **K'IN**) and late (cf. Nim Li Punit Stela 15:E1, where T116 **ni** with an extended tendril is used as a phonetic complement to **TUN**: T120 **ne** is never used as a phonetic complement to **TUN**) examples. In fact, the examples in the DO pectoral and the PMY jaguar do not show the extended tendril and conform very closely to the more typical design of T116 **ni**. This postposed T116 **ni** sign makes it unlikely that the whole glyph constitutes a pronominal prefix such as **7u**.¹²⁴ T116 **ni** could spell: (1) a phonetic complement for the last consonant of the word represented by BEARDED.GOD.N (e.g., CV(G)N(-**ni**)), (2) a suffix of some sort (e.g., VERB-**ni** for VERB-ni or VERB-n-i), or (3) a phonetic complement and a suffix (e.g., VERB-(**n**)i for CV(G)n-i, where C₂ of the C₁V(G)C₂ verb is n).

As mentioned in Chapter III, intransitive verbs in the script, when spelled logosyllabically (e.g., **HUL-li**) or syllabically (e.g., **hu-li**), often take a word-closing Ci sign. This has suggested to several epigraphers that the vowel of this Ci sign in fact represents the suffix **-i(h) ~ *-Ø* ‘completive status’ of intransitives (e.g., *hul-i-Ø* ‘s/he/it arrived’) reconstructible to proto-Mayan (as ‘plain status’) (Kaufman 1989; Kaufman and Norman 1984). If BEARDED.GOD.N is intransitive, then, **ni** could be spelling no overt

¹²⁴ If one were to argue that maybe it is the BEARDED.GOD.N glyph that is read **7u**, the T116 **ni** sign would be left by itself, with its only possible function being to represent the beginning of a following verb or noun; however, if this were the case, one would not expect four graphically different glyphs in three different types of artifacts to all begin with the sequence of sounds ni..., given that four graphically different glyphs in three different types of artifacts follow the BEARDED.GOD.N-**ni** glyph in these cases.

morphemes (option (1) above, assuming the $\text{-}\emptyset$ allomorph of the ‘completive status of intransitives’), the final consonant of the root and the -i ‘completive status marker of intransitives’ (option (2) above), or maximally two morphemes of the forms -n-i (option (3) above). An intransitive interpretation is supported by the absence of an ergative prefix on BEARDED.GOD.N, while a completive interpretation, if one does not make any a priori assumptions about the presence of split ergativity in these early texts, is simply more likely in a narrative text than an incomplete interpretation.

In addition to being clause-initial and having a postposed **ni** sign, the signs that follow the BEARDED.GOD.N glyph are suggestive of its predicative function (**figure 6.52**). It is immediately followed on two occasions by FOREHEAD (DO pectoral at A3, spelled [pa]FOREHEAD; UNP clamshell at A2, spelled FOREHEAD), on one occasion by SPOTTED.BAT.HEAD (DO pectoral at C2), on one occasion by T503 7IK’ (JM spoon at A5), and on one occasion also by SPROUT-GENERIC.HEAD (PMY jaguar at B1). Of these examples, I think that at least at first the most approachable is the JM spoon example (**figure 6.53**), which is why I start by discussing this text.

The reason for the greater approachability of this text is the overwhelming iconographic evidence suggesting that T503 7IK’ may refer to the jade spoon itself as a musical instrument (Chapter V) (Mora-Marín 1995b, 1996, 1997; Taube 2000a). If one assumes that T503 7IK’ is a reference to the jade spoon itself, and as already explained above that BEARDED.GOD.N-ni is a dedicatory verb, then A4-A5 BEARDED.GOD.N-ni + 7IK’ in the JM spoon would constitute an example of the following structure (NP = noun phrase): V NP. The function of the glyphs that immediately follow T503 is not self-evident; all I can say with confidence is that the last glyph at A8 has to be a title, since it is essentially an Emblem Glyph, a title formula of the following form: DIVINE-X-LORD. A8 may read DIVINE-T505-7AJAW-?la, where T505 is known to substitute in one context for T566 MAN; if T505 has the same reading as T566, and if the sign that I tentatively read as DIVINE here (No. 142, **figure 6.20**) has the same reading as its CLM

counterpart, T36/41 **K'UHUL** 'divine', then A8 would read **K'UHUL-MAN-7AJAW-?la**.¹²⁵ Given this title, it is likely that at least one, and maybe more than one of the preceding glyphs would provide the name of this lord. A6-A7 (?T1013 + **BIRD.HEAD-?NAL/la-?la**) could thus be the name of the **DIVINE-T505-LORD-?la**.¹²⁶

If this is the case, A4-A5 would show the following structure: V NP₁ NP₂. NP₁ would correspond to T503 **7IK'** 'wind', a reference to the jade spoon itself (as a musical instrument) and therefore to an inanimate object, while NP₂ would correspond to A6-A8 and be a reference to a human actor. Given this syntactic and semantic structure, V NP₁[inanimate] NP₂[animate], a straightforward semantic interpretation would be to assume that this is a case of a VOA sentence (**figure 6.53**), since animate participants are more likely to be actors than inanimate participants, and since VOA is the expected basic word order. But as already explained, an intransitive interpretation for the **BEARDED.GOD.N** verbal glyph is likely.

Alternatively, A4-A5 could constitute their own clause (**figure 6.54a**), as VS, since T503, likely a reference to the spoon itself and therefore as a nominal participant of the predicate likely expressed by A4, could be an intransitive subject, S. If so, and assuming that A8 is the name of a human participant, A6-A7 could be spelling a separate predicate with A8 as its subject (**figure 6.54b**). However, there is no evidence to support A6-A7's function as a predicate, while there is syntactic evidence supporting A6-A8's

¹²⁵ A3 in the JM spoon would read the same, except the final sign is apparently **li** (**figure 6.33**), not **la**. It is not clear what the function of the possible **la** or **li** sign is in these examples, but there are CLM texts where the **7AJAW** title may take a **la** sign possibly to spell a **-Vl** suffix of some sort, such as the **to/TOK-CHAK-7AJAW-la** Emblem Glyph on Stelae 10 and 11 from Altar de Sacrificios (Houston 1986:Figure 5).

¹²⁶ My interpretation of T147/165/194 at A7b as a possible **NA(HA)L/la** sign is based on its context in its frequent but optional use on the **MAIZE.GOD** glyph, read **NAL**, in contexts where a reading **NAJAL/NAHAL** is likely. These include the **na-ja-la** expression of the PSS (K1004, K3699), sometimes spelled with the **MAIZE.GOD** head glyph (K4379). However, it is possible that it is simply a **la** sign, given that T178 **la** represents a bead and so does T147/165/194. If so, when used on the **MAIZE.GOD** glyph, it could serve as a phonetic complement, **NAL(-la)**.

function as a single noun phrase functioning as a subject (the names of royal individuals usually exhibit more than one word). Thus, the analysis so far supports a VOA clause at A4-A8 in the JM spoon. The patient noun phrase, henceforth ONP or O, is expressed by means of a single sign and represents a single noun root, 7ik' 'wind', in reference to the jade spoon itself. These facts thus suggest that BEARDED.GOD.N is a root transitive verb that refers to some action that can be carried out on inanimate objects of this sort by animate human actors.

The problem, as already noted, lies in the fact that BEARDED.GOD.N is inflected as an intransitive, since it lacks an ergative person marker. Intransitive verbs are supposed to take only one nominal argument, and therefore make up the basis for VS, not VOA, clauses. The answer to this dilemma lies in the morpheme that the phonetic **ni** sign postposed to the BEARDED.GOD.N verb appears to spell in these examples.

6.7.2. Structural Analysis 2: JM Spoon, A1-A3. Before proceeding with the analysis of the remaining BEARDED.GOD.N clauses, the following can be said about A1-A3 in the JM spoon. First, A1-A3 likely constitutes a clause separate from A4-A8 because A3 is an Emblem Glyph (the same as A8 with a slight difference in spelling) and Emblem Glyphs usually occur phrase- and clause-finally (unless the **b'a-ka-b'a** title is also present, in which case the latter always comes last), and also because what follows this Emblem Glyph, the BEARDED.GOD.N-**ni** glyph, is known to occur text-initially in two texts (PMY jaguar and UNP clamshell) and likely represents a dedicatory verb. So assuming that A1-A3 constitutes a clause by itself, a possible interpretation based on the surviving evidence is shown in **figure 6.55a**. This interpretation sees A1 as a predicate, possibly a verbal predicate, with A1a possibly the verb root or stem, likely an intransitive verb due to the possibility of the absence of an ergative marker, and A1b **?la** a likely suffix: 'Mountain Divine [T505] Lord was/got [A1]ed'. Unfortunately A1a is eroded, precluding easy recognition. The outline of the glyph may be sufficiently well preserved for a Mayan scribe to have recognized the sign, but it is otherwise lacking in any

diagnostic traits that I can securely ascribe to a known CLM sign. John Justeson (2001) has suggested that A1a could correspond to the TURTLE.SHELL sign attested in CLM texts (**figure 6.50c**); I think this identification is likely, but confirmation may not be possible given the eroded state of the text. If correct, though, TURTLE.SHELL-?1a could be an example of the CLM epithet 7AK(-1a) ~ 7a-ku(-1a) attested at Piedras Negras. Another possibility (**figure 6.55b**), less likely given the surviving evidence, is that there may have once been a phonetic 7u sign immediately on top of A1a that is now eroded; if so, A1a could be a possessed noun, with A1b representing a possessive -Vl suffix: 'It is the [A1] of Mountain Divine [T505] Lord'.

6.7.3. Structural Analysis 3: GOD.N-ni Passages. There are four BEARDED.GOD.N clauses besides the one in the JM spoon. Three of them share a trait that distinguishes them from the fourth one. As seen in **figure 6.56**, the examples of the BEARDED.GOD.N glyph in the DO pectoral and the PMY jaguar all take T116 ni as a possible suffix, just like that in the JM spoon. The first case (**figure 6.56a**), in which BEARDED.GOD.N is immediately followed by [pa]FOREHEAD in the DO pectoral text at B2-A3, is similar to the UNP clamshell case at A1-A2 where one finds the FOREHEAD glyph immediately after the BEARDED.GOD.N glyph too, suggesting that these two passages are equivalent in content. However, in the DO pectoral the BEARDED.GOD.N glyph has a postposed ni sign (i.e., BEARDED.GOD.N-ni), while in the UNP clamshell example it lacks it, and no other sign is present in its place (the earflare and hair are part of the BEARDED.GOD.N sign, not a separate sign). These two contexts, and the difference between them, will prove to be revealing of the function of the ni sign.

In order to understand the function of the BEARDED.GOD.N glyph it is necessary to proceed with a description of the glyphs that follow the FOREHEAD,

SPOTTED.BAT.HEAD, T503, and SPROUT(-PERSON) glyphs.¹²⁷ In the cases in **figure 6.56**, the following sign sequences can be argued to be personal names of human participants:

(1) REED-**hi** + SKULL + ?**chu**/?MOUNTAIN + SIT + LORD + ?NAME/TITLE¹²⁸ + FLOWER-HAWK at B3-B6 in the DO pectoral (**figures 6.3** and **6.56a**);

(2) FLOWER + HAWK... at C2-D2(...) in the DO pectoral (**figure 6.56b**);

(3) ?T1013 + BIRD.HEAD-?**la**-?**la**+ DIVINE-T505-7AJAW-?**la** at A6-A8 in the JM spoon (**figure 6.54**); and

(4) ?FLOWER-?PENIS + BEHEADED.JAGUAR + ?BAT.HEAD/?GOPHER.HEAD + MOUNTAIN-?**IV** + ?DIVINE-7AJAW at A2-B4 in the PMY spoon (**figure 6.56d**).

The evidence for this assessment is varied: it includes the structural analysis already presented for A4-A8 in the JM spoon and its generalizable features (e.g., V-**ni** + ONP₁ + ANP₂), repetition of sign sequences within the same text (e.g., FLOWER-HAWK at B6 and C2-D2 in the DO pectoral), and the likelihood that one of such repeated sign sequences is a personal name (FLOWER-HAWK). If one assumes that the BEARDED.GOD.N-**ni** + FOREHEAD/BAT.HEAD/SPROUT sequences are cases of ...V NP... sequences, just like BEARDED.GOD.N-**ni** + **7IK**' in the JM spoon, and that just like **7IK**' in the JM spoon the FOREHEAD/BAT.HEAD/SPROUT glyphs are likely to represent the names of inanimate patients, then the sign sequences that follow these ...V

¹²⁷ Since generic human heads were not read, they were only artistic devices for filling in a glyph block when the sign they attached to was too small to do that on its own. I refer to the SPROUT-PERSON glyph from now on as SPROUT, and to the SPOTTED.BAT.HEAD as BAT.HEAD.

¹²⁸ Schele and Miller (1986) proposed a match between this glyph and T1010 **K'INICH.7AJAW** 'Sun-faced Lord', the Sun God. However, I do not see any of the Sun God's diagnostic traits (e.g., shark's tooth, infixed T544 **K'IN** sign) in this glyphic head. For now I merely assume it is a name or title.

NP... sequences are also likely to be the names of animate agents, just as in the case of the A6-A8 sequence in the JM spoon ending in an Emblem Glyph. However, there is a problem with this proposal, as already mentioned above: since the BEARDED.GOD.N-ni verb lacks ergative person markers, and is therefore inflected intransitively, how could it be the predicate of a V ONP₁ ANP₂ clause?

My hypothesis is that the verb is an incorporative antipassive verb, and that in all cases discussed here NP₁, the noun that immediately follows the verb, is an incorporated object, hence ONP₁, resulting in a sentence that is in fact intransitive (the equal sign indicates compounding of two stems into a word, while the square brackets indicate incorporation of one constituent into another, making up a single VP constituent, and the S stands for intransitive subject): V[=NP] SNP. Next, I discuss this hypothesis by means of case-by-case argument.

6.7.4. Structural Analysis 4: DO Pectoral, A1-B6. The evidence from the sign sequences (1)-(4) above supports the semantic V ONP₁ ANP₂ (i.e., underlying VOA) hypothesis for the passages in **figure 6.56**. Example (2) is revealing: it contains the sequence FLOWER + HAWK, argued by Coe (1966), and by now universally accepted, to be the name of the protagonist of the text. In the case of (2) the BAT.HEAD glyph is immediately followed by FLOWER + HAWK. The fact that the previous occurrence of FLOWER + HAWK at B6 is not preceded by a BAT.HEAD glyph, and the likelihood that FLOWER + HAWK represents the same name in both occurrences suggest that the BAT.HEAD glyph is not part of the name. It may instead be a separate constituent. Due to a lack of additional examples of the glyphs at C3-D3 I cannot determine whether they are part of the name that starts at C2-D2 with FLOWER + HAWK, whether they are part of a separate phrase within the same clause that begins at C1 (e.g., a locative or temporal phrase), or whether they are a separate clause (i.e., with C3 perhaps as a predicate and D3 a subject, given the analysis of C4-D4 as its own clause provided below). I deal with this matter shortly.

Example (1) has one complication. Given that FLOWER-HAWK is found at B6 and that BEARDED.GOD.N-ni is found at C1, and given the fact that one is clearly a personal name and the other appears to be a dedicatory verb, there is a strong likelihood that the two make up an interclausal boundary (...B6][C1...), since BEARDED.GOD.N-ni (C1) is likely clause initial. AVO clauses, though rare, do occur in CLM texts, and should be expected to have occurred in Ch'olan-Tzeltalan, the various stages of Ch'olan, and the various stages of Yukatekan, given the word order variation in their modern descendants and those reconstructible to proto-Mayan by England (1991) (see Chapter II). Despite this, since the sequence of glyphs at C1-D2 is easily interpretable as a V ONP₁ ANP₂ clause, making it seem as though the major roles of a transitive clause (O and A) are already accounted for in a postverbal position, and precluding the possibility that B6 is part of the same clause. Moreover, NP₂ at C2-D2 (FLOWER + HAWK) is the same noun phrase as B6 (FLOWER-HAWK), suggesting that they have the same referent (i.e., the iconographically depicted seated personage), and making it very unlikely that they would be repeated in different parts of the same clause. It does make sense, therefore, to interpret B6/C1 as an interclausal boundary.

The problem then lies in identifying and delimiting the constituents between B3 and B6. I assume that B2-A3 make up a sequence ...V NP₁... analogous to those at C1-D1 in the DO pectoral and A4-A5 in the JM spoon. The sequence at B2-A3 in the DO pectoral consists of BEARDED.GOD.N-ni + [pa]FOREHEAD, and is thus structurally identical to BEARDED.GOD.N-ni + 7IK' in the JM spoon and to BEARDED.GOD.N-ni + BAT.HEAD in the DO pectoral. As already mentioned above, glyph A3 in the DO pectoral, [pa]FOREHEAD, may be a spelling of (pa-)PAM 'forehead/surface'. Its three occurrences in fact support its logographic status, which in turn suggests it represents a single word. Indeed, it occurs at A3 and D4 in the DO pectoral with different preceding (BEARDED.GOD.N-ni, tzi/TZIK-no) and following (REED-hi/ji, ?7u-T712) glyphic environments, respectively. As I argue below, both BEARDED.GOD.N-ni and

tzi/TZIK-no spell verbs, while **REED-hi/ji** may spell part of a proper name and **?7u-T712** is the beginning of separate clause. These contexts in the DO pectoral therefore suggest that **[pa]FOREHEAD** represents a word by itself. The glyph also occurs as **FOREHEAD** (without an infix **pa** sign) at A2 in the UNP clamshell, where it is followed by yet another glyph (T510:17 **STAR-yi**) not attested in this context in the DO pectoral. From this one can generalize that the **FOREHEAD** glyph can precede and follow different glyphs, supporting the possibility that it does not form an unbreakable constituent with a preceding or following glyph. Furthermore, the glyph that follows it in the UNP clamshell, as I discuss in more detail below, is a known verbal glyph from **CLM** texts. This fact points strongly to a interclausal boundary in this text, with one clause ending with the **FOREHEAD** glyph and another starting with the **STAR-yi** glyph.

By analogy with the **JM** spoon A4-A8 passage, where **7IK'** may refer to the jade spoon itself, the **[pa]FOREHEAD** glyph may refer to the DO pectoral itself as well. Its presence in the DO pectoral and the UNP clamshell, both objects of a similar shape (elongated, flat), texture (polished), and manner of suspension (horizontally-oriented pectoral pendants) could suggest a possible meaning for this glyph, especially when the possible phonetic complement **pa** and certain iconographic evidence are taken into account. As mentioned above (**figure 6.50**), the only diagnostic trait of **FOREHEAD** is the T-shaped element projecting from the forehead. This element is unique to this sign and could provide an explanation for the infix **pa** sign based on proto-Ch'olan ***pam** 'forehead' (Kaufman and Norman 1984), a term that would be more than appropriate for an elongated and flat surface. In fact, in Modern Tzeltal **pà[h]m** is a classifier for 'flat things' (Kaufman 1971:86), while in Modern Ch'ol **pantun** /**pam=tun**/ means 'the surface of the stone' (Aulie and Aulie 1978:91-92). This interpretation is supported by the fact that in the UNP clamshell the **FOREHEAD** glyph has a **POLISHED.SURFACE** semantic classifier infix, suggesting that it refers to a type of object that can be polished, such as a jade pectoral, and also by the fact that flat jade objects like these were sometimes worn on

the forehead.

Here I provide two alternative analyses of B2-B6 (**figures 6.57b, 6.58b, and 6.59**), but I think there is enough evidence to favor one over the other. The first proceeds as follows (**figures 6.57b**). B6 is clearly a personal name. The question is whether it ends a nominal phrase starting at B3, and therefore is part of the same clause that I argue includes B2-A3, or whether it belongs to a separate clause from that including B2-A3. Backtracking, there is little that can be said about A6 other than it could be a name or title given that human head glyphs with earflares (cf. rectangular element on back of head) are often titles or parts of titles, or names of gods used as names of people. This is not by any means a rule, since there are human or god head glyphs that are used to represent CV phonetic sequences (e.g., T1073 *ye*) and verbal roots or stems (e.g., GOD.N glyph).¹²⁹

A5-B5 is of great interest: I agree with Schele and Miller (1986) that A5, T644 SIT, is probably a reference to the portrayed figure as being seated or sitting in office, and that B5, T168:518 **7AJAW** 'lord, ruler', is probably a reference to the particular office to which he acceded. However, I disagree with the syntactic interpretation these authors have presented, which evident in their paraphrase: 'he was seated as king' (Schele and Miller 1986:120). This paraphrase implies a reading identical to that of attested uses of T644 SIT in CLM texts, such as the following: **CHUM-la-ja ti-7AJAW-le(-le)** [RULER'S.NAME]. In this phrase T644 SIT, **CHUM**, takes a completive positional suffix spelled with **-la-ja** and probably corresponding to *(V₁)l-aj (Ch'olan, Yukatekan). At the same time, the **7AJAW** 'lord, ruler' title is preceded by a preposition, spelled **ti** for

¹²⁹ A similar glyph, also with a tuft of hair and otherwise just human-looking, like A6 in the DO pectoral, may occur on an Olmec-style pectoral mask with two Mayan glyphs on the front illustrated in Schele and Miller (1986:Plate 31). Indeed, the first glyph there roughly corresponds to A6 in the DO pectoral, while the second glyph could be an early SKY glyph. Given the brevity of the text, and that the second glyph may be a SKY glyph, often used in the names of lords and gods, it seems probable that the whole two-glyph text may be simply a name, possibly the name of the portrayed person or god.

*ti(7) ‘to, at, in’, and is suffixed with -lel ‘abstractive’ spelled -le(-le), rendering chum-laj-Ø ti7+7ajaw-lel ‘He sat in rulership’. None of these derivational (-lel) and inflectional (-l-aj) morphemes is present at A5-B5 in the DO pectoral. Instead, one can read only **CHUM 7AJAW**. This suggests the following syntactic alternatives: (1) **CHUM(UL) 7AJAW** for chum(-ul) 7ajaw ‘seated lord’, with chum(-ul) ‘seated’ as an adjectival modifier to ‘lord’; or (2) **CHUM(UL) 7AJAW** for chum(-ul)-Ø 7ajaw ‘He is/was a seated lord’, with -Ø as a third person absolutive agreement marker on chum(-ul), which would have to be a predicate. If A5-B6 were found in isolation as its own text, then I would argue for (2) (i.e., ‘He is/was a seated lord’). However, the apparent structural parallels between the clause beginning at B2-A3 in the DO pectoral and the clauses at A4-A8 in the JM spoon and C1-D2 (or C1-D3) in the DO pectoral call for a nominal phrase to follow the sign at A3. I therefore leave both alternatives open at this point.

The identification of the sign at B4 is not certain: it could be a form of T515 **chu**, as suggested to me by John Justeson (personal communication 1997), or perhaps a MOUNTAIN sign iconographically similar to the Epi-Olmec MOUNTAIN sign (Mora-Marín 1996, 1997), though I am not persuaded by either suggestion.¹³⁰ The sign at A4 is iconographically identifiable as a BEADED.SKULL sign (see **addendum 2**). However, there is no evidence at present on which to base a reading.¹³¹ As with B4 and A6, it would take a leap of faith to simply say that they are likely part of a name phrase.

Lastly, B3 is the T340:60 REED-**hi/ji** glyph. Whether or not T60 at B3b is orthographically a separate sign from the REED sign, or whether it is iconographically a

¹³⁰ John Justeson suggested to me that if B4 is **chu** that it could be a phonetic complement to a likely reading **CHUM** for A5.

¹³¹ BEADED.SKULL signs with slightly different iconographic details in CLM texts have two possible readings: phonetic **7u** and phonetic **ha**. Given the simplicity of A4 the former reading is more likely. However, the ornament visible on A4 may not be a diagnostic, and this may have simply been meant as SKULL sign, in which case other readings are possible: phonetic **b’a**, logographic **JOL** ‘head’ (Grube and Martin 2000). The second of these last two is sometimes used as a proper name in CLM texts. Basically, there is nothing about the context of A4 that allows one to discriminate among these possibilities or to propose a different possibility.

part of the REED sign I cannot tell. As explained above, both cases of this REED sign known to me take T60. An example of T518 in the UNP clamshell shows a graphic suffix in the form of T60; Stuart (1992, 1995) has argued in fact that T518 represents a reed, as already discussed above, an example in the UNP clamshell could support his identification. In any case, the point of these comparisons is that there is no evidence to say that T60 functions separately from the REED sign in this corpus of texts: it may have formed an (optional) iconic unit with the REED sign, whether T340 or T518. The contexts of T340:60 (**figure 6.22c**) in an Early Classic jade turtle shell (Schele and Grube 1994:89) and in a Protoclassic pot (MNAEG 11272 and 11276) from Cache PNT-007, Structure 5D-86, in the Mundo Perdido complex at Tikal dating to Manik I (A.D. 200-300) could be suggestive of its function in the DO pectoral. In the Early Classic jade turtle shell it occurs as part of a personal name, as indicated by the fact that it follows the parentage term **7u-NICH(')(AN)** 'his child (of father)', which is always followed by a proper name referring to the father of a person who is mentioned by the preceding glyphs. In the Protoclassic pot the REED glyph appears in the following spelling: **7IX/NA7-REED-K'IN**. Given the possible parallel with the Classic period title **7IX/NA7-7AJ-K'IN(-ni)** 'priestess', attested at sites like Xcalumkin (**figure 1.33b**), the Mundo Perdido pot could be using the REED sign as a rebus **7AJ** based on proto-Mayan **7aaj* 'reed' to spell the **7aj+* 'male proclitic' in the title base *7aj+k'in* 'priest'. If so, the Mundo Perdido pot could spell **7IX/NA7-7AJ-K'IN** 'priestess' (**figure 6.22f**), which would also support a nominal (NP) function for at least some of the glyphs between B3-B6 in the DO pectoral. B3 REED would constitute the first sign in the presumed spelling of a personal name given that it follows the [pa]FOREHEAD sign at A3, which I have argued may constitute a separate constituent immediately following BEARDED.GOD.N-ni at B2. This fact alone makes a phonetic **7aj** reading to spell **7aj+* a good possibility. If so, B3-A4, at least, could read **7AJ-SKULL** 'Mr. [SKULL]', where SKULL is simply a nickname for the sign at A4 rather than a proposed reading.

It is thus possible to analyze B3-B6 as a single nominal phrase. CLM texts have a large number of shamelessly lengthy nominal phrases with numerous epithets, titles, and names, and B3-B6 would not even compete with many of them in length. If B3-B6 does constitute a single phrase, then the analysis for B2-B6 would look as shown in **figure 6.57b**. If B3-B6 must be broken up, however, a plausible analysis of this sequence of signs is presented in **figures 6.58b** and **6.59**. Either way, the clause beginning at B2 is likely to end no sooner than at B4 (**figure 6.58b**), and no later than at B6 (**figure 6.57b**). If B2-B6 contains two clauses, then A5-B5 would make up a separate non-verbal clause (**figure 6.59**): '[A6-FLOWER-HAWK] is/was a seated lord'. If B2-B6 contains one clause, then B2-B6 would make up a single verbal clause (**figure 6.57b**), with B2 the verb, A3 an apparent ONP, and B3-B6 an apparent ANP, with a structure V ONP₁ ANP₂ (or VOA) like that in the JM spoon at A4-A8. Below I discuss the possible interpretations of these clauses.

The analysis of A1-A2 is less ambiguous (**figures 6.57a, 6.58a**). A1 corresponds to the INITIAL.SIGN (T617:126) of CLM dedicatory texts. The INITIAL.SIGN is commonly found in more than one context, but often in a text-initial but always in a clause-initial position, consistent with a predicative function. As discussed in Chapter IV (section 4.2.1), several readings have been proposed. However, it is the proposal by MacLeod (1990) as 7AY 'existential particle' that I think finds more support orthographically and syntactically, as well as in terms of discourse contexts: it usually begins a whole text or a separate segment of discourse, introducing new information each time, just as the existential particle does across Mayan languages (see Chapter IV, section 4.2.1). This particle is reconstructed by Kaufman (1989:Part B, 234-235) as **7ar* 'existential/locative predicator' for proto-Mayan. Kaufman (John Justeson, personal communication 2001) further thinks **7ar* may have been an adjectival root meaning 'existing, being there'. He lists the following as some of the Western Mayan reflexes, all of which reflect the change of **r > y*: Ch'olti' <aya(n)>, Ch'orti' *7ay*, Tzotzil *7oy* and

7ay-an ‘(vi) be born’, Tzeltal 7ay ‘being there’ and 7ay-in ‘(vi) be born’, Chuj 7ay, Q’anjob’al 7ay, and Jakaltek 7ay-a ‘haber, existir, estar’. The Ch’olti’, Tzotzil, Tzeltal, and Jakaltek examples show that this morpheme can be inflected and undergo derivation, and that a common suffix might have been a suffix or clitic of the form -a(n). Kaufman (John Justeson, personal communication 2001) takes this -an suffix to be a reflex of his reconstructed proto-Mayan *-a7n ‘stative participle’: he suggests that in languages like Ch’olti’ with the form 7ay-a(n), the root 7ay might have been treated as a positional, and the form 7ay-an was a stative adjective derived from such a positional.

A1 in the DO pectoral is spelled T617:126, possibly for **7AY-ya**, where phonetic **ya** may be a phonetic complement, resulting in **7AY(-ya)** for 7ay-Ø ‘there is/was’ or **7AY-(y)a** for 7ay-a(n)-Ø ‘there is/was’. In either case its function as a discourse-opening marker is apparent, given that it begins the text and is followed by a verb. The fact that the vast majority of examples of the IS, including most of the earliest examples, show it with **ya** as a graphic suffix is suggestive of the form 7ay-a-Ø. The **7AY-ya-la** spellings, furthermore, could point to a more complete spelling of a possible form 7ay-al: *-V₁l ‘stative participle’ is also reconstructible to proto-Mayan with the same function as *-a7n (i.e., the two were in allomorphic distribution). It is thus possible that the languages attested in CLM texts used *-V₁l instead of, or in different contexts from *-a7n. The latter has survived in Ch’olti’ and Ch’orti’ in the form 7ay-an.

The IS, T617:126, is immediately followed at B1 by T843 STEP, a likely verbal glyph, as pointed out by Freidel and Schele (1989). B1a is the STEP glyph, and B1b corresponds to T671 **chi**. As already pointed out, T671 **chi** is used in a few early texts in the spelling of an apparent verbal suffix. Given the use of the STEP sign as a dedicatory verb in CLM texts (Chapter IV), it is thus likely that STEP-**chi** spells a verb. The orthographical representations allows for more than one interpretation, all of them assuming this to be an intransitively inflected verb due to the lack of ergative person markers: (1) CVC-ch-i (**chi** spells two suffixes); (2) CVch-i (**chi** spells the final

consonant of the root represented by STEP and the vowel of a -V(G) suffix, where G might be a weak consonant such as /h, ʔ, w, y/); (3) CVch-Ø (**chi** serving only as a phonetic complement indicating the final consonant of the verb root, and possibly its vowel too, if the spelling was synharmonic), or (4) CVC-ch-Ø (**chi** spells a ch suffix and no -V(G) suffix. I think alternative (1) is more likely than (2) or (3). Alternative (4) is less likely because -C suffixes in Lowland Mayan languages generally are either preceded by a -V suffix or followed by a -V(C) suffix, but do not commonly end a word.¹³² This assessment is based on the parallel with **TZUTZ-chi** at Tikal (**figure 45c**), where **chi** could not function as a phonetic complement to tzutz '(vt) to complete', only as part of the spelling of some suffix or set of suffixes. To my knowledge, the only suffix or set of suffixes that an intransitively-inflected verb might take that has a shape such as ch-i(G) is an inchoative or versive suffix ch attested in Yukatek as ch (Bricker, Po7ot Yah, Dzul de Po7ot 1998:407). Though in Mayan it is normally nouns and adjectives which may take inchoative suffixes, in Modern Yukatek root transitives may take this suffix too: b'ak 'wind around' vs. b'ak-ch-ah 'become wound', tzah 'fry' vs. tzah-ch-ah 'become fried', ch'ul 'moisten, drench' vs. ch'ul-ch-ah 'become wet', lak 'detach, disjoin' vs. lak-ch-ah 'become detached' (Bricker, Po7ot Yah, Dzul de Po7ot 1998:349). In Chapter VIII I discuss the possible source of this ch suffix. As for the vowel of the **chi** sign, i, it could represent a thematic suffix or a completive status suffix, both reconstructible to proto-Mayan as *-i ~ *-e and *[-i(h/k)], respectively. An interpretation of STEP with such a suffix would therefore be as follows: 'It became STEP-ed'.

The sign at A2 could spell **tu-hu**, **tu-SIJ**, **si-hu**, or **si-SIJ**, where A2a could be either T89 **tu** (cf. **figure 6.35d**) or T57 **si** (cf. **figure 6.35c**), and T740 at A2b could be either phonetic **hu** or logographic **SIJ** for sihj 'be born'. The form of the T740 IGUANA sign may be distinguished slightly depending on its reading: in the **SIJ** contexts it may

¹³² The following form illustrates this for the suffix -n 'incompletive status marker' of Ch'ol: i-kän-tesa-n-Ø 'he teaches it' (3sERG-learn-CAUS-INC-3sABS) (Kaufman and Norman 1984:94).

show a series of dots along the mouth and face, while in the **hu** contexts these dots are generally absent (Justeson , personal communication 2001).¹³³ The form in the DO pectoral resembles the form without dots, and therefore **hu**. However, neither **tu-hu** nor **si-hu** yields an obvious interpretation, while **tu-SIJ** could conceivably be t-u-sihj(-il) ‘for his/her birth’, a prepositional phrase expressing an argument not in a direct relationship with the verb, and thus oblique. If **SIJ** could be used to spell *sih ‘gift’ then **si-SIJ** could be a spelling of sih ‘gift’, a noun root serving as the subject of the STEP-**chi** verb (**figure 6.57a**). The same might be true if T740 is **hu**: A2 could be spelling sih ‘gift’ disharmonically as **si-hu**. B1-A2 could thus be either ‘s/he/it became STEP-ed for his/her birth’, or ‘a/the gift became STEP-ed’. Given the strong match between T57 **si** and T89 **tu** in Early Classic Mayan texts (**figures 6.35** and **6.60**), and of either one to A2a in the DO pectoral, it is not possible to choose between the two as the identification of the glyph at A2a. Either interpretation would fit nicely with the dedicatory text genre; if A2 reads **tu-SIJ**, A1-A2 could refer to a dedicatory action carried out on the occasion of a person’s birth, and if it reads **si-SI(J/H)**, A1-A2 it could refer to an action carried out on a ‘gift’, an inanimate object, quite possibly the DO pectoral itself.

6.7.5. Structural Analysis 5: DO Pectoral, C1-D4. This example has already been introduced (**figure 6.61a**). BEARDED.GOD.N-**ni** opens the passage at C1, followed by BAT.HEAD at D1, followed by FLOWER + HAWK at C2-D2, and by two additional glyphs whose membership to the clause beginning at C1 is not clear (see below). It is clear that C2-D2 make up a personal name, and that C1 spells a verb of some sort, probably a dedicatory verb; this leaves D1 BAT.HEAD as a separate constituent. Again, by analogy with the JM spoon’s A4-A8 passage this passage is quite possibly a case of a V NP₁ NP₂ clause, semantically of the form VOA, with the ONP

¹³³ This may not have been a full-proof distinction. On Yaxchilan Lintel 37:D7a one finds **k’u-hu**, for k’uh-u(l) ‘divine’, spelled with T740 **hu**. This T740 sign actually has the dots that are generally found in the **SIJ** contexts. I thus think that scribes may not have thought of this trait as an obligatory diagnostic of either reading for T740.

(NP₁) spelled out with a single glyph, suggesting it represents a logograph for a noun root or stem. And given that T503 in the JM spoon example likely refers to the spoon itself, it is quite likely that BAT.HEAD here refers to the pectoral or to some part of the pectoral. Since in CLM texts the SPOTTED.BAT.HEAD glyph occurs in contexts related to incising or carving of the objects on which the glyphs occur (see Chapter IV), I think it likely that the example at D1 is a logograph for ‘writing’ or ‘incising’ or ‘carving’, and probably refers to the inscribed text itself. This also suggests that the dedication of the DO pectoral was carried out in parts: if B2-A3... refer to the dedication of the pectoral’s ‘(flat) surface’, or perhaps simply of the pectoral (‘flat thing’) as a whole, then C1-D1... might refer to the dedication of the carving itself. And just as in the JM spoon example at A4 and the DO pectoral example at B2, in this case the verb appears to be intransitive, lacking ergative markers (i.e., BEARDED.GOD.N-ni), in spite of the fact that the clause as a whole has the appearance of a transitive clause (i.e., VOA). I propose a solution to this apparent paradox below, after addressing the glyphs that follow D3.

Assuming for now that C3-D3 constitute part of the clause beginning at C1 (whether as part of the name of FLOWER + HAWK, or as a separate, noncore constituent, such as an adverbial phrase), there are good reasons to analyze C4-D4 as a separate clause. First of all, C4a corresponds to T124, which is read **tzi** or **TZIK** ‘to count, to recount, to honor, to respect’ (Schele, Fahsen, and Grube 1994; Schele, Grube, and Fahsen 1994). L. Anderson (personal communication 1995) first suggested that it could be functioning verbally in this context. He further suggested that C4b could therefore correspond to a month patron sign, given that T124 **TZIK** is most often used before a month patron collocation in CLM texts. Such a collocation involves a variable sign corresponding to the current month followed by T548 **HAB’/TUN** ‘year’. However, I see no reason to identify C4b as month patron given the absence of either the month patron variable sign and the YEAR sign in the text. Also, C4b closely resembles T136[595] **no**, a phonetic sign sometimes used to spell a sequence of verbal suffixes in

CLM texts.¹³⁴ C4 is followed by [pa]FOREHEAD, suggesting that T124 could be functioning as a verb here, with [pa]FOREHEAD functioning either as an intransitive subject or a transitive object, given the likelihood already explained that it refers to an inanimate object such as the pectoral itself. At first, it seems as though [pa]FOREHEAD could in fact be an intransitive subject: the glyph that follows at C5 is not a personal name. If it were a personal name one could suggest a structure parallel to that at C1-D2... or B2-B6 (i.e., VOA). Instead, the glyph that follows [pa]FOREHEAD at C5 is part of a separate clause that refers to sacrifice, as explained below. However, despite the apparent V NP structure, suggestive of a VS clause given the lack of an ergative marker on T124 TZIK at C4, and given the presence of an NP after that verb which could be its S, there is another alternative. If C4 spells TZIK-no, then the verb could have an -n suffix identical to the suffix that BEARDED.GOD.N-ni seems to have. It is therefore possible that the TZIK glyph is inflected in a fashion similar to the BEARDED.GOD.N glyph, only spelled with a phonetic sign **no** rather than **ni**. This matter can only be resolved by addressing once and for all the function of the **ni** sign in the examples above.

In Mayan languages, transitive clauses require a transitive verb with an ergative case marker coreferencing the agent (A) and an absolutive case marker coreferencing the patient (O). But here is where the problem lies: the BEARDED.GOD.N glyph in the JM spoon and DO pectoral examples has no ergative prefix, or a prefix of any kind. In all

¹³⁴ In Mora-Marín (1996) I argued C4b could be a depiction of a stone pectoral with dangling beads. I still think this is a possibility. If correct, it is possible that it could be logographic PECTORAL, and refer to the DO pectoral itself, in which case C4b-D4 might be interpreted as ‘pectoral surface’, a compound noun serving as the subject of the T124 verb at C4a. If so, the verb would be necessarily passive or mediopassive TZIK for tzi[h]k-Ø-Ø honor[MPASS]-CMP-3sABS ‘it was/got honored/read’. Nevertheless, I think that the match between C4b and T136[595], which would spell TZIK-no, a verb attested in a CLM text, is a better possibility not only visually, but discursively. As I argue in this chapter and in Chapter VIII, the reading TZIK-no, if analyzed as tzik-n-om-Ø ‘He would read/honor’, allows for the continuity of the same subject/topic from glyph B2 all the way to glyph D6, the end of the text, while an analysis as TZIK tzi[h]k-Ø-Ø ‘it was/got honored/read’ would impose a break in the topic continuity between C4-D4.

three cases, the only sign graphically affixed to the BEARDED.GOD.N glyph is T116 **ni**, which is postposed: BEARDED.GOD.N-**ni**. The absence of an ergative prefix on this glyph suggests that it must be an intransitively inflected verb if it is a verb at all. But intransitive verbs can only take one noun phrase, the intransitive subject (S), as a core argument (i.e., VS). How to explain, then, the apparent VOA transitive structure of these clauses if the verb itself is intransitive?

The answer is provided by the **ni** sign that is postposed to the BEARDED.GOD.N glyph. In CLM texts T116 **ni**, T23 **na**, and T136[595] **no** are used to represent a suffix of the general form -(V)n which antipassivizes transitive verbs (see Chapter III, section 3.3.2). Keeping in mind that transitive verbs take two NPs, an ONP and an ANP, antipassivization can be defined as a construction that intransitivizes or detransitivizes the verb, demoting one of its arguments to a noncore status (i.e., whereby it is not coreferenced on the verb), and leaving only one of its arguments as a core argument (i.e., which is coreferenced on the verb by means of an absolutive marker). This lone core argument is the SNP, formerly the ANP. Unlike a passive construction, which in Mayan languages demotes the ANP to an optional oblique phrase (i.e., as the object of a prepositional phrase, the possessor of a relational noun, or the possessor of a relational noun that is the object of a prepositional phrase), while promoting the ONP to the S position, the antipassive construction demotes the ONP. In Mayan languages, the demotion of an ONP in an antipassive clause can take one or more of the following syntactic forms: omission, incorporation into the verbal complex, and oblique expression (i.e., as the object of a prepositional phrase, the possessor of a relational noun, or the possessor of a relational noun which is the object of a prepositional phrase). In many cases, if the ONP is generic and indefinite, it is incorporated into the verb; this means that rather than being omitted or expressed with a preposition, it is present immediately after the verb but cannot take modifiers, be pluralized, or be moved.

This seems to be the case in the texts under discussion here. In other words, the

VERB-**ni** + ONP + ANP constructions described above are suggestive of absolutive/incorporative antipassive constructions in which a generic and indefinite noun (e.g., T503 for ‘musical.instrument’, BAT.HEAD for ‘writing/polishing/incising’, FOREHEAD for ‘flat.thing/pectoral’) is incorporated and is not coreferenced on the verb; only the agent noun phrase is coreferenced on the verb. That the agent, rather than the patient, is coreferenced on the verb and retains a core status in the intransitivized (i.e., antipassive) clause can be demonstrated by the fact that no preposition or relational noun construction precedes the agent (e.g., there is no preposition before FLOWER + HAWK at C2-D2). In other words, because passive clauses demote the agent, which can then be either omitted or expressed as the object of a preposition or the possessor of a relational noun, and because such a strategy is clearly not taking place in the clauses under discussion here, one can conclude that these constructions are cases of antipassive clauses.

Therefore, the **ni** sign postposed to the BEARDED.GOD.N glyph must be spelling the -(V)n ‘absolutive/incorporative antipassive’ suffix, reconstructed as *(-o)-an for proto-Mayan by Kaufman (1989) (see Chapter II), and very likely the -i ‘completive status’ suffix of intransitives, reconstructed as *-i-k ~ *-i-h ~ *-Ø for proto-Mayan by Kaufman (1989) (see Chapter II), as -(V)n-i. The following structure can be suggested for these clauses: VERB.ROOT--(V)n-i-Ø=O[=O[-definite]] + A[+definite]. Since the object is incorporated into the verb phrase, and the verb must be intransitive given the absence of an ergative marker, these clauses can be analyzed as V[=O]S, where [=O] indicates that the ONP is incorporated into the verb stem. This analysis can be tested in the remaining examples of the BEARDED.GOD.N glyph, but first, there is one additional glyph that can benefit from this analysis, and I address it next.

The proposed T124:136[595] **tzi/TZIK-no**, which is followed by the second occurrence of **[pa]FOREHEAD** in the DO pectoral, is amenable to a similar analysis. This glyph is likely a verb, given that **[pa]FOREHEAD** follows a proposed verb in its two

other occurrences, that T124 represents the verb tzik ‘to count, to recount, to honor, to respect’ in CLM texts, and that **TZIK-no** is attested in a CLM text as a verb. Also, **[pa]FOREHEAD** may represent a term for the pectoral text itself or for the flat surface on which the text was inscribed, suggesting a dedicatory function for **TZIK-no**; in other words, **TZIK-no** is used here to refer, most likely, to the recounting (i.e., reading out loud?) or honoring of the referent of **[pa]FOREHEAD**.

As already noted, the verb does not take ergative person markers, showing that it is intransitive, and the clause appears to be of a V NP structure, which would be consistent with an intransitive (i.e., VS) clause, although most clauses in CLM texts show only one NP, or no explicit NP at all, regardless of their transitivity status (Mora-Marín 2001b). Given that the only explicitly-expressed NP associated with this verb, **[pa]FOREHEAD**, may refer to an inanimate object, which is unlikely to be an agent but quite likely to be a patient, the clause is likely an underlying transitive clause that has been intransitivized through (medio)passivization or antipassivization. The verb, tzik, is root transitive, and so, the phonetic sign **no** must be spelling some type of inflectional or derivational affix or sequence of affixes that would explain its intransitive inflection in this clause. As seen in **table 2.3**, proto-Ch’olan likely had a passive marker of the form *-n given the Western Ch’olan passive marker *-n-t and the Eastern Ch’olan passive marker *-n-a(h) reconstructed by Kaufman (1989). It is possible that the **no** sign could be spelling this *-n marker, and that C4-D4 **TZIK-no** + **[pa]FOREHEAD** could be a passive clause roughly meaning ‘The flat.thing was read/honored’. However, it is also possible that the **no** sign could be spelling a -(V)n ‘absolute antipassive’. In the clauses mentioned above it was suggested that this marker was spelled by T1 I6 **ni**. Significantly, too, in CLM texts **no** was sometimes used to represent this morph (i.e., -(V)n) instead of **ni** or **na**. (But see Chapter VIII for a substantial difference between the Late Preclassic and Classic periods in the context of use of the -(V)n and -(V)w suffixes). For instance, in **figure 6.47d** above phonetic **no** is used in precisely this way, to spell the antipassive

verb **ko-ko-no-ma** kok-(o)n-om-Ø(+a) ‘They would guard’ (Stuart, Houston, and Robertson 1999a:II-24).¹³⁵ The question is, then, which of the two possibilities fits the syntactic and discourse context better?

As already shown, with the BEARDED.GOD.N-**ni** clauses it is relatively clear that antipassivization is involved because the clauses are semantically transitive but morphosyntactically intransitive. However, with C4-D4 this is not obvious, since what follows the underlying ONP is without a doubt part of a separate clause, and there is therefore no obvious ANP after the [pa]FOREHEAD glyph that would point to a semantically transitive clause with intransitive morphosyntax, the characteristic superficial shape of an incorporative antipassive clause. Thus, the apparently ...V NP... structure of C4-D4 would suggest a passive clause as more likely. Despite this, an antipassive interpretation is not only possible, but would fit the discursive structure of the text much more adequately than the passive interpretation. I address this in the next section, as well as in Chapter VIII, once all the clauses of the text have been discussed in detail.

¹³⁵ Stuart, Houston, and Robertson (1999b:53) analyze this glyph as the noun kok-n-o7b ‘the guardians’, and argue that the three dots at the bottom are a PLURAL marker rather than a phonetic sign **ma**. They interpret the -n suffix as an agentivizer, it seems, and translate the whole clause, ha7-o7b’-Ø kok-n-o7b’ 7ox-witik, as ‘Those ones, the guardians of Ox Witik’. There are several problems here. First, the three-dots sign is used in place of T74 **ma** in numerous occasions to spell -om, the future/potential suffix. The final clause of a text, such as the example in question, is especially likely to take the potential/future participial suffix -om. Second, the -n suffix is clearly used in finite verb forms, rather than in nominalized verb forms, unless an **7a** or **7AJ** (7aj+ ‘male proclitic’) sign is preposed to the antipassive verb – this is not the case here. Third, ‘the guardians of Ox Witik’ implies that the presumed word for ‘guardians’, kok-n-o7b, is possessed by Ox Witik; that is not the case, there is no ergative prefix, as one would expect. And fourth, in other examples of agentive antipassive constructions where a clause-initial independent pronoun serves as subject it is this pronoun that marks plural agreement if the subject of the verb has a plural referent, and not the verb itself. In fact, the independent pronoun opening the clause already has plural agreement (i.e., ha7-o7b’-Ø). Thus, a more likely transliteration and translation of this text is the following: ha7-o7b’-Ø kok-n-om-Ø 7ux-witik ‘They (are the ones who) watched/guarded the 7ux-witik’. (I use Ch’olan 7ux for ‘three’ instead of Yukatekan 7ox for consistency).

Before offering two alternative analyses of C1-D4, one last point regarding C4 needs to be made. This is the fact that the verbal suffix is spelled with a **no** sign. At B1 an intransitively-inflected verb takes a Ci sign, and so does the intransitively-inflected BEARDED.GOD.N-ni verb at B2 and C1; both examples suggest the *-i(h) (~ *-∅) ‘completive status of intransitives’ marker. However, C4, also intransitively inflected, takes a Co sign, which does not suggest the presence of an *-i(h) (~ *-∅) status marker.

There are two viable options for analyzing the use of the **no** sign here in terms of simple phonetic sign usage: (1) **no** spells -n-ob’ PASS//AP-PLURAL, for tzik-n-∅-ob’, either ‘they were read/honored’ or ‘they read/honored’; or (2) **no** spells -n-om PASS//AP-POT/FUT, for tzik-n-om-∅, either ‘they would be read/honored’ or ‘they would read/honor’. As seen in **figure 6.48b**, the -om suffix is sometimes underspelled by means of CV-Co spellings (e.g., **7u-to** instead of more common **7u-to-ma** for 7u[h]t-om-∅ ‘it would be finished/happen’) where the expected m is not spelled; such spellings may alternate with CV-Co-ma spellings where the expected m is spelled even within the same text (e.g., **7u-to...TZUTZ//LAJ-(h/j)o-ma**), as in **figures 6.48b,c**. To my knowledge this was not the case of the plural suffix -ob’: all examples known to me show it explicitly spelled out in full as Co-b’V. I think a plural analysis has little to recommend it. Even if one assumes C4 is a passive verb, the background leading up to the C4-D4 clause does not offer any evidence for more than one entity referred to by means of the [pa]FOREHEAD glyph, which presumably refers to the pectoral itself, meaning that the [pa]FOREHEAD glyph had singular reference. Similarly, if one assumes C4 is an antipassive verb, the background leading up to the C4-D4 clause does not offer any evidence either for more than one human actor as subjects of the antipassive verb. Based on this, and the apparent fact that plural suffixes are explicitly spelled out in CLM texts whenever they were intended, the -om interpretation seems much more likely.

If **no** is used to spell -n-om APASS-FUT/POT, how would the C4-D4 clause be interpreted? The question is whether the -om suffix requires a future translation or a

potential translation, and just as importantly, what its pragmatic context would be in this case. In CLM texts the use of -om was apparently not to foresee or forecast future events, since their contexts suggest events that had happened or whose outcome was known to the scribes. I think that -om was used in CLM texts more as a past future: to express past events that, from the perspective of the narrative text itself, happened as a logical development or consequence of preceding events. In English would is sometimes used this way, in addition to its common habitual function. One made-up example is the following:

(6.1) Before changing jobs, John liked to make breakfast for his whole family every morning. He woke up very early and prepared pancakes and scrambled eggs for them. After this he would get ready to go to work. .

This example uses would to express a past action with a customary or habitual connotation that was understood to follow other previously mentioned actions. In the next example would is used in a slightly different way:

(6.2) Jim Carey had a rough time in Hollywood during the first part of his acting career. Thanks to a series of very successful comedies, however, he became synonymous with box-office hit and achieved a place of high status in Hollywood. After this, he tried a greater diversity of comedic and noncomedic roles. This would become his recipe for stardom.

This second example uses would to express a predicate that follows logically in sequence from previously mentioned predicates in the discourse, but does not express a future proposition from the point of view of the reader/listener.

Thus, there are two possible analyses for C1-D4. In the first, seen in **figure 6.61**, C1-D3 make up one clause, while in the second, seen in **figure 6.62**, C1-D2 and C3-D3 are separate clauses, and both are separate from C4-D4. The readings of C3 and D3, both of which are unique in the corpus of Late Preclassic or Classic texts, are unknown. Syntactically, therefore, C3-D3 could be part of the name of the agent that starts at C2-D2, or perhaps a separate non-core constituent or adjunct of the clause that starts at C1. Or C3-D3 could form a whole clause, with C3 possibly a verb and D3 possibly a subject

(if the verb is passive or root intransitive) or incorporated object (if the verb is antipassive and the subject has been omitted). The analysis I favor for C1-D4 is the one in **figure 6.61**, one that would be translatable roughly as ‘CROSSED.BANDS HAWK [...](S_i) BAT.HEAD-GOD.N-ed and ___(S_i) FOREHEAD-honored/read’.

6.7.6. Structural Analysis 6: DO Pectoral, C5-D6. The last clause of the DO pectoral text is found at C5-D6 (**figure 6.63a**). It begins at C5a with a sign that iconically depicts an earflare or earring, and is followed at C5b with T712, a sign that in CLM texts functions both as a noun and as a verb, depending on its context (see Chapter V). It likely represents a noun from which a verb can be derived. T712 typically has one of two signs graphically preposed to it: T1 **7u** or T93 **ch’a**. The former spells the third person ergative preconsonantal prefix 7u- and the latter spells a phonetic complement to T712, logographic **CH’AB’** for **ch’ahb’* ‘fasting’ (possibly more generally ‘sacrifice’) and possibly for **CH’ACH’AB’** ‘perforator’ and/or **CH’ACH’** ‘to perforate’ as well (see Chapter V for discussion of T712). I think it is possible that C5a could spell either one here, if one attempts to provide a reading not only from its context (i.e., C5a-T712), but also from its possible acrophonic derivation if one assumes C5a functions phonetically in this text. Contextually, **7u-T712** and **ch’a-T712** are amply attested in CLM texts, suggesting that C5a could be either **7u** or **ch’a** if phonetic. Iconically, as a depiction of an earring (see section 6.5), C5a could have a phonetic reading **7u** derived either from proto-Ch’olan **7uh ~ *7uhy* ‘bead, necklace’, or a phonetic reading **ch’a** derived from an hypothetical ancestor of Modern Ch’ol’s *ch’äl* ‘adornar (to adorn)’ and *ch’äjilil* ‘adorno (ornament)’ (Aulie and Aulie 1978:56-57). Only the broader context of C5 in this text can be used to solve this problem.

D5 corresponds, as already argued above, to T757 **b’a/B’AH**, a very stylized version of it. Given its placement after T712, it may have functioned at least in part as a phonetic complement to the reading **CH’AB’** or **CH’ACH’AB’** of T712, as **CH’AB’(-b’a)** or **CH’ACH’AB’(-b’a)**. However, T757 could be used here both to indicate not

only the final consonant of the root that is conveyed by the preceding logograph but also the vowel of a vowel-initial suffix to the root. Both uses are known from CLM texts.

C6 is composed of three signs: **7u-y(a)-(7)AK'/(7)AK'AB'/(7)AK'B'AL**. The first two signs, T1 **7u** and T126 **ya**, are undoubtedly spelling the third person ergative prevocalic prefix *7uy-, an allomorph of *y-, as **7u-y[a]**. The **ya** sign is used because the vowel of the possessed root is a, and thus serves as a partial phonetic complement; this usage of T126 **ya**, and in general of **yV** signs, is quite common in CLM texts (cf. Stuart 1987). The possessed root is spelled with T504/841, with the known reading **7AK'AB'/7AK'B'AL** 'darkness, night', but also possibly **7AK'** 'tongue' or perhaps **7AK'** 'rope' (see Chapter IV). The **7AK'** 'tongue' reading is appealing given the common association between the T712 + T841 phrases and pictorial depictions of bloodletting from the tongue, while the **7AK'** 'vine' reading is appealing given the common association between the T712 + T841 phrases and pictorial depictions of bloodletting from the tongue performed with a rope or vine with spines. D6 is most likely an early version of T24 **li**, given its common occurrence after the T841 glyph in the T712 + T841 phrases. Its function here is not clear. It could spell a phonetic complement to **7AK'B'AL**, as **7AK'B'AL(-li)**; however, the final vowel of the word in question would be ä, for *7ahk'äb' ~ *7äk'b'-äl, and as mentioned in Chapter III, at least in CLM texts phonetic complements and spellings of roots with ä were always synharmonic (i.e., one would expect T178 **la** or T139 **la**, not T24 **li**). In this context **li** most likely spells a possessive suffix of the form -il or more generally -Vl. In Yukatek, for example, none of the proposed words, whether 7ahk'äb' 'night', 7ak' 'tongue', or 7ak' 'vine' belongs to the class of nouns that take an -il possessive suffix, as seen in the Yukatek forms 7in 7áak'ab' 'my night', 7in-7áak' 'my vine' and 7inw-ääk' 'my tongue' (Bricker, Po7ot Yah, Dzul de Po7ot 1998:3). In Ch'ol the root 7ak' 'tongue' does not take an -il or -Vl possessive suffix either, but 7ak' 'vine' does have the possessed form iy-äk'-il 'his vine' (Aulie and Aulie 1978:27; Bricker 1986:41). The Ch'ol practice, therefore, would be

more consistent with the spellings of T841 if it in fact can represent **7AK'** 'vine'.

Regardless of the actual readings for T841 and T712, there are two possible syntactic interpretations for C5-D6 based on the much clearer facts that T712 spells either a verb or a noun, and that T841 most likely spells a noun. These are seen in **figures 6.63b,c**. In the first, a verbal interpretation of T712 is shown: C5-D5 might spell the inflected verb, and C6-D6 might spell the verb's subject or object, depending on whether C5-D5 is transitive or intransitive. If C5a is phonetic **7u**, then a verbal interpretation of a noun ch'ahb' would require a derivational (i.e., transitivity) suffix. This suffix might be provided by D5 **b'a**, as follows: **7u-CH'AB'-(b')a** for 7u-ch'ahb'-ä-Ø-Ø (3sERG-fasting/sacrifice-APPL-CMP-3sABS) 'He sacrificed.with it'. D5 **b'a** could be spelling a phonetic complement to final consonant of **CH'AB'** and an -ä 'applicative' suffix that would derive a transitive verb meaning 'to VERB with' from a noun such as ch'ahb'. C6-D6 could then be the object of the verb, whatever its precise meaning, but not likely a subject since it most must refer to an inanimate entity which is not likely to be the subject of a transitively-inflected verb. Instead, its subject would most likely be a human agent who has been omitted from this clause, but who would presumably be the only human protagonist mentioned in the text. FLOWER-HAWK. The transitive reading of C5-D5 therefore yields a consistent and straightforward interpretation.

If C5a is phonetic **ch'a** instead of **7u**, then C5-D5 would be an intransitively-inflected verb. T712 is in fact used intransitively in some instances, as mentioned in Chapter V; in such cases it may take **wi** or **ja**. T117 **wi** would probably make T712 antipassive, while T181 **ja** probably spells the *-aj intransitivizing suffix of proto-Ch'olan (see Chapter II). Here T757 **b'a/B'AH** at D5 might provide the spelling of such an intransitivizing suffix as -a(j). As explained in Chapter III, verbs can be derived from nouns with either -a or -aj in CLM texts (e.g., **7AK'-ta** for 7ahk't-a-Ø-Ø dance-INTRVZR-CMP-3sABS 's/he danced' and **7AK'-ta-ja** for 7ahk't-aj-Ø-Ø dance-INTRVZR-CMP-3sABS 's/he danced'). Thus, C5-D5 might be a verb ch'ahb'-a(j)-Ø-Ø

fast/sacrifice-INTRVZR-CMP-3sABS 's/he fasted/sacrificed'. However, in CLM texts the verb T712-**ja** would not only be intransitive, but it would also have a human agent as its subject. Since C6-D6, the only noun phrase that could be a core argument of T712 in this text is not a human agent, this clause cannot be based on an intransitive verb ch'ahb'-a(j)-Ø-Ø. Consequently, an intransitive verb reading of C5-D5 is not feasible, and a verbal interpretation of C5-D5 requires the **7u** reading for C5a.

If C5a is phonetic **7u** but C5b-D5 spells a noun rather than a verb, then C5-D5 would most likely be a possessed noun 'his T712' followed by another possessed noun at C6-D6 'his T841'. Syntactically, it is possible that T712 is possessed by T841, and that in turn, T841 is possessed by an omitted entity, which would most likely be the text's only human protagonist, or possibly the DO pectoral itself. (The second possibility would require that the T712 + T841 phrase somehow refer to jade pendants, as has been previously suggested by Mathews (1985), Fields (1989), Houston (1994), and Marcus (Folan et al. 1995).) Alternatively, C5-D6 could be a couplet, or a paired set of possessed nouns, with a rough meaning 'It is/was his T712. It is/was his T841'. This second alternative would benefit from MacLeod's and Houston's and Stuart's interpretation of T712 as **CH'AB'** 'creation' and of T841 as **7AK'B'AL** 'night, darkness'.¹³⁶

To me the most straightforward interpretation of C5-D5 is as a derived transitive verb. Under such interpretation, all clauses from B2 on can be analyzed as having the same human protagonist as their common subject or discourse pivot. If C5-D5 is a transitive verb and C6-D6 a transitive object, then the discourse pivot from the preceding clauses would be the subject of this clause too. If so, the whole text might read as follows (assuming my favored interpretations of the various clauses, and using the nicknames given to various glyphs): 'It was (that/when) the [A1] became/got STEP-ed. (Then) Mr. Skull... Seated Lord... Flower Hawk surface-GOD.N-ed. (And) Flower Hawk [...]

¹³⁶ In this case T712 and T841 may have served as a magical formula ('It was his/its creation. It was his/its darkness') referring to the conclusion of a set of rituals which may have included the dedication of the DO pectoral itself.

writing-GOD.N-ed, surface-honored, and T712ed his T841'. Thus, if correct, the voice alternations in all the passages from B2 on may have served to maintain the same human protagonist in S and A roles in the whole of the discourse. While this could be accomplished in a number of ways, for example, by means of exclusively transitive clauses given that all the verbs in the text are either root transitives that have undergone antipassivization or in one case a possible derived transitive, it is a characteristic of CLM texts that the preferred discourse pivot was overwhelmingly the S role (Mora-Marín 2001b), followed distantly by the A role, as briefly mentioned in Chapter III.

6.7.7. Structural Analysis 7: PMY Jaguar, A1-B4. In the PMY jaguar BEARDED.GOD.N-ni begins the entire text. It is followed at B1 by the SPROUT sign discussed above as a likely reference to the statuette itself.¹³⁷ The SPROUT sign, from a syntactic point of view, is found in a potentially identical context as the BAT.HEAD, FOREHEAD, and 7IK' signs discussed above: it follows BEARDED.GOD.N-ni at A1, a likely verb, and it precedes a sequence of signs at A2-B2 that may very well spell a personal name, and which may partially match (A2 FLOWER) the name of protagonist from the DO pectoral (FLOWER-HAWK), a fact that supports the identification of A2 as the beginning of a name.¹³⁸ In this way, A1-B2 in the PMY jaguar resembles C1-D2 in the DO pectoral closely, and could be the same type of sentence: V(=O)S. The SPROUT glyph would correspond to the incorporated object of the clauses with BEARDED.GOD.N-ni discussed so far, while FLOWER + ?PENIS would correspond to

¹³⁷ There is iconographic support for the identification of SPROUT as the name of the statuette itself. This evidence, already discussed above (figures 6.42-6.44), suggests that the SPROUT glyph could be referring to the sprout motif shown on the head of the PMY jaguar figurine itself.

¹³⁸ B1 is followed at A2-B2 by FLOWER + ?PENIS (figure 6.64). The use of FLOWER as part of a proper personal name has already been proposed for the DO pectoral. There, the CROSSED.BANDS sign (figures 6.26-6.29) may constitute a form of the FLOWER sign that eventually gave rise to T533/534 NIK/NICH 'flower//child of [father]'. This form is almost identical to the form of the NIK-TE7 glyph found in the PRL conch text at C3 (figure 6.28f), an Early Classic text possibly dating to ca. A.D. 360-400.

the semantic agent, or the intransitive subject of the antipassive verb BEARDED.GOD.N-ni.

As in the case of the DO pectoral clause beginning at C1, there is uncertainty regarding the phrasal and clausal breakup of the glyphs starting at A2 in the PMY jaguar. I think that the clause beginning at A1 probably ends no sooner than at B2 (**figure 6.64b**), but it could easily end as far down as B4 (**figure 6.64a**). There is not enough information to resolve the issue. Still, the present data can be parsed in at least two ways in accordance with Mayan grammar and with the grammar of CLM texts. The simplest analysis is that in **figure 6.64a**: A1 is an antipassive verb, B1 its incorporated object, and A2-B4 is the name of the subject. A3 would correspond to the probable Late Preclassic counterpart of T832 B'ULAY, commonly used as the name of a type of *wäy* or animal spirit in CLM texts. B3 has been described by L. Anderson (1993) as a BAT.HEAD glyph; however, all BAT.HEAD signs in CLM texts, and also the one at D1 in the DO pectoral, show the characteristic nose of bats, which B3 in the PMY jaguar lacks. I think that B3 could be in fact three signs: B3a could be a form of T60, or some otherwise unattested graphic superfix; B3b may correspond to the outline of T757 b'a/BAH (cf. D5 in the DO pectoral); and B3c, the two dots inside of the possible T757 head, could correspond to T1 7u. In other words, B3 could read 7u-B'AH-?hi 'his/her/its image/self/head' (Houston and Stuart 1996, 1998).¹³⁹ A4 is the MOUNTAIN-la glyph already mentioned above, and B4 is a likely DIVINE-LORD glyph, also mentioned above. The analysis in **figure 6.64a** would apply especially if B3 is not a possessed noun but an unpossessed name or title. A rough translation would read as follows: 'Flower Penis Spotted.Beast ? Mountain Divine Lord SPROUT-GOD.N-ed'.

A more complex analysis is that in **figures 6.64b,c**: A1 is an antipassive verb, B1

¹³⁹ According to Schele and Mathews (1998:347), Nikolai Grube arrived at the reading of 'image' for T757 B'AH in 1995, based on the example from Copan Stela 4. They mention Grube's reading as *winba* 'image, statue', and consisting of both the MIRROR sign and the GOPHER sign.

its incorporated object, A2-B2 is the name of the subject, and A3-B4 makes up a nonverbal clause with a nominal predicate at A3. This analysis would make sense especially if B3 is a possessed noun **7u-B'AH-?hi** 'his/her/its image/self/head'. A rough translation would read as follows: 'Flower Penis SPROUT-GOD.N-ed. The image of Mountain Divine Lord is a spotted jaguar'. Here 'image' might be a metaphor for animal spirit or shapeshifter. In CLM texts the same term was used routinely to label portraits of rulers dressed in the guise of deities (Stuart and Houston 1996). A third interpretation, not illustrated, would take B3 to be an unpossessed noun, possibly a name or title, and as forming part of a nominal predicate beginning at A3: 'Mountain Divine Lord is a spotted jaguar [?]'. In either case, spotted jaguar is most likely a name that directly alludes to the jaguar way that the PMY jaguar figurine portrays.

The third interpretation has one advantage over the first: it allows for topic continuity. Indeed, the subject of the first clause, Flower Penis, would likely be the proper name of the individual whose epithet and title make up the subject of the second clause, Mountain Divine Lord. The second interpretation would have as subject the nominal phrase 'The image of Mountain Divine Lord', whose head is 'image'. Though 'image' would not be coreferential with the S of the first clause, Flower Penis, it is possible that this may have been a case of an S/GEN pivot; in other words, coreferentiality may have been intended between the S of the first clause and the possessor (genitive noun phrase) of the subject of the second clause, a pattern that is attested in CLM texts (Mora-Marín 2001b). Although these alternatives are all likely, I favor a reading of B3 as **7u-B'AH-?hi**. This would make the second and third interpretations would seem better options.

I cannot yet offer a structural analysis for the remaining part of the text. However, as mentioned in the caption to **figure 6.45**, A8-B8 could correspond to A8a-**ni-chi**. If A8a is an unusual rendering of T544 **K'IN** then A8-B8 could be **K'IN-ni-chi** k'in-ich 'sun-face'. If A8a is a verbal logograph, then A8b, if correctly identified as **ni**, could

spell an antipassive suffix with a completive status marker (-n-i). Also, if A8a is a verbal logograph, B8 **chi** could potentially spell a verb phrase particle such as an hypothetical Yukatekan or Ch'olan descendant of proto-Mayan *+ik 'already' which might have undergone the *k > *ch change, as suggested by Terrence Kaufman (John Justeson, personal communication 2001).

6.7.8. Structural Analysis 8: GOD.N-ni and GOD.N. The four instances of the BEARDED.GOD.N glyph discussed in detail so far are spelled BEARDED.GOD.N-**ni** (**figures 6.65a-d**). There is a fifth instance in the UNP clamshell that is simply spelled BEARDED.GOD.N, with no orthographically explicit suffix (**figure 6.65e**). I think that the difference in spelling and morphosyntactic context between these two types of verbs can provide strong support for the interpretations offered so far. As suggested above, all examples of clauses with BEARDED.GOD.N-**ni** as the verb can be analyzed as being VOA clauses semantically, and V(=O)S clauses syntactically: they consist of incorporative antipassive clauses. However, the only example of BEARDED.GOD.N without a suffixed **ni** sign in the four texts, that at A1 in the UNP clamshell text (**figure 6.10**), is one where the clause can unambiguously be shown to be VS, with the S consisting of a likely inanimate object represented by the FOREHEAD glyph at A2. This result is based on the occurrence A3-A4 of STAR-**yi**, a verb amply attested in CLM texts, immediately after the FOREHEAD glyph. The occurrence of the STAR-**yi** verb strongly points to A2-A3 as a clausal boundary. Consequently, the first clause is found at A1-A2, and consists of an intransitized verb (BEARDED.GOD.N) and a glyph referring to an inanimate object (FOREHEAD) serving as an intransitive subject. The intransitivity of the BEARDED.GOD.N glyph is signaled by its lack of ergative person markers. Moreover, the absence of a suffix that could potentially make the verb antipassive, and the absence of a nominal phrase that could potentially represent an underlying ANP immediately after it point to a mediopassive or passive interpretation for this clause. So A1-A2 in the UNP clamshell (**figures 6.65e, 6.66a**) could be a passive or mediopassive

sentence involving an infixed -h- ‘(medio)passivizer’, whose proto-Mayan reflexes are attested in Ch’olan and Yukatekan, and which would not be explicitly represented orthographically. A rough translation would be: ‘The surface/flat.thing was/got GOD.N-ed’. Next I discuss the UNP clamshell text as a whole.

6.7.9. Structural Analysis 9: UNP Clamshell. The following clause would start at A3-A4 with T510:17 STAR-yi (figure 6.66b). The T510 STAR verb is a logograph whose reading is still uncertain. It exhibits the following spelling patterns in CLM texts (figure 6.67): (1) STAR; (2) STAR:EARTH; (3) STAR-yi; (4) STAR:EARTH-ya; (5) STAR-yi-ya; and (6) STAR:EARTH-ja/AJ (Piedras Negras Stela 12). I agree with Stuart (1995:305) that the STAR and STAR:EARTH spellings are probably equivalent. In other words, STAR may be a shortened or abbreviated graphic form of STAR:EARTH. This means that the EARTH sign is not to be taken into account as part of the reading of the verb, and that the spelling variation is essentially the following: (1) STAR; (2) STAR-yi; (3) STAR-ya; (4) STAR-yi-ya; and (5) STAR-ja/AJ. All of these spellings are consistent with spellings of passive or mediopassive verbs, suggesting STAR is a root transitive verb. For example, the verb CH’AK ‘to chop’, a known root transitive verb, can exhibit the following spelling patterns (figure 6.68): (1) CH’AK-(k)a; (2) CH’AK-ka-ja; and (3) CH’AK-yi. All of these are cases of an intransitivized form of the verb, and agree with patterns (2) and (5) of the STAR glyph.

It has been proposed by various authors (cf. Stuart, Houston, and Robertson 1999) that pattern (2) spells an hypothetical -V₁y ‘mediopassive’ suffix, given fully phonetic spellings of such verbs (e.g., pu-lu-yi ~ PUL-yi). However, the modern Ch’olan languages do not have a -V₁y ‘mediopassive’ suffix; Eastern Ch’olan has a suffix -V₁y ‘completive status of root intransitives’, according to Kaufman and Norman (1984:103). Given that these authors provide as an example of this suffix the form pul-uy, based on the root transitive verb *pul ‘to burn’, among various root intransitives such as cham-ay based on cham ‘to die’, it may very well have been that this suffix was used on certain

types of intransitive verbs, whether root or derived.¹⁴⁰ I prefer not to assume a reading for T510 in this verbal context.¹⁴¹

Assuming that A3-A4 STAR is a passive or mediopassive verb, what follows it at A5-A8 could refer to its subject (underlying O), most likely an inanimate entity (e.g., a weapon, a temple, a city), given the contexts of STAR in CLM texts. Or it could be an oblique expression referring to the agent/causer of the event. Or it could be referring to both the subject and the oblique expression of the agent/causer. The agent/causer of STAR events in CLM texts was only expressed by means of the **7u-T526/528(-hi-ya)** glyph, with various proposed readings and functions. It is clear that this **7u-T526/528(-hi-ya)** glyph of CLM texts expresses both agents of passive and mediopassive clauses, as well as causers of root intransitive and positional clauses. (Thus, by itself, this glyph does not allow one to discriminate between a root transitive or intransitive interpretation for the verb represented by STAR.) If T526/528 represents a noun, and if STAR represents a root intransitive or positional verb, such clauses could amount to cases of an inverse voice such as that attested in Akatek (cf. Zavala 1997), Awakatek, and other Mayan languages. If T526/528 represents a verb, it would make up a separate clause from that of the preceding verb.

In the UNP clamshell there is no obvious expression of this **7u-T526/528(-hi-ya)** glyph. However, the text ends at A7-A8 with two glyphs that probably represent the titles of a person. The first, at A7, is the title **7AJAW** 'lord'. The second, at A8, is not

¹⁴⁰ Kaufman and Norman (1984:103) reconstruct the suffixes **-i* and **-Vy* 'completive' for Eastern Ch'olan root intransitives, providing examples from Ch'orti' like the following: *cham-ay* 'die', *pur-uy* 'burn', *lok'-oy* 'go out', *t'ab'-ay* 'go up'.

¹⁴¹ In the Piedras Negras Throne I text T510 appears spelled *tu-T510-yi-la*. This spelling supports a reading *t-u-CVy-il* PREP-3sERG-VERB-POSS 'for his/her/its VERBing'. From this one can see clearly that the verb root or stem must end in the consonant *y*. If the root ends in *y* then this would support the reading *hay* 'to destroy [towns]' proposed by various authors. If the *y* spells part of a proposed mediopassivizing suffix, rendering a form *t-u-CVC-(V)y-il* PREP-3sERG-VERB-MPASS-POSS 'for his/her/its being/getting VERBed', then it does not aid in the decipherment of the STAR logograph's reading. The first interpretation is preferable over the second on the grounds of simplicity.

recognizable or interpretable, but contains what I argue to be an early form of T130 **wa** on the top part. This could suggest, since all examples from CLM texts of the STAR verb have an inanimate object or location as subject, that A7-A8 expresses the name of the agent/causer of the STAR event, and in turn, that some agency expression such as the **7u-T526/528(-hi-ya)** glyph or an equivalent might be expressed somewhere in between A4 and A7. Another possibility is that the clause that begins at A3-A4 with STAR-**yi** ends at A4; in other words, that it has no explicitly expressed subject and/or agent/causer, but is simply followed by another clause.

The glyphs at A5-A6 can be transcribed as follows: **7u-NOSE-TWO.FINGERS-na**.¹⁴² The MONKEY.HEAD at A5 may be an allograph of phonetic **7u** (Stuart 1991), while A6c is a form of T23 **na**. A6a is a NOSE sign attested in CLM texts, albeit rarely, such as at Yaxchilan (e.g., Lintel 49:C8a, spelling NOSE-**si-wa-K'IN-ni**) and other sites during the Early Classic. I cannot tell what its reading might have been from such scarcity of data.¹⁴³ A6b might be a depiction of two fingers, with the first one showing a possible fingernail.¹⁴⁴ All that matters for now is that **7u-NOSE-TWO.FINGERS-na** appears to correspond to either a possessed noun (cf. **7u-** 'his/her/its') or a transitively inflected verb (e.g., a root transitive verb ending in **n** and taking a completive status marker **-a(w)**, or a derived transitive verb with an **-an**

¹⁴² The cleft element might actually be logographic **SIJ(YAJ)** for **sihj(yaj)** 'be born' or '(s/he/it) was born', as argued by Houston and Stuart (1996).

¹⁴³ Hypothetically, a NOSE icon might have been used acrophonically for phonetic **ni**, or logographically for **NI7** based on ***ni7** 'nose, tip'.

¹⁴⁴ As suggested to me by John Justeson (personal communication 2000), the TWO.FINGERS icon could possibly be a reference to 'tips of fingers', and therefore a possible association with the icon NOSE via the word for nose ***ni7** 'nose, tip'. Another possibility is that the two fingers might simply be used here for the numeral two, ***cha7** in Ch'olan, or ***ka7** in Yukatekan, or phonetically for **cha** or **ka** based on the numeral TWO. One reading based on these alternatives is **7u-ni-ka-na**, which could spell an inflected form of proto-Ch'olan ***nihk** '(vi) to move, wiggle'. Such a verb would explain the presence of a **na** sign to spell an apparent suffix, since in Modern Ch'ol the verb **nihk** is transitivized with the suffix **-an**, as **nihk-an** (Aulie and Aulie 1978:83). Thus, **7u-ni-ka-na** could represent **7u-nihk-an-Ø-Ø** (3sERG-move/wiggle-TRNVZR-CMP-3sABS) 's/he/it moved/wiggled it'.

'transitivizer' suffix).¹⁴⁵ If a possessed noun, then A7-A8 would correspond to the possessor, and the possessed noun would be the intransitive subject (SNP) of the STAR-yi verb: 'The A6 of A7-A8 was/got STAR-ed'. If a root or derived transitive, then A7-A8 would most likely correspond to the ANP of the 7u-NOSE-TWO.FINGERS-na verb, and its omitted ONP would correspond to the omitted SNP of the preceding STAR-yi verb, which in turn is probably coreferential with the SNP of the preceding clause (i.e.. FOREHEAD): 'It_i was STAR-ed. A7-A8 VERBed [A5]_i'.

Given CLM examples of clauses with STAR-yi verbs, it seems more likely that A5-A6 might refer to the subject of the clause, and that A7-A8 might refer to the possessor of that subject (**figure 6.66b**). One such example is found in Tortuguero Monument 6 as STAR-yi-ya + 7u-TOK'-7u-PAKAL + 3-B'ALAM + JOY-CHAN-7AJAW 'The flint and the shield of Three Jaguar Circled Sky Lord was/got STAR-ed'. If so, then the whole text might read: 'The [A2] was/got GOD.N-ed. The [A6] of [A7-A8] was/got STAR-ed'. In such an analysis it is not clear whether A2 and A6 are different names for the same entity. In the interpretation in which A3-A4 STAR-yi and A5-A8 are separate clauses, however, it would be possible for all clauses (A1-A2, A3-A4, A5-A8) to be part of an S/S/O pivot chain, with the referent of FOREHEAD as the pivot: 'The surface/flat.thing_i(S) was/got GOD.N-ed and ____i(S) STAR-ed . [A7-A8]_j(A) [A5-A6]-ed it_i(O)'. While this interpretation is more appealing from a discursive point of view, it is by no means more likely than the previous one on purely syntactic grounds.

6.8. Structural Analysis and Interpretation of Other Texts.

6.8.1. DO Celt. The DO celt (**figure 6.11**), dated to A.D. 120 by Schele and Miller (1986) based on the first two clauses at A1-B2 (**figure 6.69**), contains two

¹⁴⁵ If 7u-NOSE-TWO.FINGERS-na spells a root transitive verb, the following can be said about the verb root in question. First, it begins with a consonant other than h and ʔ. Second, it ends in n. Third, if the a of the na sign partially spells the [-V₁(w)] 'plain/completive status of root transitives' suffix as -a, then the vowel of the verb root must be a. This leaves a transitive verb root of the general form Ca(G)n.

columns and seven rows of glyph blocks, for a total of fourteen extant glyph blocks. At least one full row of glyph blocks is missing at the top, but more likely two or three rows are missing, given that the celt is cut at the level of the ruler's chin in the front pictorial portrait, suggesting that his entire head and headdress are missing. Such elements would occupy enough space for at least two or three more rows of glyph blocks, and if so, the total number of glyph blocks may have been of eighteen or twenty. The DO celt text is more like Early Classic texts in its formal compositional traits than the texts discussed so far: there is a higher incidence of graphic affixing (all glyph blocks), and not one glyph block is occupied by just one sign. This difference with respect to the DOPS texts suggests: (1) that the DO celt represents a significantly later development than what is attested in the DOPS texts, or (2) that the DOPS texts represent a different regionally-defined subtradition which may have been roughly contemporaneous with that of the DOPS. The date of A.D. 120 for the DO celt, more consistent with the similarities its text exhibits with respect to later Early Classic texts, supports the earlier dates proposed here for the DOPS.

The DO celt text has been mentioned and discussed by Coe (1976), Ayala (1983), Schele and Miller (1986), Fahsen (1987, 1988), Fields (1989), L. Anderson (1993), and Mora-Marín (1995b, 1997). Coe (1976:120) noted that this text was certainly Mayan in type, but did not attempt any glyphic identifications or readings. Ayala (1983:202) proposed the identification B4 as the WEST glyph, and A7 as T544 K'IN. Schele and Miller (1986:82-83) have discussed it in more detail, providing the following suggestions. In addition to the possible date of A.D. 120: (1) B4 as the K'IN.IN.HAND glyph attested in the San Diego Cliff Carving, a stone bowl shown in Coe (1973:26), Yaxchilan Lintels 22:A4 and 47:C4, and Copan Stela F:A10; (2) A6 as an 7AJAW title; (3) B8 as a title including the sign for PENIS common in titles from the Classic period; and (d) A6-B7 as the name of the portrayed ruler.

Fields (1989:Figure 54) has pointed out too that the numeral four at B2a in the

DO celt, shown as four U-shaped elements instead of the more standard circular elements, is identical to that of the same numeral in the CNT 1625 text (see below), as well as in a distance number of 12 days, four months, and one year on Tikal Stela 31:D17, a monument dated to A.D. 445. A fourth instance of this form of the numeral four may appear on Yaxchilan Lintel 35:B5, dated to A.D. 537, though in this example the U-shaped elements representing counting units of one are rotated 180 degrees with respect to the examples in the three other texts. It is very likely that the Early Classic Tikal and Yaxchilan cases were attempts at revivals of archaic sign forms for the purpose of conferring legitimacy to the texts themselves, and that the trait is in fact Late Preclassic in age.¹⁴⁶ Another comparison made by Fields (1989:Figure 38) is that between B4 in the DO celt, *?ya-K'IN.IN.HAND-la*, and the glyphs on Yaxchilan Lintel 22:A4 as *ya-K'IN.IN.HAND-la*, Yaxchilan Lintel 47:C4 AS *?ya-K'IN.IN.HAND-la*, the San Diego Cliff Carving at A9a as *ya-K'IN.IN.HAND-ma*, and the Dyker stone bowl at as *K'IN.IN.HAND*.

In Mora-Marín (1995b, 1997) I provided a detailed discussion of several glyph blocks, some of which I have since revised. There I suggested that: (1) A3c/B4c/A5b might be early forms of T178 *la*; (2) B3a might be a form of T548 *HAB'/TUN* 'year, anniversary'; (3) A4 might be a form of the phrase *ta/TI/TA-7AJAW-le(-le)* 'in rulership'; (4) A3 might be a verbal expression referring to accession to office; (5) B4 might be a kin or relationship term, possibly a variant of *y(a)-(7)AL(-la)* '(He is) the child of [mother]'; (6) A5-B5 would name the mother of the text's protagonist if B4 is in

¹⁴⁶ One can assume that this rendering of FOUR is old enough that scribes writing on A.D. 445 considered it archaic. The instance in the DO celt should be used as a point of reference; doing so would lead one to propose that this rendering of FOUR is at least as early as A.D. 120 in Mayan writing. In other early scripts in Mesoamerica (e.g., Zapotec) the numeral ONE was customarily rendered with U-shaped elements. This practice goes as far back in time as the San Jose Mogote Monument 3 text, datable to ca. 500-300 B.C., which uses a U-shaped element for ONE. It can be proposed that the U-shaped rendering of ONE may even date to the hypothetical ancestral script in which bar-and-dot numerical notation originated.

fact a form of **y(a)-(7)AL(-la)**; (7) A5a is an IGUANA/SNAKE glyph while B5b is a human head glyph; (8) A6-B6 might be the titles of the person named at A5-B5; (9) A7 might be a possessed noun **7u-K'IN-li/IL**; and (10) B7 might read **yo-7AT(-te)**, possibly for yox-7at 'scarred penis' (Jones 1991; Lounsbury 1989).¹⁴⁷ I also followed Fields (1989) in her suggestion that A6a could be an early equivalent of the water-group affix now known to read **K'UH/K'UHUL** 'god/divine' (Ringle 1987; Stuart, Houston, and Robertson 1999), which would make A6 read **K'UHUL-7AJAW** 'divine lord'.

L. Anderson (personal communication 1995) has also suggested to me that A1b/A2b in the DO celt could be T74/255 **ma** or **-OM**. I pointed out in Mora-Marín (1995b) that A1b/A2b resembles very closely the glyph at F10/H2 in the text of Kaminaljuyu Stela 10, which in turn is identical to MS101, an Epi-Olmec sign read **si** (Justeson and Kaufman 1993). Whether the resemblance is accidental or the result of an historical relationship between the two scripts is not clear. In any case, it is a factor that should not be taken into account for the purposes of decipherment of A1b/A2b in the DO celt. Regarding the title at B7 in the DO celt, Schele (1995) has proposed the reading chan yoat 'tall erection', though I do not think the evidence supports this reading. More recently, David Stuart (Grube and Martin 2001) has suggested that the common PENIS title, attested at B7 in the DO celt, might read **YOPOL=TE7-7AT**, with T115, normally phonetic **yo**, as logographic **YOPOL** 'leaf' based on proto-Ch'olan *yop-ol 'leaf'.¹⁴⁸ This is a very good possibility, but so far, to my knowledge, unconfirmed by purely phonetic substitutions.

¹⁴⁷ As Jones (1991) notes, the term in question, yòox 'his scab' from 7òox 'scab' in Modern Yukatek (Bricker, Po7ot Yah, Dzul de Po7ot 1998:316), which may have been attested in pre-Ch'olan as yoox if at all, is likely given the iconic composition of the accompanying PENIS glyph. Indeed, this PENIS glyph usually is shown with two or more scabs.

¹⁴⁸ Modern Ch'ol has yop-ol 'leaf of' and yop-om 'leaf (singular)', according to Aulie and Aulie (1978:143). The context of the DO celt title might require the first form, yop-ol, given that it would be possessed by a following word, te7, a term attested in Modern Ch'ol as yop-o=te7 'foliage' (i.e., /yop-ol=te7/). One would expect to find a purely phonetic spelling of the title in question as follows: **yo-po(-IV)-TE7**.

The following is what I now consider to be a possible transcription, clausal breakup, transliteration, and translation of the text (**figures 6.69-6.71**):

(6.3)	A1-B1:	TZUTZ-ma/OM		8-BAK'TUN
		tzutz-(o)m-Ø(+a)		8-bak'tun
		complete-POT-3sABS(+ENCL)		8-Bak'tun
		'8 Baktuns would be completed'.		
	A2-B2:	TZUTZ-ma/OM		4-K'ATUN
		tzutz-(o)m-Ø(+a)		4-k'a(l)=tun
		complete-POT-3sABS(+ENCL)		4-K'atun
		'4 Katuns would be completed'.		
	A3-A4:	?-?-la	?-7u-?CH'AK[?ka]-la	ta-7AJAW
		?	?	tä+7ajaw
		?	?	PREP+lord
		'... as lord'.		
	B4-B5:	?ya-K'IN.IN.HAND-la	SNAKE-?la	?7u-V/N
		y-a(l/CVl)	?	?
		3sERG-?	?	?
	A6-B6:	?DIVINE-7AJAW	?-?-?WINIK	
		k'uhul-7ajaw	?-?-?winik	
		divine-lord	?-?-?person/man	
		'(He is) the [KIN.TERM] of [A5-B6]'.		
	A7-B7:	7u-K'IN-li	yo/YOP(OL)-TE7-7AT	
		7u-k'in-Vl/il	yo(x)/yopol=te7-7at	
		3sERG-sun-POSS	scarred/leaf=tree-penis	
		'It is the <u>k'in</u> of Scarred/Leaf-Tree Penis'.		

The following is another possible transliteration and clausal breakup of B4-B6 (**figure 6.70**):

(6.4) B4-A5:	?ya-K'IN.IN.HAND-la	IGUANA/SNAKE-?la	
	y-a(I/CVI)	?	
	3sERG-?	?	
	'(He is) the [KIN.TERM] of [A5]'.		
B5-B6:	?7u-N	?DIVINE-7AJAW	?-?-?WINIK
	7u-?	k'uhul-7ajaw	?-?-?winik
	3sERG-?	divine-lord	?-?-?person/man
	'(He is) the [KIN.TERM] of Divine Lord [B6]'.		

If B4 **?ya-K'IN.IN.HAND-la** corresponds to a kin term, then so might B5, which could have a glyph-initial **7u** sign based on the surviving outline of the sign at B5a. If correct, the sign at B5a could spell the third person possessive prefix, and the sign at B5b, if paralleling the possible kinship expression at B4-A5, could be a kinship term: **?7u-KIN.TERM**. There is no evidence within this text alone to support these interpretations. These very tentative interpretations are instead based on the possibility that **ya-K'IN.IN.HAND-la** is a relationship glyph at Yaxchilan Lintels 47:C4 and 22:A4, which I intend to study more carefully at a later time.¹⁴⁹ I suggest the generic label **KINTERM** for **ya-K'IN.IN.HAND-la** simply because there is a precedent for kinship statements in jade plaques from the Early Classic period (see Chapter V). And I suppose that B5 could be another kinterm because whenever there is a kinship expression in a Mayan texts another one usually follows immediately. B5 is the most likely place where for a

¹⁴⁹ The example at C4 in Lintel 47 follows the name of a personage referred as **7u-NICH'-na ? CHAK-TAN-na B'ULAY(-b'u-yu)** 'the son of ? Red-Chest-B'ulay'. Consequently, it follows a kinship expression. At the same time, it is followed by the name of another personage, suggesting that **7u-NICH'-na** and **ya-K'IN.IN.HAND-la** could be introducing parentage/lineage information about a personage whose name probably precedes the **7u-NICH'-na** glyph. A similar structure, with one of the names of the personages recurring, is found on Lintel 22. A more thorough analysis of these passages is not possible here, but suffice it to say that a superficial comparison suggests **ya-K'IN.IN.HAND-la** indeed functions as a term relating two persons; whether the term expresses a relationship of kinship, rank, or ownership is not possible to determine at this point.

following kinterm might be.

T74 **ma** or T255 **ma/OM** at A1b and A2b is worth of a few words. If read **ma**, and therefore analyzable as an abbreviated T74:617:255, which is read **ma** as a unit according to Stuart (in Schele 199X:), it could represent a contracted form of -om ‘potential participle’, as suggested to me by Lloyd Anderson (personal communication 1995). If so, then the form of the suffix would have been -m, with the a of the **ma** sign possibly representing a following morpheme (probably an enclitic) of the form +a(G), if anything. If logographic, then it would only spell the potential participle. Since the verb is clearly not transitively inflected, due to its lack of an ergative agreement marker, one possible inflection is tzutz-(o)m-Ø(+a) ‘it would be completed (here)’. The subject of the verb corresponds in each clause to a time count. However, in CLM texts T255 may not function as phonetic **ma** unless T74 is also present. Otherwise it is only found as a suffix, always in a glyph/word-final context, whether the glyph/word ended in m (e.g., **B’ALAM-T255**) or not (e.g., **TZIK-VARIABLE-HAB’-T255**). This suggests that T255 may not represent anything at all in this text. One example of this is found in the Lake Güija Plaque (Chapter V), where I proposed the spelling **MAM(-ma)** for glyph A2, based on which I suggest that T255 is functioning as a complement **ma**.

At A7 one finds **7u-K’IN-li/IL**, which also occurs in the Hombre de Tikal figurine, dated to A.D. 406 (Fahsen 1988b), at D1. T544 **K’IN** usually stands for *k’in ‘day, sun’. Barrera Vásquez et al. (1980:401) lists the following entries and subentries among others for Colonial Yukatek: <k’in> ‘día, sol’, <k’in> ‘tiempo’, <k’in> ‘fiesta’, <k’in> ‘nuevas o fama’, <k’in> ‘calentar’, <k’in> ‘reinar’, and <k’inal> ‘cosa caliente, que da calor o caliente; cosa tibia, medianamente caliente; calor de alguna cosa’. There is also a possibly relevant term from Tzeltal, k’in-al ‘property’ (festival-NOMINALIZER), provided by Kaufman (1971:77). If this last term is the intended one, then A7-B7 might be roughly translated as ‘(It is) the property of Scarred/Foliage Penis’, possibly in reference to the DO celt itself. Another possibility is the meaning ‘news’, in which case

A7-B7 could be translated as '(It is/was) the news of Scarred/Foliage Penis'.

6.8.2. CNT 6125. The CNT 1625 text (**figure 6.13**) is relatively straightforward in that the majority of its signs are known and deciphered. However, one key sign is at least to me unknown and this has precluded a fuller reading and understanding of the text. In Mora-Marín (1995b) I have provided a description of the text and possible readings for some of the glyphs. The most important reading is that of A2 as T62:62 **yu-yu** or **y(u)-(7)UY** (**figure 6.72a**), an expression probably representing proto-Ch'olan **y-uhy* 'his/her/its bead/necklace' (1997b, 2000). This spelling confirms Grube's (1991) proposal that T62 was derived acrophonically from proto-Ch'olan **7uhy* 'bead/necklace', a proposal that can be confirmed also with iconographic evidence showing T62's iconic motivation as pectoral and ear beaded ornaments (**figures 6.72b-d**). Based on this reading, the first two glyphs can be read and translated as follows: **4-HAB'/TUN + yu-yu/(7)UY** for *4-tun y-uhy* (4-stone 3sERG-bead) 'his/her/its bead is Four-Stone'. 'Four Stone' is likely the proper name of the bead, which may have been the central piece of a four-bead assemblage, as iconaphic depictions of tubular pectoral beads would suggest.

A4 shows the spelling **7u-?-b'i/TAN-li** (**figure 6.73a**). Unfortunately, the glyph at A4b, depicting an adorned human head, is not recognizable and cannot be read for the moment. The glyph at A4c is identified by some epigraphers as phonetic T585 **b'i** and by others as logographic **TAN** for **tahn* 'chest' (Grube and Martin 2000). I think it is a form of phonetic **b'i**, given examples such as that in **figure 6.74**, a proprietary statement on a conch shell trumpet reading **7u-yu-b'i** most likely for *7uy-ub'* 'his/her/its conch trumpet', a possessed form of *hub'* 'conch shell, trumpet', attested in Colonial and Modern Yukatek (Bricker, Po7ot Yah, and Dzul de Po7ot 1998:113; Swadesh, Álvarez, and Bastarrachea 1991:54). The glyph at A4d is T24 **li/IL**. Together with **b'i**, A4c and A4d might spell an instrumental suffix *-ib'* followed by a possessive suffix *-il*. Another possible interpretation would be a *-bil* 'passive participle'. Whether **b'i-li** spells an instrumental or passive participial suffix, A4b must spell a verb root, given that the

instrumental suffix -ib' can only derive nouns from verb roots, and that the participial suffix -b'il can only inflect transitive verbs. Thus, the unknown glyph at A4b, which is also found at A6a (**figure 6.73b**), must be a phonetic sign that can spell a CVC verb root or a logographic sign for a verb root.

A5 is composed of T124 **tzi/TZIK** at A5a, STAR at A5b, and a glyph depicting the PRINCIPAL.BIRD.DEITY at A5c (**figure 6.75**). This may very well be the name of the PRINCIPAL.BIRD.DEITY, with T124 likely functioning as a phonetic complement or to spell a separate root, and STAR likely functioning as a semantic classifier. As mentioned below regarding the PMA flare, the PRINCIPAL.BIRD.DEITY glyph and the T561 SKY glyph are interchangeable in some contexts. The STAR sign could be an allusion to an association between the PRINCIPAL.BIRD.DEITY and SKY glyphs.

Taking all of the above into consideration, the following transcription, transliteration, and translations for the CNT 6125 text are possible (**figure 6.76**):

(6.5)	4-TUN/HAB'	yu-yu/7UY
	4-tun-Ø	y-uhy
	4-stone	3sERG-bead/necklace
	7u-B'AH	7u-?-b'i-li/IL
	7u-b'ah	7u-?-(i)b'-il
	3sERG-image	3sERG-?-INSTR-POSS
	tzi/TZIK-PRINCIPAL.BIRD.DEITY^{STAR}	?-?-li/IL
	?-Sky.God	?-?il
	Sky.God	?-POSS

'The bead of the image of the [A4] of the Principal Bird Deity [...A6] is 4-Stone'.

'Its bead is 4-Stone. It is the image of the [A4] of the Principal Bird Deity [...A6]'.

I think that A4 probably refers to some implement worn or used by the Principal Bird

Deity; I prefer the instrumental interpretation of the suffix -b'-il because it contains a possessive suffix -il, which makes sense given that the entity denoted by A4 is possessed by the entity denoted by A5. Future research may allow for a precise reading of A4b/A6a and possibly A6b. For now I do not have a preference for either of the two translations given in (6.5); the first one is appealing because if correct the whole text would consist of a single, relatively simple clause composed of a nominal predicate and a subject composed of three nested possessive phrases ('The V of the W of the X of Y is a Z').

6.8.3. BMA Mask. The BMA mask text (**figure 6.12**) consists of four glyph blocks arranged in a single column, which is visually divided into two subcolumns. The first subcolumn being about a fourth the width of the second one starting at the top, and increasing in width toward the bottom. The first three glyphs on the first subcolumn are oriented vertically while all the glyphs on the second subcolumn are oriented horizontally. The following transcription, transliteration, and translation for the text can be proposed (**figures 6.77a,b**):

(6.6)	7u-B'AH	HAND-CENTIPEDE
	7u-b' ah	?-Chapaht
	3sERG-image	?-Centipede
	?ko/BONE-STEP-?GOD.C¹⁵⁰	?7u//?wa-?le//7AT-WINIK¹⁵¹
	?-?-?	?-?//7at-winik
	?	?-penis-person
	'It is the image of [A2-A4]'.	
	'It is the image of [A2-A3]. It is the [A4b] of [A4c]'.	

¹⁵⁰ The sign at C3a, which resembles T110 **ko**, appears in two other texts: on vessel K751 and in the Cleveland jade plaque in **figure A1.36**. In some contexts it appears to have a reading **CHAK**, since it seems to substitute for the regular **CHAK** 'red, great' logograph.

¹⁵¹ The Copan Xukpi stone at F2 has a similar form of the **WINIK** sign (Schele, Grube, and Fahsen 1994).

The first alternative, 'It is the image of [A2-A4]', is the more convenient of the two given the number of uncertainties at this point. It is worth noticing here that A4a, if phonetic **7u**, would be essentially the same graphic design of T11 in Thompson's catalog, while B3b in the DO celt text, also phonetic **7u**, corresponds to T3 except for its lack of a triangular element intervening between the dots. Also, A4b in the BMA mask and B7c in the DO celt are essentially the same sign rendered in a very similar style. The reason for reading B7c in the DO celt as **7AT** 'penis' is its context: it is found in a titular phrase known from phonetically spelled examples in CLM texts. However, in the BMA mask the context is different, and nothing about it suggests either a logographic reading **7AT** 'penis' or a phonetic reading **le**. Lastly, A1a and A1b have very close counterparts in the CNT 6125 text.

6.8.4. PMA Flare. The PMA flare text (**figure 6.14**) is problematic for two reasons: (1) because of its circular format it is not obvious where the text begins and ends; and (2) two key signs are still not deciphered to most epigraphers's satisfaction. A very thorough epigraphic has been attempted by Justeson, Norman, and Hammond (1988).¹⁵² These authors propose the following interpretation of the text: 'The holder of power is the Sun God. The Sun God casts corn to/for the sky god'. They interpret A1-A2 as the beginning of the text, and as consisting of a single sentence ('The holder of power is the Sun God'). B1-B2 they argue is the beginning of the second sentence, and corresponds to its transitive subject ('The Sun God...'). C1a-C1b they propose to be a form of *7ay-aan 'existential particle' in pre-Yukatekan (they reconstruct proto-Yukatekan *yàan) functioning as an auxiliary verb, which they argue was a borrowing from a pre-Ch'olan form *7ay-aan. C1c they propose to be the transitive root meaning 'to scatter': they argue that the third person ergative prefix required for a transitive reading of the sentence was not represented because it was orthographically unnecessary, even if derivational affixes such as they assume C1b to be were not. Together, B1-C1b

¹⁵² See also Hammond (1987).

form a subject + verb sequence ('The Sun God casts...') missing an object. C2 they read as a prepositional phrase expressing an indirect object or benefactive role (... 'to/for the Sky God...'). They note that an inverted T51/53 sign spells the preposition that heads that phrase; this preposition, they observe, whether **ta*, **tä*, **ti*, or **ti7* (depending on the Greater Lowland Mayan language represented in the text) descended from proto-Mayan **tya*. Lastly, glyph D, the MAIZE.GOD glyph, they argue is used to represent CORN, and functions as the direct object of the verb ('The Sun God casts corn to/for the Sky God').

However, at the time of their analysis (ca. 1982), some of the signs in the text had yet to be deciphered, or were read incorrectly. These include: A1a, now known to be phonetic *yo* (Stuart 1987); A1b recently proposed by David Stuart to be phonetic *7o* (Stuart, Houston, and Robertson 1999); C1c, now known to be phonetic *ye* (Stuart in Schele 1994:39) and logographic **CHOK** 'to throw down' (Stuart 1995:227); and C1b, read by those authors as *na* but now known to be the Late Preclassic and Early Classic form of T24 *li*.¹⁵³ I think a different analysis can be attempted given these new readings and assuming, as I have for the case of the DOPS texts and the other texts discussed here, that important inflectional markers were not omitted unless they were deleted in speech for (morpho)phonological reasons.

Starting with A1 for convenience (**figure 6.78a**), we find either *yo-le* **K'INICH.7AJAW** or *yo-7o* **K'INICH.7AJAW**. If A1b is an early form of T188 *le*, as proposed by Justeson, Norman, and Hammond (1988), then *yo-le* could spell a cognate or precursor of Modern Yukatek *y-óol* 'his heart/will/energy/spirit' (Bricker, Po7ot Yah, Dzul de Po7ot 1998:17, 316), which may have had a Ch'olan cognate of the form *y-ohl*. The *e* of the proposed *le* sign may have been silent, or it may have provided a final enclitic of the form *+e(G)*, such as the topic marker of Yukatekan (i.e., *+e7* ~ *+eh* ~ *+e*), or a demonstrative, such as the second position demonstrative **+e* 'there: not near and

¹⁵³ The phonetic reading of T710 as *ye* was determined by David Stuart too.

not far; complement to definite article' (Kaufman 1989:50, Part A). However, the second position demonstrative in the noun phrases of Yukatek, Itzaj, Tzeltal, and possibly too of proto-Mayan followed the possessor of the head noun. This makes it less likely that such a marker would immediately follow a possessed noun and intervene between it and the possessor; as I show below, there is a noun phrase at A2 that would follow the hypothetical **+e* demonstrative, making it unlikely that such a demonstrative was represented at all. Yet another possibility is that the *e* of the proposed *le* sign represents a possessive suffix *-e|* whose *|* was not pronounced or simply not spelled. There are two *-eel* suffixes that can be reconstructed to Central Mayan (Eastern Mayan and Western Mayan): **-eel* 'alienable/personal/intimate possession', **-eel* 'inalienable possession', and **-eel|* 'abstractive' (Mora-Marín 2000a).¹⁵⁴ The last two can be reconstructed for Late proto-Mayan (Yukatekan and Central Mayan).¹⁵⁵

If A1b is an early form of T279 7o, as proposed by Stuart for an example from

¹⁵⁴ This phonetic reading is supported by the likely example in the Covarrubias Subjudice text (Covarrubias 1957) of a glyph showing T23 *na* followed immediately by what appears to be the same glyph as A1b in the PMA flare, and possibly spelling *na-le* (figure 79b); this combination of *na-l(V)* also appears in the Delataille pot (Berjonneau and Sonnery 1985) as *na-la* (figure 79a), but there is nothing in particular to suggest that the two compounds spell the same word. Their contexts are rather different. The *na-?le* glyph in the Covarrubias Subjudice appears text- and clause-initially, while the *na-la* glyph in the Delataille pot appears as one of two adjectival modifiers of the noun *ka-ka-w(a)* 'chocolate', which form a noun phrase that is the object of the preposition *ta/TA/TI* spelled with T51, which in turn functions as a modifier to *yu-k'i-b'(i)* 'his cup', the glyph that opens the text. However, despite the differences, both contexts support a function of the glyphs in question as participial/stative verb forms or adjectives. The text-initial context in the subjudice could suggest a predicative function for the *na-?le* glyph, and therefore, a possible stative verb or adjective; the adjectival modifier context of the *na-la* glyph in the Delataille pot suggests either an adjective or a stative verb.

¹⁵⁵ Given that the likely possessor of the noun represented by A1 is a deity or a person impersonating a deity, and that as I argue the possessed noun refers to the PMA flare itself, **-eel* 'alienable/personal/intimate possession' or **-eel* 'inalienable possession' would work depending on whether *y-óol* referred to the jade flare of the Sun God, in which case alienable possession would be expected (unless the Sun God was understood from external knowledge to be the one who crafted the object itself), or whether it referred to the soul of the Sun God, in which case inalienable possession would be expected.

Yaxchilan Lintel 37:C7 (Stuart, Houston, and Robertson 1999), then **yo-7o** could perhaps spell yóo7 ‘above, upon’ (Bricker, Po7ot Yah, Dzul de Po7ot 1998:316).¹⁵⁶ There are iconographic, contextual, and linguistic reasons favoring the reading **yo-le**. First, Taube (1998) has very convincingly argued that jade earflares, such as the PMA flare, symbolized the conduit that the ‘soul’ or ‘heart’ of deceased rulers used to travel to the underworld after death. Such an identification would support the **yo-le** reading for y-óol (Yukatekan) or y-ohl (Ch’olan) ‘his heart/soul’ over the **yo-7o** reading for yóo7. Also, the common occurrence of ownership statements in portable texts would support the y-óol ‘(It is) the heart/soul of...’ interpretation as a reference to the jade earflare itself. And lastly, from a sociolinguistic point of view, one would expect a more formal form of the word for ‘above, upon’, yóok’ol, rather than its less morphologically explicit form, yóo7, to have been the preferred form in an elite and therefore formal context. Henceforth I assume the reading **yo-le** to be the more likely reading of A1a.

A2 is the Sun God’s name, as already pointed out by Justeson, Norman, and Hammond (1988). Here I assume the reading **K’INICH.7AJAW** k’in=ich 7ajaw ‘Sun-face Lord’. Though it is possible to analyze the first word etymologically as k’in-ich, where -ich is a derivational suffix present in words such as tun-ich and others, the iconography of the Sun God supports the first analysis: the eyes of the Sun God are often depicted with an infixed T544 **K’IN** ‘sun’ sign, and since the Yukatekan word *wich or *hich meant ‘eye, face, fruit’, the meaning ‘Sun-face/eye’ for k’in=ich seems plausible.

At B1a is the glyph **K’INICH.7AJAW** again, only this time followed by two signs: first at B1b by a sign consisting of a cartouche surrounding a U-shaped element partly surrounded by dots, and by a numerical coefficient **FOUR** at B1c. Justeson (personal communication 2001) has suggested to me that B1b may very well be a precursor to the so-called “water-group” affix, T32/33/35/41/43, and may therefore read

¹⁵⁶ I am unaware of any other lexical item in Ch’olan-Tzeltalan or Yukatekan languages that could be spelled with a sequence of syllables **yo-7o** and which would be grammatically appropriate in this context.

K'UH/K'UHUL 'god/divine'. If so, B1a, **K'INICH.7AJAW**, B1b, **K'UH/K'UHUL**, and B1c, **FOUR**, would likely make a phrase **K'INICH.7AJAW ?K'UH-FOUR**, analyzable as a nominal phrase with a head noun k'in=ich 7ajaw 'Sun-face Lord' modified by the compound k'uh-chan 'god-four', itself analyzable as a possessee-possessor pair.¹⁵⁷ The phrase is thus interpretable as 'Sun-face Lord, God of Four' (with 'God of Four' in apposition to 'Sun-face Lord'), or as 'The God of Four is the Sun-face Lord' (with 'The God of Four' as the subject of the nominal predicate 'Sun-face Lord'), as observed by Justeson (personal communication 2001). As pointed out by Justeson, Norman, and Hammond (1988), the numeral four is associated with the Sun God, given that the SUN.GOD head glyph can actually be used with the value FOUR in calendrical contexts. The sign at B1b, Justeson, Norman, and Hammond (1988:117) point out, may be a precursor to the Classic and Postclassic Lowland Mayan sign T24/121, which occurs preposed to deity head glyphs that can function as numerals (e.g., DEATH.GOD for 'ten', MAIZE.GOD for 'eight'). T24/121 occurs with these glyphs, moreover, only when they do not function as numerals. So it is either a semantic determiner for deities, as argued by those authors, or a sign with a reading **K'UH/K'UHUL** 'god/divine'. So the phrase 'Sun face Lord, God of Four' makes good sense, and its grammaticality and semantic well-formedness are supported by a parallel construction in glyph D (see below).

Glyph C starts with T840, which as shown by Justeson, Norman, and Hammond (1988) may correspond to Postclassic T667. T667, those authors demonstrate, expresses

¹⁵⁷ An example is the following Modern Ch'ol compound: xujk=k'äb'äl 'elbow', consisting of xujk 'corner', the possessee, and k'äb'äl 'arm/hand', the possessor (Warkentin and Scott 1980:14-15). Modern Tzotzil also has compounds of this type, as in jol=na 'roof', consisting of jol 'head', the possessee, and na 'house', the possessor (Haviland 1980), and so does Modern Tzeltal, as in jol=witz 'summit', consisting of jol 'head', the possessee, and witz 'mountain', the possessor (Slocum 1948). Modern Itzaj also contains examples of this structure, as in kal=k'ab' 'wrist', consisting of kal 'neck', the possessee, and k'ab' 'hand', the possessor (Hofling 2000:109-118; Hofling and Tesucún 1997:20-21). This construction is likely found in all Greater Lowland Mayan languages. In Mora-Marín (2000e) I present evidence suggesting that this construction can be reconstructed for Late proto-Mayan (proto-Mayan minus Wastekan), possibly earlier.

the concept of existentiality or location that is often expressed in Mayan languages by descendants of proto-Mayan *7ar ‘existential particle’. In Postclassic texts the glyph can appear inflected variously as T667-ya-na (Dresden 31c:A1), 7a-T667-na (Dresden 65b), 7u-T667-wa (Dresden 30c:C1), 7u-T667-?mu (Madrid 39a:C1), 7u-T667:667 (Madrid 43c:A2). The example from the PMA flare spells T840-li-ye, where C1c is most likely T710 in its phonetic use as ye rather than logographic SCATTER assumed by Justeson, Norman, and Hammond, while the example from INS spells ya-T840-li.¹⁵⁸ The examples studied by Justeson, Norman, and Hammond (1988:Figure 3.16) clearly indicate a verbal or predicative function related to the expression of location. The examples with 7u- and -wa in the Dresden codex make T667 look like a root transitive verb, while examples like T667-ya-na and 7a-T667-na make it look as a spelling of yaan or 7an, the existential particle of Yucatek also used as an auxiliary verb or aspectual particle, and for the expression of predicative possession in all Yucatekan languages, and in Mayan languages in general (Bricker, Po7ot Yah, Dzul de Po7ot 1998:5; Justeson, Norman, and Hammond 1988).

Assuming it represents the existential particle in the codical contexts, its reading might be (Y)AN: T667-ya-na would point to YAN(-ya-na) while 7a-T667-na would point to (7a-)7AN(-na). Given the apparently contradictory spellings (7u-T667-wa pointing to a root transitive, and 7a-T667-na ~ T667-ya-na pointing to an intransitive predicate), I prefer to simply assume that T667/840 is either a verbal logograph or a phonetic sign used in the spelling of both transitive or intransitive verbs which may subcategorize for the expression of a locative prepositional phrase in addition to that of a core nominal argument.

If C1c is not a transitively inflected verb **CHOK**, given that it may instead be phonetic ye (and that no ergative prefix, necessary for a transitive inflection of a verb, is

¹⁵⁸ The reason for this is that T710 normally requires the addition of the INCENSE.DROPS icon in order to be read logographically as **CHOK** ‘to throw down’.

present), it is likely an intransitive verb or predicate, whatever clause it belongs to. Based on its spelling alone, T840-**li-ye** could be an intransitive verb or particle, where T840 may be a phonetic sign spelling CV-**li-ye**, or a logographic signs spelling CVI-(**l**)**i-ye**. In either case a word CVI-iy-Ø+e(G) (RIV-CMP-3sABS+ENCL) could be represented, with the i of T24 **li** and the y of T710 **ye** possibly spelling the completive status marker of root intransitives -i(y) (cf. proposal in Chapter II of proot-Ch'oaln *-V₁y ~ *-i 'completive status of root intransitives'), and with the e of **ye** possibly spelling an +e(G) enclitic, such as Yukatek's +e7 'topical enclitic'. CLM texts generally spell root intransitive verbs in this manner: for example, **hu-li-ya** may spell hul-iy-Ø(+a) (arrive-CMP-3sABS(+ENCL)) 's/he/it arrived here'.

Another possibility is for T840 to spell a logograph that does not end in i, and for the i of **li** to spell part of a contracted -V₁i 'stative' suffix: CV₁C-(V₁)i-iy-Ø+e(G). If so, the verb could be positional, consistent with the use of T840/662 in Postclassic texts as well. Also, if a -V₁i 'stative' suffix is present, -iy may not be a completive status marker of root intransitives, but some type of enclitic, and the e of **ye** may be silent or spell a second enclitic +e(G). Still, Knowles (1984) shows two completive status forms for positionals in Modern Chontal: -wan(-i) and -(V)i(-i). It may thus be possible that the suffix spelled could be of the form -(V)i(-i)(y) 'completive status of positional'. While this is possible, I favor a root intransitive interpretation, since it requires a less complex morphological scenario.

C2 consists of a prepositional phrase: T51/53-PRINCIPAL.BIRD.DEITY or T51/53-PBD for convenience.¹⁵⁹ Justeson, Norman, and Hammond (1988) analyzed the phrase as 'to/for the Sky God'. However, given the common presence of locative prepositional phrases following the verbs expressed with T667/840 in the codices, and

¹⁵⁹ The PRINCIPAL.BIRD.DEITY glyph at C2b is used as a katun period sign, and is also interchangeable in some contexts by a SKY sign (T561). However, it is not clear whether it has the same reading as either one or is simply semantically related to them.

given the likelihood that C1c is not a verb but a phonetic sign *ye* aiding in the spelling of a verb represented in C1a-c, C2 could simply be ‘in the sky’.

T51/53 has a phonetic reading **ta**, which is seldom attested however; more commonly it is used to spell the generic preposition descendant of proto-Mayan **tya* (Mathews and Justeson 1984). If logographic, T51/53 could therefore read **TI(7)/TA**, given the possible forms of the preposition as **tā** (proto-Ch’olan-Tzeltalan, pre-Ch’olan), **tā** (proto-Ch’olan), **tī** (Yukatekan and Ch’olan), and **ti7** (Yukatekan). Since C1 lacks an ergative prefix, it is likely an intransitive verb or predicate rather than a transitive verb; consequently, its clause is likely to have just one core nominal subject argument (S), with no core nominal object argument. This subject argument could be either glyph B, **K’INICH.7AJAW ?K’UH-FOUR**, the Sun God’s name, in which case the resulting clause would exhibit an SV[PP] word order, or glyph D, in which case the clause would exhibit a V[PP]S word order.

Interestingly, both glyph B and glyph D have the same structure (i.e., ‘X, God of [NUMERAL]’ or ‘The God of [NUMERAL] is X’). What this suggests is that only one of the two interpretations of this structure is possible if either of the two glyphs functions as the subject of the verb at C1. The correct interpretation has to be a nominal phrase interpretation: ‘X, God of [NUMERAL]’. As pointed out by Justeson, Norman, and Hammond (1988), glyph D1a is the MAIZE.GOD head glyph, which can also function as the numeral EIGHT in calendrical contexts. It is followed at D2a by the same glyph present at B2a, and at D2b one finds the numerical coefficient EIGHT instead of FOUR, as at B2b. Thus, glyph D parallels the structure of glyph B exactly: DEITY.NAME + ?K’UH + NUMERAL. Just as the numeral four is associated with the Sun God, the numeral eight is associated with the Maize God. Thus, glyph D may read MAIZE.GOD ?K’UH-EIGHT, which can be interpreted as ‘The Maize God, God of Eight’ or ‘The God of Eight is the Maize God’. If the subject of the intransitive verb at C1 is glyph B, glyph D could be part of the prepositional phrase that begins at C2 (e.g., ‘to/for the Sky God

and the Maize God, God of Eight'), or part of a separate clause following that prepositional phrase (The God of Eight is the Maize God'). If glyph D is the subject of the intransitive verb at C1, then glyph B would have to be part of a separate clause.

So there are different possible ways of parsing the text. Before I present these it is necessary to explain the grammatical constraints and the remaining variables.

(1) There likely is a clausal boundary between glyphs A2 (SUN.GOD) and B (SUN.GOD ?K'UH-FOUR), since they refer to the same entity, the Sun God. Given this, one clause ends at A2 and another begins at B1.¹⁶⁰ This also means that the text has at least two clauses (i.e.,A] [B....).

(2) This constraint implies that glyph B constitutes either a clause with a nominal predicate by itself (i.e., 'The God of Four is the Sun God'), or a fronted (focused /topicalized) nominal argument (i.e., 'The Sun God, God of Four'). If the former case is correct, then the equational clause that glyph B defines exhibits an unmarked predicate-initial word order. If the latter case is correct, then the clause that contains the noun phrase represented by glyph B exhibits a marked SV, AV, or OV word order, depending on the precise grammatical function that glyph B is assigned by the predicate of the clause.

(3) Glyph D (MAIZE.GOD ?K'UH-EIGHT) exhibits a structure identical to that of glyph B, and it would therefore be preferable to analyze its structure in the same way as that of glyph B, whether as an equational clause (i.e., 'The God of Eight is the Maize God') or as a nominal phrase (i.e., 'The Maize God, God of Eight') with a grammatical function of S, A, O, or GEN within its clause. If analyzed as an equational clause, then the number of clauses increases: one would end at glyph A2, another would be comprised by glyph B alone, and another would be comprised by glyph D alone, which means that glyph C would also constitute by itself at least one clause. This suggests that the text as a

¹⁶⁰ There is an alternative way of interpreting this SUN.GOD/SUN.GOD sequence, as I explain below. However, I argue that this alternative is less preferable.

whole can have anywhere between two or four clauses, possibly five if glyph C were to consist of two clauses. However, glyph C has been shown to consist of a likely verb and a prepositional phrase, which means that there is at most just one clause in glyph C. Thus, the text can have between two to four clauses.

(4) Glyph C1 (T667-**li-ye**) is likely an intransitive verb, since it lacks an ergative prefix, since it resembles in structure the spelling of root intransitive verbs, and since the clause that it appears in can be interpreted as having just one core nominal argument (whether glyph B or D) and one oblique nominal argument as the object of a preposition (glyph C2).

(5) Given the last factor, glyph B or D can only function as the S of this verb if analyzed as a noun phrase (i.e., ‘The Sun God, God of Four’ or ‘The Maize God, God of Eight’). If neither is analyzed as a noun phrase, but instead as an equational clause (i.e., ‘The God of Four is the Sun God’ or ‘The God of Eight is the Maize God’), then neither can be an explicit S argument of the verb. The verb would have to have an implicit argument (i.e., ‘he/it VERBed’) that would presumably refer to a referent mentioned in a preceding clause (e.g., Sun God), or to one mentioned in a subsequent clause (e.g., Maize God).

(6) If both glyphs B and D are analyzed as noun phrases, rather than as self-contained equational clauses, then one and only one of the two can be the S of the verb at C1. If B is the subject of this verb, then D must be either part of the prepositional phrase at C2 (i.e., part of the noun phrase that functions as object of the preposition at C2a), or part of a separate clause starting with glyph D.

(7) If glyph B is the S of the verb at C2, then glyph D could be a self-contained equational clause (although it would be preferable to analyze it as having the same structure as glyph B, or in other words, as a noun phrase), a fronted nominal argument of a predicate starting with glyph A1, or a nominal predicate of a clause starting with glyph D and ending with glyph A2.

(8) If glyph B is the S of the verb at C2, and the clause comprising glyphs B and C exhibits in this way a marked word order (i.e., SV), then it is less likely that glyph D would be a fronted nominal argument of a predicate starting at A1. The reason for this is that in the structure of narrative discourse, a fronted nominal argument is usually coreferential with an argument in a preceding or following clause. More specifically, it may presuppose prior mention (and hence function as a discourse topic) or anticipate continuity (and hence function as a discourse focus). If glyph D were a fronted nominal argument of an immediately following predicate, then one would expect either prior or subsequent mention of its referent. But this condition is not met in any obvious or parsimonious way.

(9) Based on the preceding point, the most constrained scenario, from a discourse point of view, would be one precluding two fronted non-coreferential arguments in a text composed of two clauses, and one favoring one clause with a fronted argument following (as topic) or preceding (as focus) another clause with unmarked word order that makes reference to that same argument.

Taking these constraints and alternatives into account, the following parsing is the one that I favor over other possible ones:

(6.7) MAIZE.GOD **?K'UH-EIGHT** **yo-le** SUN.GOD
hun-nal-7ey k'uh=waxak y-óol k'in=ich-7ajaw
one-maize-? god=eight 3sERg-heart sun=face-lord
'The heart of the Sun God is the Maize God, God of Eight'.
SUN.GOD **?K'UH-FOUR** T840-li-ye
k'in=ich-7ajaw k'uh=chan CVI-iy-Ø+e(G)
sun=face-lord god=four VERB-CMP-3sABS+ENCL
ta/TI/TA-PBD/SKY
tā/ta/ti(7)-PBD/chan
PREP-PBD/sky

‘The Sun God, God of Four (is the one who) VERBed in the Sky’.

‘The Sun God, God of Four (is the one who) VERBed for/to the PBD’.

This parsing assumes: (1) that the first clause (D1-A2) shows unmarked predicate-initial word order and introduces two participants, the Maize God (‘The Maize God, God of Eight’) (D1) as the nominal predicate, and the Sun God (A2) as the possessor of the subject (A1); (2) that the second clause (B1-C2) shows marked SV word order, with the likely intransitive verb T840-**li-ye** (C1) following its fronted subject ‘The Sun God, God of Four’ (B1-B2); (3) that T840-**li-ye** is followed by a prepositional phrase, **ta/TI/TA-PBD/SKY** (C2), as a locative (i.e., ‘in/to the sky’) or benefactive (i.e., ‘for the PBD’) oblique argument; (4) that the fronted subject at B is in topic discourse function, making reference to the noun phrase in possessor role in the preceding clause at A2. The text could be interpreted as ‘The heart(A1) of the Sun God(A2) is the Maize God, God of Eight(D). The Sun God, God of Four(B) (is the one who) VERBed(C1) in.the.sky/for.the.PBD(C2)’.

Another parsing could be the following (**figure 6.78**):

(6.8)	yo-le	SUN.GOD	
	y-óol	k’in=ich-7ajaw	
	3sERG-heart	sun=face-lord	
	‘(It is/was) the heart of the Sun God’.		
	SUN.GOD	?K’UH-FOUR	T840- li-ye
	k’in=ich-7ajaw	k’uh=chan	CVI-iy-Ø+e(G)
	sun=face-lord	god=four	VERB-CMP-3sABS+ENCL
	ta/TI/TA-PBD/SKY	MAIZE.GOD	?K’UH-EIGHT
	tā/ta/ti(7)-PBD/chan	hun-nal-7ey	k’uh=wāxāk
	PREP-PBD/sky	one-maize-?	god=eight
	‘The Sun God, God of Four (is the one who) VERBed for the Sky God and the Maize God, God of Eight’.		

*'The Sun God, God of Four (is the one who) VERBed in/at the sky and the Maize God, God of Eight'.

In (6.8) the Sky God and Maize God have to be conjoined as an oblique nominal argument in benefactive role (i.e., 'the Sky God and the Maize God, God of Eight') inside of the prepositional phrase (i.e., 'for the Sky God and the Maize God, God of Eight'). A locative interpretation for C2-D2 is simply non-sensical: 'in/at the sky and the Maize God, God of Eight'. And while an interpretation of D1-D2 as a separate equational clause (i.e., 'The God of Eight is the Maize God') would be grammatical from a syntactic point of view, it would not make much sense in terms of discourse, since the Maize God would be mentioned just once and in a way that does not relate him to any of the remaining nouns in the text (A1, A2, C2b), making for an awkward or incomplete narrative. The parsing and interpretation in (6.7) is preferable because it links the two clauses of the text with a recurring participant, the Sun God, and because the example of pragmatically marked word order can be explained in terms of its discourse context. Assuming that A1 spells *yo-le*, I have included it in **figure 6.80** with other possible names or references to portable objects in the texts discussed in this chapter.

6.9. Conclusions. The following conclusions can be drawn from the epigraphic and iconographic analysis presented in this chapter.

(1) The texts comprising the Dumbarton Oaks Pectoral Subtradition share a number of artistic, calligraphic, orthographic, grammatical, and thematic traits with one another, suggesting that scribes from closely interacting schools, and likely speaking the same language, were responsible for their production.

(2) The texts very likely date to different parts of the Late Preclassic period, with the DO pectoral as the earliest example, possibly dating to ca. 300-100 B.C., the PMY jaguar and the JM spoon possibly dating to ca. 100 B.C.-A.D. 1, and the UNP clamshell possibly dating to ca. A.D. 1-150. The BMA mask and the CNT 6125 texts may postdate the UNP clamshell, perhaps dating to ca. A.D. 100-200, and the PMA flare,

archaeologically dated to ca. A.D. 1-250 is more likely to date to ca. A.D. 200.

(3) The texts exhibit a number of calligraphic and orthographic characteristics attested in CLM texts. The following visual composition conventions may be attested: single- and double-column formats, graphic main signs and affixes, compounding and infixation, overlaying of signs, semantic determiners, blank heads, animated versions of signs, multiple signs for the same CV sequence, glyph block punctuation based on syntactic units (verbs, nouns) and graphic composition (main signs). In addition, the following orthographic spelling conventions may be attested: phonetic sign usage to spell affixes and complements to logographs, and underspelling of inflectional affixes in lexicalized phrases. I discuss these further in Chapter VIII.

(4) The texts are as grammatically explicit as CLM texts can be, though less so from a phonological perspective, given the lack of unambiguously fully phonetic spellings so far, and the low incidence of possible phonetic complementation. The only possible exceptions to this last statement are the spellings T130:REED possibly for **wa-7AJ** (likely read as **7AJ-wa** or **7AJ-aw** for **7ajaw* ‘lord, ruler’) and **si-hu**, if correctly identified as such.

(4) The content of the texts is consistent with the dedicatory genre in general (see Chapter IV). There are allusions to the dedication of the portable texts by means of several verbs: **BEARDED.GOD.N**, **STEP**, T124 **TZIK**, and possibly others such as **STAR-yi**. There are allusions to the ritual performance of rulers in the guise of supernaturals, such as a spotted jaguar animal spirit, a possible centipede animal spirit, and the Principal Bird Deity. The title **MOUNTAIN-LORD** is itself suggestive of the association between rulership and ceremonial performance atop platforms or mountains (Helms 1979; Freidel and Schele 1988a, 1988b, 1989; Weiner 1992), of the association between rulership and legitimate claims to the land (McAnany 1997), and possibly too of the association between rulership and the landscape and architecture built or modified through state-sponsored action (Chapman 1999; Rathje 2000).

(5) The earliest texts discussed here provide strong and eloquent evidence for the origin of the **7AJAW** titles, both the T533 and T168:518 archetypes. Following earlier suggestions by Stuart (1992), these archetypes seem to originate iconographically in the representations of symbols of rulership, such as flowers and reed tassels, and of artistic renditions of flowers and reed tassels in the form of jade beads and bead assemblages.

(6) The characteristics and contents of the texts suggest a significant amount of continuity between the Late Preclassic and Classic scribal traditions.

UNIT III:

DISCUSSION

CHAPTER VII:

LATE PRECLASSIC INTERETHNIC AND INTERREGIONAL INTERACTION

7.0. Overview. In this chapter I discuss new evidence for script transfer and diffusion between the Mayan lowlands and highlands, and also between Mayans and Epi-Olmecs during the Late Preclassic period. I argue that the evidence from Abaj Takalik, Kaminaljuyu, El Mirador, and Kichpanha suggests: (1) that the same script was in use throughout the Mayan region by the end of the Late Preclassic period; (2) that the script may have represented a Mayan language, most likely a Ch'olan language, throughout the area of its distribution; and (3) that portable elite objects were likely instrumental in its diffusion. I also present evidence of script transfer between Mayan and Epi-Olmec scribes during this period. Such interethnic interaction probably took place in the context of what I call the Late Preclassic Southeastern Ceremonial Complex, given the commonalities in iconographic and textual themes attested at sites such as La Mojarra, Izapa, Kaminaljuyu, El Mirador, and also in a series of unprovenanced portable inscriptions.

7.1. Goals. The main goal of this chapter is to place the data discussed in the preceding chapters into a broader social perspective. I do this by briefly discussing data suggestive of interaction between the highland and lowland Mayan regions, as well as between Mayans and Epi-Olmecs. I am also interested in establishing a foundation for future research on such interactions, given their increasing importance in understanding the sociopolitical and economic history of Mesoamerica.

7.2. Methods. The methods I apply in this chapter are mainly epigraphic and iconographic. I discuss formal traits of written texts as well as specific sign and sign-

sequence readings. I also discuss in detail the iconography of certain sign and sign sequences, and attempt to infer from the data possible instances of intersocietal interactions.

7.3. Highland and Lowland Mayan Script Diffusion. The question of highland and lowland interaction within the Mayan region is a timely one. In part this is because of the apparent precociousness of the highland region in the development of a tradition of pictorial art and hieroglyphic writing that has been related to that of the Classic and Postclassic Lowland Mayan civilization (Freidel 1981; Parsons 1986; Taube 1992). It is also timely from a linguistic point of view, because it is unclear what languages were spoken at Late Preclassic highland sites with hieroglyphic texts like Kaminaljuyu, Abaj Takalik, El Baul, and Chalchuapa. What would be the implications, for example, of Ch'olan texts at Abaj Takalik during the Late Preclassic for the history of the Highland and Lowland Mayan civilizations?

There are formal features that suggest a phylogenetic or diffusion relationship between the highland and lowland Mayan script during the Late Preclassic period. Justeson et al. (1985) and Justeson and Mathews (1990) have discussed some of them in detail, and have suggested based on them a close relationship between the Kaminaljuyu-Abaj Takalik-El Baul scripts and the Lowland Mayan script (cf., Chapter I). Here I mainly point out a few additional traits suggestive of a close relationship as well as of linguistic affiliation.

First, Kaminaljuyu Stela 10 (400-200 B.C.), Abaj Takalik Stela 53 (Late Preclassic), and El Mirador Stela 2 (ca. A.D. 1-100), all share the following traits (**figures 7.1a,b and 7.2a**): finely incised glyphs (whether on raised panels or not), double-column format, and a vertical stacking of numeral bars occupying a full glyph block. This last trait survived in at least one Early Classic Lowland Mayan text, inscribed on a tripod pottery vase (**figure 7.2b**). The first trait, the fine incisions and small-sized glyphs are paralleled of course in the Epi-Olmec tradition (La Mojarra Stela 1, Chiapa de Corzo

Stela 2, Tres Zapotes Stela C). In general, Late Preclassic texts from Kaminaljuyu, Abaj Takalik, and the Mayan lowlands (e.g., El Mirador, Polol, Loltun, San Diego Cliff) exhibit the two styles of carving that would characterize Classic Lowland Mayan texts, namely lightly incised small-sized glyphs and low-relief bigger-sized glyphs.¹⁶¹ Epi-Olmec texts differ in that all of them exhibit a single-column format. But like the early texts from the Mayan region, Epi-Olmec texts allow numerical coefficients to occur in isolation with respect to preceding and following signs. The double-column format is clearly an innovation confined to the Mayan region (Coe 1976; Justeson et al. 1985; Justeson and Mathews 1990). At the time of his writing, Coe (1976) regarded Kaminaljuyu Stela 10 as a single-column format text, now generally thought to be a double-column format text. Also, Abaj Takalik Stela 53, the only text from that site with a double-column format, had not been discovered when Justeson et al. (1985:38) first wrote their discussions of the evidence pertaining the double-column format in the highlands.¹⁶² These characteristics conform to the conclusion reached by Justeson et al. (1985) regarding the relationship of the Kaminaljuyu, Abaj Takalik, and El Baul scripts to the Classic Lowland Mayan script, and the differences between the Classic Lowland Mayan script and the Epi-Olmec script, as discussed in Chapter I.

There is additional evidence for interaction between the Mayan highlands and lowlands. Abaj Takalik Stela 5 (see caption to **figure 7.3**), with a Long Count date placing its dedication at A.D. 125 (Justeson 1997), and the unprovenanced DO celt

¹⁶¹ Epi-Olmec texts at a first glance appear to consist of light incisions, but as pointed out to me by Justeson (personal communication 2001), low and high relief carvings may coexist in such texts, and some glyphs are even partly sculpted.

¹⁶² Given that the evidence for columnar format comes from texts which contain either single glyphic columns or pairs of glyphic columns, it is not possible to say whether these sites had a mixed single- and double-column format like CLM texts. This is only possible to determine when a text has at least three columns in sequence. Also, as pointed out to me by Justeson (personal communication 2001), even if Abaj Takalik Stela 53 were not known, the paired columns on the front of Abaj Takalik Stela 5 cannot serve as evidence for a single-column format: the positional framework long counts (i.e., those lacking period signs and stacked vertically) can only be interpreted if arranged vertically in a single column, and they therefore imposed a constraint the graphic layout of the text.

(**figures 7.4**), with its dedicatory date of A.D. 120 (Schele and Miller 1986), bear a very close iconographic and stylistic resemblance (**figure 7.5**). Indeed, two of the features that are compared in **figure 7.5** may be unique to these two pictorial representations in Mayan art: the shark-like jade bead tied to the knees with its speech scroll, and the two-pointed danglers attached to the sheens. The close iconographic and stylistic resemblance between these representations suggest, at the very least, that the same artistic and iconographic conventions were in use A.D. 120-125.¹⁶³ Whatever differences may exist could easily be explained by the different media and scale on which the two are carved. I would thus consider these representations to be the result of the same artistic tradition, perhaps even of the same artistic school.

The DO celt is recognizably Mayan due to the presence of third person ergative markers 7u-, spelled with T1 **7u** (**figure 7.6a,b**), a possessive suffix -il or -Vl spelled with T24 **li** (**figure 7.6b**), and a generic preposition, spelled with T51/53 **ta/TI/TA** (**figure 7.6c**), as well as other correspondences with later Lowland Mayan texts discussed in more detail in Chapters VI and VIII. The forms of these morphemes are not conducive to a very narrow determination of the linguistic affiliation of the text. Indeed, *7u- is traced back to proto-Mayan, and so is the suffix *-iil or *-il. T51/53 was generally used in CLM texts to spell the generic preposition of Mayan languages, which descends from proto-Mayan *tya and is attested in the Greater Lowland Mayan languages variously as tä, ti, and ti7. It cannot be used for a narrow linguistic affiliation for that reason (see Chapter VIII).

In any case, as mentioned in Chapter VI, the front side of the DO celt shows the JESTER.GOD icon, whose glyphic counterpart was read HUN ‘paper (headband)’ in CLM texts, with a possible T23 **na** sign as a phonetic complement, suggesting the reading HUN(-na) for a descendant of proto-Mayan *hu7N ‘paper, book’. The possible presence

¹⁶³ It is also possible that the two renderings depict the same individual, and that the DO celt may have originated in the Mayan highlands at or near Abaj Takalik.

on the left side of Stela 5 of the title **7AJAW** ‘lord, ruler’ with a phonetic complement T130 **wa** as **7AJAW(-wa)** (**figure 7.7**), as noted by Justeson in 1985 (personal communication 2000), makes it likely that the text from Stela 5, like that on the DO celt, is in fact in a Mayan language and script. Thus, it is very likely that the Abaj Takalik scribes were Mayan. A more specific linguistic affiliation for the Abaj Takalik scribes is not possible based on this term, since all branches in the family have descendants of the proto-Mayan term **7aajaaw* ‘king, lord, owner’ (Kaufman and Norman 1984:115). Below I discuss the case of T548 **HAB’/TUN** as an indirect piece of evidence supporting a Ch’olan affiliation for the site.

Additional data relevant to highland-lowland interaction come from the Kichpanha bone stylus (KCH bone) (**figure 7.8a**), from the eastern lowlands in Belize, and Abaj Takalik Monument 11 (ABT 11) (**figure 7.8b**). Gibson et al. (1986) uncovered the inscribed bone, probably a rib from a manatee or tapir, in what may be the mounded burial of a scribe. The burial dates to ca. 100 B.C.-A.D. 100 based on the ceramic evidence, according to Gibson et al. (1986:11), although Kathryn Reese-Taylor (personal communication 2001) has informed me that the associated ceramics have been redated to ca. A.D. 150 or later. Based on the artifacts associated with the bone, which include a miniature ink pot and a shell ink container, Stephen Houston has argued that the bone may have been a stylus (Gibson, personal communication 1997). This artifacts, and the associated jade, shell, and obsidian artifacts in the grave, could indicate that by ca. A.D. 150 scribes already held high status, and were probably of noble class, even in small peripheral communities.

ABT 11, stylistically Late Preclassic, but lacking a more secure dating due to relocation at the end of the Classic period (Graham and Porter 1989:47), shows a glyphic correspondence with the KCH bone (**figure 7.9**), as pointed out in Mora-Marín (1995b, 1996, 1997). Mora-Marín (1996) suggests that the glyph at A3 in the inscribed bone may be a name or title, based on its occurrence after the more readily identifiable glyphs

K'UH(UL) 'god/divine' and **K'IN(ICH)-B'ALAM** 'Sun(-face) Jaguar' at A1-A2 in the KCH bone (Grube 1992:326). The corresponding glyphs in ABT 11 show the same basic sign elements and an elaborate style full of details, consistent with a rather late Late Preclassic date of ca. A.D. 150, and thus consistent with the dating of the KCH bone (recall also the more elaborate style of the PMA flare, datable to ca. A.D. 200-250). This example suggests the same script was in use in highlands and lowlands.

Still another example suggestive of highland-lowland interaction is the occurrence of the name **7EB'-XOK** '(lit.) step-shark' (Grube and Martin 2000:II-6; Martin and Grube 2000:26), the name of the Tikal royal dynasty founder, in an inscribed jadeite ear plug from Kaminaljuyu (KJ plug) (**figure 7.10**) dated to the Esperanza phase or ca. A.D. 400-600.¹⁶⁴ If the ear plug originated at Kaminaljuyu, then it suggests that the scripts from Kaminaljuyu and Tikal used the same signary (other signs in the ear plug have Classic Lowland Mayan counterparts).

As noted by Justeson (personal communication 2001), the preceding examples could instead be instances of the incorporation of signs from a foreign script into a local script. Such practice is attested widely in CLM texts, as in the case of the Ballcourt Marker at Tikal, which incorporates Teotihuacan-style signs (Schele and Freidel 1990), the case of the Tabasco-style day signs in squared cartouches without day sign pedestals at sites like Seibal, Ucanal, Jimbal (Justeson et al. 1985), and the case of Xochicalco glyphs at Chichen Itza (Justeson, personal communication 2001; Proskouriakoff 1974). Even if this were the case it would still point to a significant degree of highland-lowland scribal interaction.

7.4. Late Preclassic Ceremonial Complex and The Izapan/Kaminaljuyu Horizon. The concept of a Greater Izapan civilization (Justeson et al. 1985), and of an Izapan Horizon style (Kappelman 1997; Parsons 1986), does not imply a monolithic ethnic, linguistic, or artistic entity or phenomenon. It refers to a part of Southeastern

¹⁶⁴ This observation was made independently by Grube and Martin (2001:II-26).

Mesoamerica characterized by shared sociocultural knowledge and practices that cut across ethnic and linguistic boundaries. Here I rename this interaction sphere as the Late Preclassic Southeastern Ceremonial Complex (LPSCC), by analogy with the Middle Preclassic Ceremonial Complex. Geographically, the LPSCC incorporates the Pacific coasts and highlands of Chiapas and Guatemala. But as explained next, this definition has been expanded.

The so-called Izapan Horizon style, the artistic correlate of the LPSCC, was originally defined based on the iconographic themes and style of Izapan sculpture (Coe 1977; Quirarte 1973), but has been redefined into a two-phase horizon, a first phase based at Izapa, and a second phase based at Kaminaljuyu (Parsons 1988; Kappelman 1997). Thus, the term Izapan/Kaminaljuyu Horizon (IKH) seems more appropriate. Rather than a stylistic horizon, the IKH is better characterized as an iconographic horizon: during this time sites participating in the LPSCC shared a great number of icons, motifs, and themes, but not necessarily stylistic traits. The distribution of the IKH has been expanded to include the Gulf Coast of Veracruz region, based on La Mojarra Stela 1 and other monuments, and the Mayan lowlands region, based on sites like Nakbe, El Mirador, and Loltun Cave (Kappelman 1997). Archaeologically, shared artifactual assemblages related to ritual, such as similar incense burners, have been described for Izapa, Kaminaljuyu, and Nakbe (Cyphers 1982); the last site has provided support for the extension of the geographical limits of the IKH.

Linguistically, the LPSCC has been defined based on evidence for lexical diffusion between Mixe-Zoqueans and Ch'olan-Tzeltalans, on the one hand, and between Ch'olan-Tzeltalans and other Mayan (e.g., Yukatekan, Poqom, Q'eqchi', Greater Q'anjob'alan) and non-Mayan (e.g., Xincan and Lencan) groups, on the other hand (Kaufman 1976; Justeson and Fox 1989; Justeson et al. 1985). Again, the linguistic evidence supports the extension of the LPSCC to include the Mayan lowlands. The lexical diffusion data support the existence of a linguistic interaction sphere coextensive

with the LPSCC. In these linguistic interaction sphere, Mixe-Zoqueans and Cholan-Tzeltalans were the most prestigious and influential.

Epigraphically, a Greater Izapan or Mayan-Izapan script tradition has been defined in terms of shared traits (Justeson and Mathews 1990; Justeson et al. 1985); Justeson and Mathews (1990) argue that while Izapa and Kaminaljuyu (both Greater Izapan or Mayan-Izapan in their classification) share the feature of having day sign pedestals, Epi-Olmec day signs lack them. They also argue that the Mayan-Izapan tradition innovated the double-column format, as attested at Kaminaljuyu, Abaj Takalik, and El Baul (but not at Izapa). In addition, a number of traits were likely diffused within this script tradition, including most notably the Long Count system.

The signary of Kaminaljuyu Stela 10 offers an interesting case study in Epi-Olmec and Mayan calligraphic comparisons (Mora-Marín 1996). Indeed, glyphs F1/G7, F3, F4, E5, F7, G1, G3, H3, G6, and H9 bear a closer iconographic and stylistic correspondence with Late Preclassic and Classic Mayan counterparts. At the same time, glyphs F2, E4, and F10/H2 bear a closer correspondence with Epi-Olmec glyphs. It is not yet clear whether this is a case of diffusion between Mayan and Epi-Olmec scribes or a case of shared inheritance, and this is not the place to present argument on this regard. In Mora-Marín (1999c) I discuss the text of Stela 10, and offer preliminary arguments for a Mayan grammatical structure, while concluding that a Mixe-Zoquean analysis is possible but less likely, since it would required marked syntax. Still, this inscription offers insight into the sociolinguistic context of early literacy in Southeastern Mesoamerica, and suggests a degree of interaction among scribes involved in the Greater Izapan civilization.

7.5. Epi-Olmec and Mayan Interaction and Script Transfer. Not only is highland-to-lowland interaction in evidence, but also, interethnic interaction among Mayans, Zapotecs, and Epi-Olmecs is apparent at this point. Some of this interaction may have started prior to the onset of the Late Preclassic period, and in some cases it may not be possible to distinguish between cases of diffusion of signs among separate scripts,

and cases of inheritance of signs among artistic traditions that later developed distinct writing systems.

Coe (1976) and Justeson et al. (1985) have discussed at length the evidence for the invention and diffusion of the Long Count notation system, which is shared only by the Epi-Olmec and Mayan scripts. Furthermore, Justeson et al. (1985:42) have suggested that T548 **HAB'/TUN** 'year, anniversary' may have been borrowed by Epi-Olmec scribes from Mayan scribes during the Late Preclassic period. The evidence discussed by Justeson and Mathews (1983) and Justeson et al. (1985) pertaining the use of T548 **HAB'/TUN**, the DRUM sign, strongly suggests that the shift of Ch'olan-Tzeltalan *oo to Ch'olan *uu had already begun to take place as early as ca. 100 B.C. Indeed, Justeson and Mathews (1983:590) note that the earliest use of T548 with the probable value **HAB'** 'year, anniversary' is attested on Abaj Takalik Stela 2, a monument with a damaged and incomplete long count (7.6/11/16.x.x.x, where "x" means 'missing data'), and which can be placed in absolute time between 236-19 B.C. Given that the use of a DRUM sign for the word ha7b' 'year, anniversary' can only be explained through the near or full homophony between Ch'olan *tuun 'stone, year' (from proto-Mayan *toon) and a likely Ch'olan term *tuun 'slit drum' (from Late proto-Mayan *tuun),¹⁶⁵ the use of T548 in a year count on Abaj Takalik Stela 2 suggests that the Ch'olan-Tzeltalan **oo > Ch'olan *uu change had taken place already by the time of its carving. Even if Stela 2 was carved as late as 19 B.C., a conservative estimate could place the completion of the change at ca. 100-50 B.C.

This conclusion is supported by an even earlier attestation of the DRUM sign in

¹⁶⁵ The term is present in K'iche'an and Mamean as *tu(:)n (Justeson and Fox 1989:12), and in Yukatek as túun in túun=k'ul 'slit drum' (Bricker, Po7ot Yah, Dzul de Po7ot 1998:285). This distribution, barring the possibility of diffusion, suggests a Late proto-Mayan form *tuun. This means that Ch'olan may very well have inherited a reflex as *tuun during pre-Ch'olan and *tun by proto-Ch'olan. The term túun=k'ul is in fact attested in the Dresden codex on pages 80b-81b as tu-ni + k'u (Fox and Justeson 1984a:66, Figure 45).

an anniversary celebration context: Tres Zapotes Stela C (32 B.C.). Indeed, even though Stela C has an Epi-Olmec text written in pre-proto-Zoquean, the use of a DRUM sign to refer to ‘year’ or ‘anniversary’ in the long count context can only be explained through the homophonous relationship between Ch’olan *tuun ‘stone, year’ and *tuun ‘slit drum’, and not through pre-proto-Zoquean *7ame7 ‘year’ and *kowa ‘drum’, which do not provide a basis for rebus-usage of the DRUM sign as both ‘year’ and ‘drum’ (Justeson and Kaufman 1993; Kaufman and Justeson 2001). What this usage in the Epi-Olmec script suggests is that even more time must have passed between the completion of the Ch’olan sound change that allowed for the homophonous relationship in Ch’olan between ‘stone, year’ and ‘slit drum’, as well as for the invention by Ch’olan scribes of the T548 sign and its reading **HAB** ‘year, anniversary’, and lastly for the borrowing of that sign by Epi-Olmec scribes (Justeson et al. 1985:42). This scenario supports the proposal of 100 B.C. as a conservative estimate for the completion of the **oo > *uu change, and therefore, for the completion of the breakup of Ch’olan-Tzeltalan into separate Ch’olan and Tzeltalan branches. However, confirmation that the DRUM sign had indeed two readings, one as ‘year’ and the other as ‘drum’ is not found until A.D. 157 in La Mojarra Stela I text, where the Epi-Olmec DRUM sign is in fact used with both readings (Justeson, personal communication 2001). Thus, based on the evidence from T548 alone, it can be said that the Ch’olan **oo > *uu shift occurred as early as ca. 100 B.C., but in any case by ca. A.D. 100.

Another instance is the case of Epi-Olmec MS44 **na** and Mayan T23 **na**. Stross (1990) has argued that Epi-Olmec MS44 has a value **na** (figure 7.11a) based on its visual identity with the down-turning ground motif of IKH art (figure 7.11b), which can be traced farther back in time to Olmec iconography, and on the Mixe-Zoquean term *naas ‘earth, land’, but not to a Mayan reflex of proto-Mayan *kab ~ *kaab. The main context Stross draws attention to is the very close similarity between the Mayan SUN.AT.HORIZON sign and the Epi-Olmec equivalent. He also suggests that Epi-

Olmec MS44 may be graphically related to Mayan T23 **na**, and therefore that the phonetic value **na** for Mayan T23 may be explained as a case of diffusion from a Mixe-Zoquean-speaking Epi-Olmec scribe. The same conclusion was arrived at independently by Justeson and Kaufman (1993) through a controlled grammatical analysis of La Mojarra Stela 1 and the Tuxtla Statuette. However, the generic T23 design that Stross proposes was derived from MS44 is not at first a convincing match.

There are examples of Mayan T23 **na** in Early Classic monuments (**figures 7.11c,d**) that reveal their visual identity with the down-turning ground motif of Izapan and Olmec art (**figure 7.11e**), and with Epi-Olmec MS44 **na** (**figures 7.11a**). There are also examples from Mayan art and writing that show that the **WITZ** ‘mountain, hill’ glyph also originates in the down-turning ground motif (**figures 7.12a,b**). T23 **na** soon loses its original iconic motivation in Mayan writing, and a derivative form becomes the standard throughout the Classic period (**figure 7.11b**). Nevertheless, even though Mayan scribes likely borrowed T23 **na** from Epi-Olmec scribes during the Late Preclassic period, and even though they did not use it later as a logograph with the meaning EARTH/LAND based on its iconic origin (T526 **KAB**’ ‘earth’ was used instead), there are two pieces of evidence that show that the Mayan scribal tradition retained knowledge of the original iconic motivation of T23.¹⁶⁶

The first comes from some frozen uses of T23 **na** as ideographic EARTH/CAVE in Lowland Mayan texts. One example from the Tablet of the 96 Glyphs at Palenque (**figure 7.13a**) shows a glyph 7AJ-5-PYRAMID-NAH ‘He of the 5 [pyramid] house’. The same glyph appears on the Palace Tablet also at Palenque (**figure 7.13b**) as 7AJ-5-PYRAMID-**na**-NAH. In this instance, though, T23 **na** follows the PYRAMID glyph. The reason for the optionality of T23 in this glyph is not clear at first. There two options: T23 **na** either serves as phonetic complement to the PYRAMID glyph, or it is an

¹⁶⁶ T23 was preserved iconically instead as the top part of a different sign, T529 **WITZ** ‘mountain, hill’.

iconographic component of the PYRAMID glyph without orthographic value in this context. Although only educated guesses have been offered for the logographic value of the PYRAMID glyph (e.g., K'UH/CH'UH-NAH 'temple' or MUL-NAH 'mound'), alternative (2) is very appealing in this particular example. When one compares this glyph with a related one attested at Copan, Tikal, and Caracol, among a few other sites, and with yet a third glyph attested in a Middle Preclassic Olmec-style greenstone tablet, its likely orthographic optionality becomes clearer. The Tikal example (**figure 7.13c**) shows **7u-PYRAMID-na-3.STONE/HEARTHSTONES**. This place is a cosmological placename, as suggested by the sign for 3.STONE/HEARTHSTONES. When one compares it with the glyph on the Middle Preclassic Ahuelican Tablet (**figure 7.13d**), it is evident that the two are the same: PYRAMID-EARTH/CAVE-3.STONE/HEARTHSTONES. What is found in between the PYRAMID sign and the 3.STONE/HEARTHSTONES sign in the greenstone tablet is the down-turning motif, which corresponds iconically to Epi-Olmec MS44 **na** and Mayan T23 **na**. Thus, T23 **na** may not be functioning phonetically in any of the glyphs in **figure 7.13**, but instead, iconically, as EARTH/CAVE. If correct, this would confirm that T23 **na** did in fact originate in the Izapan down-turning ground motif, and also, that its sourceword was Mixe-Zoquean **naas* 'earth, land'. It also suggests that Classic Mayan scribes and artists (e.g., Palenque, Dos Pilas) did not misunderstand the original motivation of T23, almost a millennium or more after its borrowing.

The second piece of evidence that confirms both the origin of T23 and the persistence of the association in Late Classic texts is an example of T23 **na** from Dos Pilas Stela 8, dated to A.D. 726, and which reflects its Late Preclassic iconic origin quite clearly (**figure 7.12c**): it shows the split mountain outline. Justeson (personal communication 2001) has pointed out that the Epi-Olmec script tradition lasted at least until A.D. 533, and therefore, that it is possible that some Mayan scribes may have been in contact with Epi-Olmec scribes during most of the Early Classic period. Such

interaction may have “contributed to the maintenance (or reintroduction) of the association” between MS44 and T23 established during the Late Preclassic period.

Another example of possible script diffusion, or perhaps of inheritance of a sign:meaning unit from a precursor Olmec script or iconographic system, is found in various Late Preclassic texts and monuments. This is the double-merlon and eyebrow motif of Olmec art (**figures 7.14a-d**), which is found in Epi-Olmec art and writing (**figures 7.14e-g**), as well as in the art of Kaminaljuyu and Izapa (**figure 7.15**). It turns out that several of the earliest 7AJAW ‘lord, ruler’ titles in Mayan texts (**figures 7.16b-d**) take this motif as a possible equivalent of the Classic period God C prefix, or K’UHUL ‘divine’ (**figures 7.16a,b**). Since the Olmec motif is used to mark the heads of gods in Olmec art (**figure 7.17a**), I think it is likely that it in fact functions as the modifier ‘divine’ in the Late Preclassic Mayan texts shown (**figure 7.17b**). Justeson (personal communication 2001) suggests that the resemblance of this double-merlon and eyebrow motif to early forms of the T74 **ma** sign, and its use as an iconic determiner of gods or holiness could point to Mixe-Zoquean *masan or *masa= (the second form in compounds). I think this is possible indeed, and in fact, it may elucidate the etymology and meaning of the **ma-su(-la)** expression used on some early titles in CLM texts at Tikal and Rio Azul (cf. Grube and Martin 2000:II-42). In any case, the example in **figure 7.16c** may very well correspond to the earliest Emblem Glyph, if read DIVINE-T505-7AJAW-?la ‘Divine Lord of Man’.

Justeson and Kaufman (1993:1709-1710, 2001:27-28) briefly outline a complex historical relationship between the Epi-Olmec and Mayan scripts. They make reference to three kinds of shared signs or sign compounds in the two scripts. First, there are shared logographic signs with Zoquean values in Epi-Olmec and Mayan values in Mayan. Examples of these are calendrical signs and sign compounds. Second, there are also shared syllabic signs derived acrophonically from Zoquean lexemes in Epi-Olmec and Mayan lexemes in Mayan. Examples of these might be Epi-Olmec MS130 **tza** and

Mayan T528 TUN, both depicting a shiny stone. The former was based on proto-Mixe-Zoquean **tza:7* ‘stone’ or proto-Zoquean **tza7*, while the latter was based on proto-Mayan **toon* ‘stone’ or Ch’olan **tuun* ‘stone; year’. And third, there are shared syllabic signs with shared values in both Epi-Olmec and Mayan. It is this last kind of sharing that is the most telling about direction of diffusion. An example of this kind is the relationship between Epi-Olmec MS44 **na** and Mayan T23 **na**, discussed in detail above (Kaufman and Justeson 2001:27-28; Mora-Marín 2001a). Justeson and Kaufman (1993:1710) propose two other Epi-Olmec loans into Mayan (e.g., MS46 **m̥** and MS 20 **w̥**), but neither is as self-evident as T23. Regarding MS20 **w̥**, the authors argue that it likely was borrowed into Mayan as **7u**. However, I do not think this is likely, since most Mayan signs with an **7u** reading can be shown to have been acrophonically derived from a descendant of proto-Mayan **7u:h* ‘bead’ (Bricker 1986; Justeson 1989; Mora-Marín 2001a).

In Mora-Marín (1995b, 1996, 1997a), I present other possible examples of grapheme diffusion between Epi-Olmecs and Mayans: MS49 **7a** and T178 **la**, MS125 **7̥** and T360 **la**, MS98 **y̥** and T126 **ya**, MS124 **k̥** and T528 **ku/ka**, and MS82 **ju** and T1 **7u** and/or T45 **hu**. (Justeson and Kaufman have independently made some of these associations, including MS98/T126, and MS82/T1.) While the case for formal correspondences between MS49 **7a** and T178 **la**, MS125 **7̥** and T360 **la** is admittedly not so strong due to the simplicity of their designs, there may be a regular sound correspondence that could not only point to a relationship but which could also be used to determine the direction of diffusion. MS49 and MS125 begin with a glottal stop, **ʔ**, while the corresponding Mayan signs, T178 and T360, begin with an alveolar liquid, **l**. Now, Mixe-Zoquean languages have a phonemic **ʔ**, but no **l**, while Mayan languages have phonemic **ʔ** and **l**. A possible attestation of this correspondence is found in Zoquean **7i7k=7i7k* ‘gavilancillo’ from Mayan **lik=lik* (widespread in Mayan), although this same form is reconstructed for proto-Mixe-Zoquean as **lik=lik* too (Wichmann

1995:235, 361). If these signs did in fact diffuse between the two scripts, then it is likely that Epi-Olmec MS49 and MS125 were diffused from Mayans to Epi-Olmecs, rather than the reverse. Also, in the case of the possible matches between MS125 **7u** and T360 **la**, MS98 **yu** and T126 **ya**, and MS124 **ku** and T528 **ku/ka**, the vowels may show a systematic correspondence as well: **u:a**. More examples of possible Mayan-to-Epi-Olmec and Epi-Olmec-to-Mayan sign transfer may exist: Epi-Olmec MS64 **ti** and Mayan T565 **ta**/PREPOSITION, Epi-Olmec MS39 **7i** and Mayan T188 **le**. (This last pair would exhibit the **7:l** correspondence too.) For now suffice it to say that there is strong evidence for a close historical connection between the two scripts.

And lastly, the MOUNTAIN glyph discussed in detail in the preceding chapter is also of interest here (**figures 6.36-6.38**). The glyph shows vegetal elements on the top, diagonal bands, and either a cave for a base or a series of striations. One of the glyphs, the one at A2 in the JM spoon (**figure 6.38d**), is an animated version of this mountain or platform. A monument from the Department of Sacatepequez (**figure 6.37c**) shows the following composition: vegetal motifs, platform, mountain monster face, and a cave below the monster face. Also, Kaminaljuyu Stela 10 contains the iconographic remnants of this platform (a vegetal motif) on top of which the main personage probably stood, and so does Kaminaljuyu Stela 8 (Parsons 1986:Figure 177). Interestingly, this MOUNTAIN glyph does not resemble the T529 **WITZ** 'hill, mountain' glyph very closely; instead, it resembles the MOUNTAIN glyphs from the Building J at Monte Alban in the Valley of Oaxaca (**figure 6.38**), which may date to ca. 100 B.C.-A.D. 200 (Marcus 1998:69). This could suggest either common inheritance in the Zapotec and Kaminaljuyu scripts of the same glyph, or later diffusion. I think the evidence points to the first scenario, but I defer the necessary arguments for another paper.

7.6. Portable Texts, Script Diffusion, and Ancestral Knowledge. Portable, nonperishable objects may have been instrumental in the diffusion of a script and its associated content and functions, as well as in the preservation of the knowledge of the

script through time.

The first point has already been illustrated above with the examples of the DO celt, the KCH bone, and the KJ plug. These examples illustrate iconographic or glyphic correspondences between precious portable objects and carved monuments. The KCH bone and KJ plug examples, in particular, point to a shared signary between highlands and lowlands, or at least to the borrowing of foreign signs between highlands and lowlands. In either case it is clear that the exchange of inscribed precious objects was an ideal means for the diffusion of the script throughout the Mayan region. This exchange in inscribed precious objects was undoubtedly only a part of a much broader and systematic network of exchange in precious objects of many types, which undoubtedly had a key role in forging the Late Preclassic Southeastern Ceremonial Complex, its artistic and sociolinguistic correlates. It is unclear what types of political economic hierarchies might have existed in the context of this sphere, at least from the epigraphic and iconographic evidence alone; while Clark, Hansen, and Pérez (1998) have suggested a scenario in which El Mirador was preeminent in the region, the historical reality was likely to be much more complex than this. Indeed, the linguistic evidence already discussed points to both Ch'olan-Tzeltalans and Mixe-Zoqueans as key players during this time, and in the case of the former group, their influence was felt not just in the Mayan lowlands (by Yucatecan speakers), where El Mirador undoubtedly reigned supreme, but also in the Mayan highlands (by other Mayan and non-Mayan groups), where Kaminaljuyu and Abaj Takalik were very influential.

The second point, regarding the preservation of ancestral knowledge, is suggested by the presence of Late Preclassic archaisms in Early and Late Classic texts from the lowlands. One of these I have already discussed: the case of T23 *na*/CAVE/EARTH. I showed that T23 was not only borrowed by Mayans from the Middle Preclassic Olmec or Late Preclassic Epi-Olmec script, but that its original iconographic associations and symbolism were preserved for over a millennium, well into the Late Classic period. These

archaisms, and their glyphic and iconographic contexts, suggest an actively preserved and formalized knowledge (i.e., an historical tradition) of the original forms and meanings of signs, and the cosmological concepts behind them.

Fields (1989), for instance, has shown that there is a strong continuity of the symbol:meaning relationship between certain elements and motifs in Olmec iconography and Mayan iconography and writing, as illustrated by her with the JESTER.GOD motif and its variants. This is also illustrated with the CROSSED.BANDS royal headband inherited by Mayans from Olmec-style art, as attested in the the DO pectoral (**figures 7.18a,b**). Interestingly, although the CROSSED.BANDS royal headband fell into disuse by the end of the Late Preclassic, during the Late Classic period it was reused at various sites in the Petexbatun region of the southern lowlands, such as at Seibal and Aguacateca (**figure 7.18c**). This comparison is not just based on the formal trait of two crossed bands, which by itself may be found in a myriad of contexts that are not functionally or historically related. It is based on the formal similarities between two motifs used in the same context (representation of regalia, specifically jeweled parts of the royal attire such as pectoral necklace ornaments and headbands) with the same meaning (divine rulership), as already discussed in part in Chapter V (section 5.5) and Chapter VI (section 6.5). This suggests not only retention of knowledge of ancient motifs and art, as well as of their correct meanings, but also their intentional use as part of a broader attempt at legitimizing new royal houses and states by means of revivals of archaisms, as suggested previously by Fields (1989) and Schele and Freidel (1990).

Besides the archaic Jester God motif and T23 **na** sign, another trait of possible Late Preclassic origin is attested at Dos Pilas-Aguacateca, El Peru, Tamarindito, Sacul, Itzan, and El Chorro. This is the T687.130 (**po-wa**) version of T168 **7AJAW** (**figures 7.19d,e**). T687.130 was used between A.D. 736-849, and not once during the Classic period otherwise (Lacadena 1996:270). Prior to this development, the **7AJAW** superfix (T168) was spelled with T517.584 up to ca. A.D. 416. After this, T687 replaced T517.

T687:584 then became the more common form of the **7AJAW** superfix, with T584 undergoing subtle changes, until the T687.130 Dos Pilas form came into use, doing away with T584 and replacing it half of T130 **wa** (figures 7.19d,e). Subsequently, two more variants of the **7AJAW** superfix came into use, neither of which had T130.¹⁶⁷

Interestingly, the sudden appearance of this form of the **7AJAW** superfix in the Late Classic at Dos Pilas can be explained, I believe, in the same way as the archaic T23 **na**: The **7AJAW** superfix with T130 **wa** occurs in the earliest examples of the **7AJAW** superfix (figures 7.19a-c), and thus, the T687.130 **7AJAW** logograph from Dos Pilas may have been yet another revival. This revival was only partial, because the T687 **po** component innovated sometime around A.D. 416 was retained in the Dos Pilas form of the superfix, rather than being replaced by T517, the U-shaped element, which appears in the early examples.

These cases suggest a formalized historical tradition among Mayan scribes, as well as the preservation, perhaps in the form of ancestral heirlooms, of ancient texts inscribed on nonperishable portable objects or monuments, or copied and recopied onto books. These types of objects are more easily transported and in some cases more durable than stone monuments, which are more exposed to weathering or mutilation, although even stone monuments can be used as heirlooms, as in the case of Copan Stela 63 discussed Chapter I (section I.4). Furthermore, not only are portable preciosities more easily transported, but exchange is in fact their most basic function. Preciosities were the most important means of political and economic exchange in ancient Mesoamerica (Blanton and Feinman 1984; Blanton et al. 1993; Blanton et al. 1996), and for this reason they served as ideal media for the diffusion of ideas, whether represented iconographically or glyphically, as argued also in Chapter I for the case of Middle Preclassic Olmec preciosities (section I.3).

¹⁶⁷ Lacadena (1996:270) shows that this T130 element may not have been read phonetically in this usage as the **7AJAW** superfix, but simply as part of a logographic sign T687.130 **7AJAW**.

7.7. Summary and Conclusions. The data presented and reviewed in this chapter suggests that there was close interaction not only between scribes within the highland and lowland Mayan regions, but also between Mayan and Epi-Olmec scribes within Southeastern Mesoamerica, and maybe even between Mayan and Oaxacan scribes at a broader interregional scale. The nature of the interaction was not the focus of this chapter, but it is clear that it focused on very important cosmological and political ideas condensed in pictorial art and script. These ideas may include the notions of divine rulership (i.e., the EYEBROW and DOUBLE.MERLON motifs) and the cleft mountain (i.e., T23 na) related to the origin of the Maize God (Freidel, Schele, and Parker 1993), both of which may have been innovated by the Olmecs of the Middle Preclassic and inherited by the Epi-Olmecs and Mayans of the Late Preclassic.

Portable texts likely played a role in the integration of the various Mesoamerican societies into a vast economic and cultural network. Scribes, some of whom were undoubtedly prophets, priests, and rulers, who likely had a vested interest in such integration, may have promoted political economic and ideological programs by means of pictorial art and hieroglyphic writing on portable preciosities. Such preciosities could be easily moved across vast distances and could have significant symbolic and economic power, both useful in attaining political goals.

Not only were portable objects of key significance in the spread of such programs across regions, but they were also important, it seems, in the preservation of these programs through time, as suggested by the evidence for retention of archaisms from Late Preclassic through Late Classic times.

CHAPTER VIII:

LATE PRECLASSIC MAYAN GLYPHIC GRAMMAR, ORTHOGRAPHY, AND LINGUISTIC AFFILIATION

8.0. Overview. In this chapter I summarize the linguistic and orthographic traits observed in Chapters VI and VII, and compare them with those of CLM texts (Chapter III), as well as with the historical linguistic reconstructions of Greater Lowland Mayan languages (Chapter II). I suggest that the texts studied may represent Ch'olan and Yukatekan, but not Ch'olan-Tzeltalan or Tzeltalan. In fact, there is evidence suggesting that by ca. 300-100 B.C. (DO pectoral?) Ch'olan-Tzeltalan had already split up into Ch'olan and Tzeltalan. I also hypothesize about the role of the grammatical structure of Ch'olan and Yukatekan in the development of the script's orthographic conventions. I suggest that the development of phoneticism can be explained in terms of morphophonemic processes attested in the early texts (e.g., prevocalic ergative prefixes, -C-V(G) and -V(G) affixes), suggesting that the low incidence of phonetic complements and purely phonetic spellings of words so far observed does not point to a difference in kind, but instead to a difference in degree of phonetic sign usage. In general, the orthographic practices appear to be the same as those of CLM texts, both in terms of artistic and calligraphic composition, as well as in terms of spelling rules.

8.1. Goals. The main goal of this chapter is to present an overview of the major grammatical and orthographic traits observable so far in the corpus of Late Preclassic portable texts. The secondary goals include a comparison between Late Preclassic Mayan writing and Classic Lowland Mayan writing, and an attempt to discern the linguistic affiliation of the scribes responsible for the texts.

8.2. Methods. In the following sections I review the major orthographic and

grammatical traits present in the DO subtradition texts and in the additional texts studied in Chapters VI and VII. I review and then hypothesize about their influence in the development of Mayan writing and on the linguistic affiliation of the early Mayan scribes.

8.3. Late Preclassic Mayan Orthography. The orthographic conventions of the Late Preclassic Mayan texts studied in this dissertation generally conform to those of CLM texts (Chapter III). There are two main types of orthographic conventions: those affecting artistic composition of graphic units and compounds, and those affecting the way logographic and phonetic signs are used in the spellings of words.

The first type includes the following features: (1) single-column formats (HTZ axe)¹⁶⁸; (2) multi-column formats (DO pectoral, PMY jaguar, DO celt)¹⁶⁹; (3) graphic main signs (e.g., T757 **B'AH/b'a**, T644 **CHUM**); (4) graphic affixes (e.g., T1 **7u** at C6a in DO pectoral and A1a in BMA mask, T24 **li** at A3d in JM spoon, T126 **ya** at A1b and C6b in DO pectoral, T139 **la** at A1b/A7c/A8d in JM spoon and A4b in PMY jaguar); (5) graphic compounding (e.g., B1 **STEP-chi** and C6 **7u-y(a)-(7)AK'(AB'/B'AL)** in the DO pectoral); (6) graphic infixation (e.g., **FOREHEAD[pa]** at A3/D4 in DO pectoral, possible case of T1 **7u** inside glyph 35); (7) graphic overlaying of signs (e.g., B6 in the DO pectoral, A8 in the JM spoon); (8) possible graphic conflation of signs (e.g., B7b in

¹⁶⁸ Though I do not discuss it in detail in this work, the HTZ axe (**figure A.1.31**) can be demonstrated to be a single-column format text consisting of two columns. This is clear on two grounds: (1) first, the rows do not match each other, as is especially clear when comparing the mismatch between A3 and B3 or A4 and B4; (2) column A has five rows, while column B has six; and (3) the glyph at B3 was originally intended to be in position B2, where its rough outline was incised but not completed due to lack of space, showing that the scribe moved one row down, and therefore used a single-column reading format, to relocate the intended sign. While the HTZ axe text is Protoclassic, and given its style quite possible Late Preclassic, there is at least one Early Classic text (**figure A.1.22**) datable stylistically to ca. A.D. 400–450 based on very close calligraphic similarities with the Ballcourt Marker and Stela 31 from Tikal that is also read in single columns even though it shows two adjacent columns.

¹⁶⁹ The UNP clamshell and UNP spoon cannot be classified, technically, as either single- or double-column format texts: neither consists of more than one column of text. Either classification only fits if a text consists of more than one glyphic column. Still, both texts are single glyphic columns, just like the ones attested in other Late Preclassic texts (e.g., El Porton Monument 1, Abaj Takalik Stela 5).

PMY jaguar may be a conflation of T60 **hi** and T24 **li** for the spelling **hi-li**); (9) semantic classifiers (e.g., FOREHEAD[POLISHED.SURFACE] at A2 in UNP clamshell, T-shaped element on forehead); (10) blank heads (e.g., B1b in PMY jaguar); (11) animated versions of signs (e.g., A2 in JM spoon); (12) multiple signs for the same CV sequence (e.g., T115 **yo** at B7a in DO celt and T673 **yo** at A1a in PMA flare); (13) glyph block punctuation based on lexical and phrasal categories (e.g., BEARDED.GOD.N-ni, a verb, at A4 in JM spoon), phrases (e.g., **ta/TA/TI-SKY.GOD**, a prepositional phrase, at C2 in PMA flare and **ta/TA/TI-7AJAW**, also a prepositional phrase, at A4 in DO celt), and on graphic composition (e.g., graphic main signs can occupy whole glyph blocks, regardless of whether they have logographic or syllabographic values, such as phonetic T24 **li** at D6 in DO pectoral and phonetic T17 **yi** at A4 in UNP clamshell); and (14) doubling of a sign that was read just once (e.g., A1b/A8d **la-la** and A3d **li-li** for **li** in JM spoon).

The following spelling conventions are attested: (1) phonetic sign usage to spell affixes (e.g., T1 **7u** for 7u-, T1.126 **7u-ya** for 7uy-, T116 **ni** for -n-i); (2) phonetic sign usage to spell phonetic complements to logographs (e.g., **(pa-)PAM** for *pa[h]m ‘surface/flat.thing’); (3) phonetic sign usage to spell a partial phonetic complement and an adjacent affix (e.g., T757 **b’a** in **?7u-CH’AB’-(b’)a** for 7u-ch’ahb’-ä-Ø-Ø ‘He sacrificed.with it’ where the b’ of **b’a** complements the final consonant of *ch’ahb’ and provides the applicative suffix -ä; also T126 **ya** in **7u-y(a)-(7)AK’(AB’/B’AL)** where the a of **ya** complements the vowel a of the root spelled by T841 **7AK’(AB’/B’AL)**); (4) phonetic sign usage to spell words (e.g., **yo-?le** for y-óol ‘his heart’ at A1 in PMA flare, **yu-yu** for y-uhy ‘his bead’ at A2 in the CNT 6125 text, possibly **7AJ-wa** for *7ajaw)¹⁷⁰; (5) underspelling of inflectional affixes (e.g., **-no** for -n-om AP-POT in **TZIK-no** for

¹⁷⁰ At B4 on Yaxchilan Lintel 47 the glyph **ta-T584-le** appears, quite likely for t-ajaw-lel /ta-7ajaw-lel/ ‘in lordship/rulership’. If so, it would seem as though T584, iconically REED as argued in Chapter VI, stands for **7AJAW** or is interpretable as such in context. I think that T518, also iconically REED as pointed out in Chapter VI, could also be interpretable as **7AJAW** in the DO pectoral example.

tzik-n-om-Ø ‘he would read’); and (6) possible examples of commutativity or so-called morphosyllables (e.g., T130 **wa** as **aw** in **7AJ-aw** for *7ajaw at B5 in DO pectoral and A7 in UNP clamshell, T24 **li** as **il/IL** at D6 in DO pectoral and at A7c in DO celt, possibly T139 **la** as **al/AL** at B4b in PMY jaguar).

Lastly, the study in Chapter VI has allowed for a partial reconstruction of the Late Preclassic syllabary, shown in **figures 8.1-8.3**. The syllabary spans a maximum of about five hundred years, since it incorporates data from the DO pectoral, which may date to ca. 300-100 B.C., and data from the PMA flare and CNT 6125, which may date to ca. A.D. 200, with the PMA reliably dated archaeologically to A.D. 1-250. The earliest calendrically datable text whose data are included is the DO celt, which dates to A.D. 120. Some of the signs are not only close formal matches with CLM counterparts, but are in morphosyntactic and/or lexical contexts that support their proposed readings (e.g., T757 **b’a**, T130 **wa**, T51 **ta/TA/TI**, T116 **ni**). Others are simply formal matches with CLM syllabic signs with little or no independent contextual support for their readings (e.g., T23 **na**, T60 **hi/ji**). In the case of T60 **hi/ji** its occurrence underneath T518 in the UNP clamshell and underneath REED in the DO pectoral suggests an iconic usage (i.e., as an iconic element that is part of the T518 and REED signs, **figure 6.22**) rather than a phonetic one (i.e., as **hi/ji**). However, the same T60 sign may occur at B7b in the PMY jaguar conflated with an early version of T88 **hi/ji**. In CLM texts the juxtaposition of different signs with identical readings was sometimes equivalent orthographically to a single grapheme.¹⁷¹ So it is possible that T60 may be attested in Late Preclassic texts

¹⁷¹ Nikolai Grube (Schele, Grube, and Fahsen 1994:2) has indeed argued that the graphic compound T124:507, with both T124 and T507 individually read phonetically as **tzi**, functioned as a single instance of phonetic **tzi**, rather than as a sequence **tzi-tzi**. The same may have been true for this instance of T60:88 in the PMY jaguar, they may have been read as **hi** rather than **hi-hi**. T60 may have represented both **ji** and **hi** depending on context. It is used at least once in the Late Classic period in a **yi-ta-ji** spelling (Stuart 1987). T88 was probably **ji** in general, but in some cases a reading **hi** seems likely. One such instance is its use in the **hi-chi** glyph of the PSS, which is spelled **yi-chi** in certain contexts suggesting a morphophonemic process of h-deletion upon possession as suggested by MacLeod (1990). Thus, T60 and T88 may have read spelled **hi-hi** or **ji-ji**

with both an iconic function and an orthographic function.

Lastly, I have included the signs at B2a and B2b in the DO pectoral as a hypothesis. B2a may be either T57 **si** or T89 **tu**, both of which are very similar graphically, especially during the Early Classic period (**figures 6.35** and **6.60**), and could have in fact originally been a single sign with two phonetic readings that eventually diverged graphically. B2b is included as **hu** mainly because it can be identified visually with T740, which in CLM texts at least could have the phonetic reading **hu**. I do not propose that that was its reading at B2b in the DO pectoral, since the reading **SIJ**, as I argued in Chapter VI, could be equally likely. I only propose here that it should be considered as a hypothesis to be tested in the future.

8.4. Late Preclassic Mayan Grammar.¹⁷²

8.4.1. Word Order. The basic word order of the Late Preclassic texts discussed here is no different from that of Classic Lowland Mayan texts: VS, V[=O]S, VO, and PS. There is no instance so far of an explicit VOA clause. The first type may be found at B1-A2 in the DO pectoral (**figure 6.57a**). The second type is attested in the form of incorporative antipassive clauses (i.e., V[=O]S, where V[=O] forms a compound word, the O is no longer a core argument of the verb, and the former A is now the S of the verb), as in A4-A8 in the JM spoon (**figures 6.25** and **6.65**). The third type may be found at C5-D6 in the DO pectoral (**figure 6.63b**). The fourth type comes in two varieties: unpossessed noun phrases, and possessed noun phrases. The first may be attested at A1-A6 in the CNT 6125 text, 'The bead/necklace of the image of the [A4] of the PBD is 4-Stone' (**figure 6.76**), at A3-B4 in the PMY jaguar text, 'The image of the Mountain

(or **hi-ji** or **ji-hi**). The strategy for representing a sequence **tzi-tzi** would have involved repeating the same sign twice (e.g., T507:507), showing it once but with a diacritic for reduplication (e.g., **tzi^{2x}**), or showing it once without a diacritic but presumably providing enough contextual cues for the reader to know that a **tzi-tzi** sequence was intended (see Chapter III).

¹⁷² In Footnote 12 of Chapter II I list all the abbreviations for linguistic glossings used in this dissertation.

Divine Lord is a/the [BEHEADED.JAGUAR]' (figure 6.64c), and at D1-C2 in the PMA flare text, 'The heart of the Sun God is the Maize God' (figure 6.78). The second type may be attested at A1-A4 in the BMA mask text, as 'It is the image of ?-Centipede [A3-A4b] Person/Man' (figure 6.77). Nevertheless, while at first the word 'it' (coded by means of \emptyset 'third person absolutive agreement marker' on the verb) appears to have no textual referent, the deity portrayed on the front of the BMA mask was probably the referent alluded to and so is provided by context, allowing for the following interpretation: 'The image of ?-Centipede [A3-A4b] Person/Man is [the BMA mask's deity]'. Thus, this clause might still fall within the first type if the mask as a whole functioned as a glyph, a possibility worth considering.

8.4.2. Ergative and Absolutive Agreement Markers. Only one person agreement marker, the third person ergative prefix, has been identified. The following allomorphs are attested: $\underline{7u-}$ (preconsonantal), $\underline{y-}$ (prevocalic), and $\underline{7uy-}$ (prevocalic).¹⁷³ The first is a retention from proto-Mayan (table 2.38), and thus cannot be readily used to determine linguistic affiliation. It is attested in the following texts: at A1a in the BMA mask in the spelling **7u-B'AH** '(It is) his image' (figure 6.13), at A3a/A4a in the CNT 6125 in the spellings **7u-B'AH** 'his image' and **7u-?-b'i-li** 'his ?' (figure 8.5), at A7a in the DO celt in the spelling **7u-K'IN-li/IL** 'his property(?)' (figure 6.11), and possibly at B3a in the PMY jaguar in the possible spelling **7u-B'AH-?(h)i** 'his image' (figure 6.5). If one assumes that T126, T62, and T673 represent the same phonetic forms as they do in CLM texts, **ya**, **yu**, and **yo**, respectively, then the second allomorph, a Western Mayan and Yukatekan innovation, is also attested and allows for the exclusion of Wastekan and Eastern Mayan. It is attested at A5a in the HTZ axe in the spelling **y(a)-(7)AK'(AB'/B'AL)** (figure 8.4a), at A2a in the CNT 6125 in the spelling **yu-yu** or **y(u)-**

¹⁷³ I use the term prevocalic instead of the more traditional Mayanist term prevocalic because these allomorphs were used in anticipation of glottal-initial roots (i.e., 7VC... or hVC...), not in anticipation of vowel-initial roots since in Mayan there are generally no vowel-initial roots.

(7)UY (figure 8.5), and at A1a in the PMA flare in the spelling yo-?le (figure 6.14).

Since this allomorph *y- descends from proto-Mayan *r- via the regular *r > *y change undergone in Western Mayan and in Yukatekan generally, and since most cases of a proposed y in the Late Preclassic corpus descend from proto-Mayan *r (e.g., 7AY-ya for *7ay(-a) from proto-Mayan *7ar), it is in principle not possible to now for sure that these signs represented yV sequences as opposed to rV sequences (cf. Justeson and Fox 1989:15). The earliest confirmation of a yV sequence is in the spelling yu-yu or y(u)- (7)UY alluded to above, since proto-Ch'olan *7uhy 'bead, necklace' descends from proto-Mayan *7u7h, with y in the proto-Ch'olan form as a Ch'olan-specific innovation.

The third allomorph is an exclusively Lowland Mayan (Ch'olan and Yukatekan) innovation, and allows for an even narrower determination of linguistic affiliation. It is attested just once, in the DO pectoral at C6 in the spelling 7u-y(a)-(7)AK'(AB'/B'AL) (figure 8.4b). Indeed, Tzeltalan and Greater Q'anjob'alan have y- but not 7uy-; other Mayan languages subgroups have r- (Greater K'iche'an), ɿ- (Greater Mamean), or in- (Wastekan) (Kaufman 1989). Because of the 7uy- innovation attested in the DO pectoral, likely the oldest of the texts discussed here (ca. 300-100 B.C.), and because of the fact that Ch'olan and Yukatekan also exhibit 7u- and y-, I argue that all the texts alluded to here might be in either Ch'olan or Yukatekan. Some of them contain additional evidence suggestive of a narrower linguistic affiliation, as discussed below.

The identification of nominal predicates relies on the assumption that nominal phrases appearing in isolation, for example, are likely agreeing with a third person absolutive marker, -Ø, and thus constitute a stative predicate (i.e., NP-Ø 'It is/was (a/the) NP'). This is a characteristic of all Mayan languages. Third person absolutive agreement markers are also implicit in passive, mediopassive, and antipassive verbs (e.g., GOD.N-ni FOREHEAD[pa] possibly for GOD.N-n-i-Ø=pa[h]m 'He surface-GOD.Ned'). The possible verb ?7u-CH'AB'-(b')a, if analyzed correctly as 7u-ch'ahb'-ä-Ø-Ø (3sERG-fast/sacrifice-APPL-CMP-3sABS) 'He sacrificed.with it', would have two agreement

markers: ergative 7u- and absolutive -Ø.

8.4.3. Verbal Morphology. There appear to be passive, antipassive, active transitive, root intransitive, and positional verbs in this subset of Late Preclassic texts (**figure 8.6**). One of the two attested passive or mediopassive verbs (BEARDED.GOD.N in the UNP clamshell text at A1) takes no orthographically explicit inflection (**figure 8.6d**), suggesting an infix -h- '(medio)passivizer' marker. The second one (STAR-yi also in the UNP clamshell text at A3-A4) takes T17 yi, for either -V₁y or -i(y) 'completive status of intransitives(?)', and perhaps an infix -h- given the underlyingly transitive meaning that can be inferred for this verb in its Classic period attestations (see section 6.7.9).¹⁷⁴ Indeed, regarding the -V₁y or -iy suffix that T17 yi might be spelling, Kaufman and Norman (1984:103) have reconstructed *-V₁y and *-i as the completive status markers of root intransitives in Eastern Ch'olan. While this could point to an Eastern Ch'olan affiliation for intransitive verbs taking a *-V₁y status marker, the fact is that this suffix may be attested in Modern Ch'ol as well (Schumann 1973:26): wäy-äy-on (sleep-CMP-1sABS) 'ya dormí (I have already slept)' and yajl-iy-on (fall-CMP-1sABS) 'me caí'. This suggests that this suffix can be reconstructed to proto-Ch'olan as *-V₁y. Alternatively, it was suggested in section 6.7.9 that the y of yi could instead be spelling the final consonant of the root represented by the STAR glyph. If this is the case, then the i of yi could be spelling the 'plain/completive status of intransitives' by itself.

Four examples of BEARDED.GOD.N-ni (**figure 8.6c**) suggest a sequence of suffixes -n-i, the first probably -(V)n 'absolutive/incorporative antipassive' and the second probably -i 'completive status of intransitives'. Another likely antipassive verb is attested: TZIK-no (**figure 8.6f**). It may take the sequence of suffixes -n-om, the first probably -(V)n 'absolutive/incorporative antipassive' and the second an underspelled

¹⁷⁴ More specifically, the -i suffix of -n-i may be the thematic vowel -i from proto-Mayan *[i-k] ~ *[i-h] 'plain status of intransitives' as reconstructed by Kaufman (1989). The -h of *[i-h], possibly also pronounced as -i-y, is likely to be omitted from speech, and hence underspelled, unless something else follows the status marker.

(possibly “underpronounced”) -om ‘potential/future’ suffix.¹⁷⁵ All are examples of incorporative antipassive clauses (Chapter III).

In the typology of CLM antipassive constructions presented in Chapter III (section 3.3.2) it was mentioned that absolutive and incorporative antipassives in CLM texts show the following two general structures:

(8.1) ABSOLUTIVE/INCORPORATIVE (Omitted/incorporated O) (a)

TV- wa/wi	± ONP	± ANP
TV-w-ABS _i (+a7/i7)	± ONP[-def]	± ANP _i

(8.2) ABSOLUTIVE (Oblique O) (b)

TV- na/ni	+ ti+ONP	± ANP
TV-n-ABS _i (+a(G)/i(G)/o(G))	+ ti7+ONP[+def]	± ANP _i

From this it is clear that in incorporative antipassives the suffixes involved are always spelled with T130 **wa** and T117 **wi** in the Classic period. This is illustrated in **figures 8.7** and **8.8d**. However, the incorporative antipassives I propose for the Late Preclassic corpus use two different signs: T116 **ni** and T136[595] **no** (**figure 8.8c**). While T116 **ni** is used in absolutive antipassive constructions involving oblique O noun phrases in Classic texts, this is not the case for the incorporative examples in contemporaneous texts. Does this mean that the Late Preclassic texts represent a language genetically distinct from that of the CLM texts? The answer to this question depends, at least in part, on the answer to another question: Which is the original pattern, the use of a -(V)n or a -(V)w suffix for incorporative antipassives?

This problem has already been discussed in Chapter II (section 2.3.2.2). Here I provide a synopsis (cf. **Tables 2.26-2.31**). Following Kaufman (1989), a proto-Mayan absolutive antipassive marker with a general shape *-(V)n can be reconstructed.

¹⁷⁵ Alternatively, the -o vowel could be an underspelling of -o7b ‘(third person absolutive) plural’, though this is less likely because only one human actor is mentioned in the text, and the clause headed by **TZIK-no** takes only one core argument, an omitted reference to the single human actor.

Kaufman (1989) reconstructs it specifically as *-o-an for root transitives and *-an for derived transitives.¹⁷⁶ The evidence for reconstructing this form (independent of its function) is strong: Wastekan (with -n ‘reflexive, mediopassive, frozen active intransitive forms’), Yukatekan (with -n ‘completive status absolutive antipassive’), Eastern Mayan (Greater Mamean -(o)n ‘absolutive antipassive’, and Greater K’iche’an -(o)n ‘absolutive antipassive’ except for the Poqom subgroup which has generalized the use of -w to all types of antipassives), and Western Mayan (Ch’olan -on, -an, -n). Moreover, the evidence from Wastekan and Yukatekan, the first two branches that separated from proto-Mayan and Late proto-Mayan, and from Eastern Mayan is sufficient to support the reconstruction of this suffix as ‘absolutive antipassive’. Also, of the languages with a -(V)n ‘absolutive antipassive’ cognate that also have an incorporative antipassive construction, all use at least a -(V)n suffix for this construction.¹⁷⁷ Kaufman’s (1989) conclusion, therefore, that *-o-an ~ *-an were used for both absolutive and incorporative

¹⁷⁶ Kaufman notes that the vowel of the -(V)n suffix was likely a transitive thematic suffix, whether proto-Mayan *-o or *-a.

¹⁷⁷ Ch’orti’ has both -on (root transitives) and -an (derived transitives) as an absolutive antipassive (Quizar and Knowles-Berry 1988:89). The following data from Fought (1967:178, 225) illustrate these: 7u-cham-se-Ø-Ø (3sERG-die-CAUS-CMP-3sABS) ‘he kills it’ vs. 7a-cham-s-an-Ø (3sINC-die-CAUS-AP-CMP) ‘he kills’; 7u-yop’-i-Ø-Ø (3sERG-strike-TH-CMP-3sABS) ‘he strikes it’ vs. 7a-yop’-on-Ø (3sINC-strike-AP-CMP) ‘he strikes’. However, while Ch’orti’ has an object-incorporation detransitivizing construction, illustrated by Quizar and Knowles-Berry (1988:90) with the contrast e winik u-pak-i-Ø-Ø e nar (DMNS man 3sERG-double.over-TH-INC-3sABS DMNS cornstalks) ‘the man is doubling.over the cornstalks’ vs. e winik u-pak-nar-i-Ø (DMNS man 3sERG-double.over-cornstalk-TH-INC) ‘the man is doubling.over the cornstalks’, this construction is not distinctly marked morphologically, much less by a morpheme cognate with the -(V)w or -(V)n antipassivizer. Also, as is evident from the glossing of the verb with incorporation, the verb has not undergone intransitivization because it coreferences the A with an ergative agreement marker. Intransitive verbs in the incompletive status in Ch’orti’ coreference their S with a special set of agreement markers different from the ergative and absolutive sets. Also, while Chontal too has an incorporative construction, this construction does not take a suffix cognate with the antipassive morphemes, nor does it intransitivize the verb, as one would expect of an antipassive construction (Quizar and Knowles-Berry 1988:91). Consequently, this incorporative constructions are not obviously related to the incorporative antipassive constructions of interest here.

constructions in proto-Mayan (or at least Late proto-Mayan, given the absence of incorporative constructions in Wastekan) is likely correct.

What about the origin and function of the -(V)w suffix? As already discussed in Chapter II, Kaufman (1989:Part B, 152) reconstructs *-o/a-w ‘agentive antipassive’ (root transitives) ~ *-w ‘agentive antipassive’ (derived transitives) for Central Mayan (Eastern Mayan and Western Mayan). He also argues that this marker was derived through reanalysis from the plain status of root transitives *-o/a-w ~ *-o/a-h.¹⁷⁸ This -(V)w suffix (Table 2.28) is not reconstructible to proto-Mayan, due to the absence of cognates in Wastekan and Yukatekan. It is present in Greater K’iche’an as -(o)w, Tzeltalan as -(a)w-an, Ch’olan as -(a)w-an, and Greater Q’anjob’alan as -w(-a/i/an/aj), among other variants, which makes the form itself reconstructible to Central Mayan (Eastern Mayan and Western Mayan) only.

The original function of this form is not clear at first. In Greater K’iche’an in general the -(o)w suffix is used as the agentive and incorporative antipassive of root transitives (the -(o)n form is used for the agentive and incorporative antipassive of derived transitives). In Greater Q’anjob’alan, the form -w(-a/i/an/aj) is used for absolutive and incorporative antipassive constructions, unlike the pattern in other Mayan languages, where forms cognate with the -(V)n suffix are used. In Tzeltalan -(a)w-an is used as the absolutive antipassive, while in Ch’orti’ -(w-)an is used as an absolutive antipassive of derived transitives; neither Tzeltalan nor Ch’olan has exhibits today an incorporative antipassive construction. Only Tojolob’al (Greater Q’anjob’alan), with -w-an, and Greater K’iche’an, with -(o)w, have the -(V)w form with an agentive antipassive function, while the rest of Western Mayan (Ch’olan, Tzeltalan, Greater Q’anjob’alan minus Tojolob’al) and Eastern Mayan (Greater Mamean) have a -(V)n form with an

¹⁷⁸ As explained in Chapter II, the proposal of a *-(V)w suffix as the proto-Mayan ‘absolutive antipassive’ by Smith-Stark (1978) and Dayley (1981) cannot be supported because both Wastekan and Yukatekan lack cognates of this suffix, and at the same time, they have a different suffix for that function.

agentive antipassive function or have no agentive antipassive construction at all (e.g., Ch'ol, Chontal, Tzeltal, Jakaltek). CLM texts, which in general exhibit a Ch'olan structure, exhibit the two forms, -(V)n and -(V)w in agentive constructions (Lacadena 1998; Mora-Marín 1998a, 2001b); in fact, at some sites, such as Copan, the two forms are sometimes present, though not within the same text (Mora-Marín 2001b). Lastly, CLM texts also show the use of a -(V)w suffix for incorporative antipassive constructions as early as A.D. 435. No -(V)n suffix is attested with this function in CLM texts at all, only with absolutive and agentive antipassive functions. Given the fact that the use of *-o-an ~ *-an as 'absolutive/incorporative antipassive' can be reconstructed to Late proto-Mayan, and that a suffix *-on ~ *-an 'absolutive antipassive' can be reconstructed to proto-Ch'olan, it is likely that pre-Western Mayan at least retained this dual function for the *-o-an ~ *-an suffix at least for some time. At some point, the Western Mayan languages acquired the use of a -(V)w form for the incorporative function, but at least in the case of Ch'olan, not for the absolutive function. Kaufman (1989:Part B, 173) argues for the following scenario:

My claim is as follows: the proto-Mayan antipassive suffix *-o-an ~ *-an has absolute reflexes in all Mayan languages but [Chuj-Q'anjob'al-Akatek-Jakaltek], with [Tzotzil] added. Therefore, since these named languages (apart from [Tzotzil]) are as a set notorious for local innovation, I assign the function absolutive antipassive to the morpheme in question.

After repeating his claim regarding the origin of *-o/a-w (root transitives) ~ *-w (derived transitive) 'agentive antipassive', Kaufman continues:

Outside of [Greater K'iche'an] *-(a-)w occurs with absolute/incorporative antipassive function only in [Chuj-Q'anjob'al-Akatek-Jakaltek] where this use is probably an innovation... My scenario makes use of the fact that Tzeltalan and [Tojolob'al] have suffixes -(a)w and -(a)w-an, both meaning absolutive, but having no incorporating or focus/agentive antipassives, to postulate that Western Mayan lost the agentive antipassive function, but not the morpheme *-(a)w, which it kept as a variant in absolute function. When "Huehuetenango" redeveloped the agentive : absolute contrast it unknowingly redistributed the variant forms in a way that was the precise opposite of how they had been

differently used centuries before.

The evidence from CLM texts can be used to revise this scenario. As already pointed out, CLM texts have both a -(V)w form and a -(V)n form with an agentive antipassive function, sometimes even at the same site. Assuming that at least some of the scribes at CLM sites spoke a Ch'olan language, it is possible to conclude that Western Mayan did not lose the agentive function of the -(V)w suffix. It is more likely, given this evidence, that the loss in Western Mayan languages of the agentive antipassive function of the -(V)w suffix took place in Greater Q'anjob'alan, whence it spread to Tzeltalan. Later, the agentive antipassive construction was reintroduced into Greater Q'anjob'alan, only this time it was assigned a cognate of the -(V)n suffix as a marker: it is possible that this construction and marker were then borrowed by Tzotzil but not by Tzeltal, which preserved the pattern reflecting the loss of the agentive antipassive construction. At least some Ch'olan language(s) had preserved the construction with the marker -(V)w, as evident in CLM texts, but the same language(s) at some point began to use a -(V)n marker for this purpose too. This usage is attested as late as the seventeenth century in Ch'olti' (Moran 1625), with the marker -an, as pointed out to me by Barbara MacLeod (personal communication 2000):

(8.1) <Dios cocian taba>
Dios kok-y-an-Ø¹⁷⁹ t-a-b'a
God guard.for-TH-AP-3sABS_i PREP-2sERG_j-RN
'God_i (is the one who) guards for you_j'

Suffice it to say for now that, given the facts that incorporative/absolute antipassives appear to be marked the same in most subgroups, and that the absolute antipassive marker *-(o-)an is reconstructible for proto-Mayan, it is possible to argue that the -(V)n 'incorporative antipassive' suffix in the Late Preclassic texts is a retention from that pattern, while the -(V)w suffix present with the same function in CLM texts is most

¹⁷⁹ The thematic vowel of kok is an underlying /-i/.

likely an innovation that has not survived in the modern Ch'olan languages. Given that both Ch'olan and Yukatekan have reflexes of the proto-Mayan absolutive antipassive marker (i.e., -on and -n, respectively), and that the Late Preclassic texts shows a -(V)n marker as an incorporative antipassive, it is not possible to distinguish between these subgroups based on this epigraphic evidence alone. In CLM texts by ca. A.D. 435 the incorporative antipassive suffix was already the -(V)w form, seen in an example from one of the looted Rio Azul plaques (**figure 5.11c**). Ch'olan speakers either shifted the use of the *-ow 'agentive antipassive' suffix to incorporative examples, or they borrowed a -(V)w incorporative antipassivizer from another language, but they no longer used the original -(V)n suffix for this purpose. Eventually Ch'olan speakers lost both the agentive and incorporative antipassive constructions and markers.

There is at least one case of a positional root. This is the T644 SIT glyph (**figure 8.6e**), although it likely functions as a stative modifier to T168:518 7AJAW 'lord, ruler' rather than as a predicate. It probably reads **CHUM** or **CHUMUL**, for chum-(ul-)∅ (sit-STV-3sABS) '(s/he/it is/was) seated', a stative (aspectless) form of the positional chum 'be seated' which can function as an adjectival modifier, as in chum-ul 7ajaw 'seated lord'.

The T843 STEP glyph (**figure 8.6b**) may represent a passive or inchoative/versive verb (Bricker uses 'inchoative', Kaufman uses 'versive'). In the PSS of CLM texts it generally spells a passive or mediopassive verb. It is attested at B1 in the DO pectoral text, as **STEP-chi**, possibly for STEP-ch-i-∅ 'It became STEP-ed', where -ch could be an inchoative suffix attested in Yukatek as -ch (Bricker, Po7ot Yah, Dzul de Po7ot 1998:406), and -i could be a thematic suffix or the completive status of intransitives. Inchoatives are usually derived from nouns, adjectives, and at least in Modern Yukatek in transitive verbs; the STEP glyph is probably a root transitive given its CLM uses and inflection (see Chapter IV). Though there does not appear to be a Ch'olan cognate of this suffix, based at least on the data compiled by Bricker (1986:36, Table 18), Kaufman

(1989:Part C, 19) suggests that the *-ch part of proto-Yukatekan *-ch-aj ‘versive’ might descend from proto-Mayan *-o/a-t (root transitives) ~ *-t (derived transitives) ‘bounded passive’ in proto-Mayan. Such a suffix may have indeed changed to -ch in Yukatekan through the well-known conditioned phonological change (1) in **table 2.6**, whereby proto-Mayan *t changed to *ch before i and e, and at the end of some polysyllabic and monosyllabic words (Justeson et al. 1985; Kaufman 1976). The context in question, of a possible -ch suffix immediately preceding an -i suffix could have satisfied such conditions (i.e., if **chi** represents a sequence of suffixes -ch-i).

Nevertheless, Kaufman (1989:Part B, 176) also argues that proto-Mayan *-o/a-t ~ *-t may have been retained in Yukatekan and Ch’olan as *-t ‘assumptive’ (i.e., in *-t-al for Yukatekan and *-t-äl for Ch’olan ‘incompletive assumptive’) and in Western Ch’olan too in *-n-t ‘passive’. This would mean that proto-Mayan *(o/a)-t changed to *-ch in some contexts in Yukatekan but not in others. Such a scenario is not implausible, but it would have to have happened during pre-Yukatekan times, since proto-Yukatekan has *-ch-aj as ‘versive’, where *-ch is followed by *-aj, not by an i or e vowel that would have allowed the t > ch change. Thus, for Kaufman’s proposal to work (at least for the Yukatekan part) one has to suppose a point in time when *-t ‘bounded passive’ in Yukatekan could take the plain/completive status of intransitives *-i-k ~ *-i-h, which is likely to have been the case originally. At the same time, when *-t did not take that marker, but instead a marker that had a different vowel, as in *-t-al, then the conditions for the change were blocked.

If Kaufman is correct, then the DO pectoral text could be in Yukatekan, since the reflex of this bounded passive suffix was retained as *-t ‘passive’ in Ch’olan-Tzeltalan (Kaufman 1989:Part C, 28-30). However, given the rarity of this possible -ch suffix in the hieroglyphic texts, its precise function cannot yet be determined. It could constitute a suffix different from the Yukatekan *-ch(-aj) ‘versive’, and maybe even a suffix or

enclitic that was once present in Ch'olan.¹⁸⁰ An example might be the enclitic *+ik 'already' reconstructed for proto-Mayan by Kaufman (1989), although the Ch'olan languages generally use a different form *+ix with the same meaning. In either case, the presence of this -ch suffix cannot be used, at this point, to distinguish between Ch'olan and Yukatekan, given that its precise function is still unclear. Other possible examples of this suffix, such as that from Tikal Stela 7:A7 showing **TZUTZ-yi[chi]** (i.e., **TZUTZ-chi-yi** or **TZUTZ-yi-chi**) (figure 6.45c) must be studied to resolve this issue.

There is at least one possible example of a derived transitive verb in the DO pectoral at C5-D6 (figure 8.6h): **?7u-CH'AB'-(b')a y(a)-(7)AK'-li/IL**. If the analysis 7u-ch'ahb'-ä-Ø-Ø (3sERG-fast/sacrifice-APPL-CMP-3sABS) 'He sacrificed.with it' is correct for C5-D5, then an applicative suffix reconstructible as *-a for pre-Ch'olan or *-ä for proto-Ch'olan (Kaufman and Norman 1984:) would be attested. The primary object of this verb in the DO pectoral text would be the noun spelled **ya-(7)AK'(AB'/B'AL)-li**, which I proposed in Chapter V to be y-ak'-il 'his rope/vine' (see below). Such interpretation makes sense in light of the proposed applicative suffix, since iconographic depictions of the action that the **CH'AB'** noun refers to shows personages using a rope or vine with spines.

Finally, A1 in the DO pectoral (figure 8.6a) corresponds to the INITIAL.SIGN, a sign that almost always begins a text or at least a clause, and which almost invariably

¹⁸⁰ Modern Ch'ol has a suffix or enclitic -ich of unclear function to me. An example is provided by Schumann (1973:27): utz'at 'bueno (good)' vs. utz'at-ich 'está o es bueno (it is good)'. Based on Schumann's description of its function ('marca el hecho de poseer o tener una condición o bien asegura la misma') suggests that it could follow or attach to adjectives and positionals. Interestingly, Kaufman (1989:Part B, 176) points out that in K'iche' the bounded passive cognate "has the additional meaning 'for good' when combined with -aj [from proto-Mayan] *-aj ['mediopassive'] or [*+aj 'earlier']'. This may be similar to the Modern Ch'ol -ich suffix just described, though this is by no means enough to postulate a relationship between -ich and proto-Mayan *-(o/a)-t 'bounded passive'. Yet another possibility might be a descendant of proto-Mayan *-ik, which Kaufman (1989:Part B, 144) reconstructs as a suffix that derives verbal nouns from intransitive verbs. He notes that it is attested in Tzeltal as -ich; it is possible that it would have also been present in Ch'olan-Tzeltalan and Ch'olan as *-ich.

precedes a nonverbal clause or an intransitive clause. For these reasons I treat it as representing the existential particle 7ay. Kaufman (1989:Part B, 234-235) reconstructs *7ar ‘existential/locative predicator’ for proto-Mayan, which was affected by the *r > *y change in Ch’olan-Tzeltalan and Yukatekan. The data from Kaufman suggest that T617:126 **7AY-ya** could spell either 7ay-Ø ‘there is/was’ or **7AY-(y)a** for 7ay-a(n)-Ø ‘there is/was’. The fact that the spellings reviewed in Chapter IV suggest the presence of some suffix beginning with a after 7ay, and that the alternative to the spelling T617:126 **7AY-ya** in early texts was T617:139 **7AY-la** suggests to me that the form was usually 7ay-a(l), with **7AY-ya** possibly an underspelling or a representation of 7ay-a from 7ay-al.

8.4.4. Nominal Morphology. There are a few occurrences of -VI suffixes. One instance is of a -VI suffix on T841 **7AK(AB’/B’AL)** in the DO pectoral, spelled with what is likely the earliest attestation of T24 **li**. T841-**li** could be a case of a personal possession suffix of the form -il/-al. As already mentioned in Chapter VI, in Yukatek none of the proposed words for T841 (7ahk’äb ‘night’, 7ak’ ‘tongue’, or 7ak’ ‘vine’) belongs to the class of nouns that takes an -il possessive suffix (cf. Yukatek 7in 7ääk’ab ‘my night’, 7in-7ääk’ ‘my vine’ and 7inw-ääk’ ‘my tongue’). In Itzaj 7ak’ ‘vine’ may take an -il suffix to express inanimate possession (e.g., T-u-laj=tikin-kun-t-es-aj uy-ak’-il ‘It completely dried the vines (of the milpa)’), associative possession (e.g., 7ak’-il ja ‘bejuco de agua (vine of water)’), or to derive a collective noun (e.g., 7ak’-il ‘viny place’), but not when possessed (Hofling and Tesucun 1997:147). Likewise, in Ch’ol only 7ak’ ‘vine’ has the possessed form iy-äk’-il ‘his vine’ with the suffix -il (Aulie and Aulie 1978:27; Bricker 1986:41). In Itzaj 7ak’ä7 ~ 7ak’ab ‘night’ can be possessed for inanimate possession with -il, but it takes the preconsonantal third person ergative (e.g., 7u-ak’ä7-il tz’on ‘night for hunting’). In Tzotzil y-ok’ ‘his tongue’ does not take an -il possessive suffix, while y-ak’-il ‘his rope’ does (Hurley and Ruíz Sánchez 1978:94, 279). The Ch’ol, Itzaj, and Tzotzil cases would be more consistent with the spellings of T841 if it in fact represents **7AK’** ‘rope, vine’ (Chapter V). Otherwise, T24 **li** might be better

analyzed orthographically as a phonetic complement to **7AK'B'AL**, or as a suffix different from the personal possession suffix, such as an inalienable, impersonal, or associative possession suffix. However, the context for T841 in this and other texts containing T712 is more suggestive of the reading **7AK'** 'vine, rope' for T841, as argued in Chapter V.

Other examples are found in the DO celt text: at A3c, B3d, B4c, and A5b one finds examples of the same sign, a possible T178 **la** sign, while at A7c one finds an example of T24 **li**. The examples at B4c and A7c are more readily analyzable than the others. B4c may be either a phonetic complement for a kin term. A7c may be spelling a nominal suffix for either a possessed noun k'in 'reign' or 'news', or a derivational suffix for a possessed noun k'in-VI 'property'. Indeed, the glyph **7u-K'IN-li** could represent 7u-k'in-il or possibly *7u-k'in-VI, where the specific vowel of the -VI suffix could be different from i. The -VI suffix could be inflectional or derivational. One possibility is based on the Tzeltal term k'in-al 'property' (festival-NMLZR) provided by Kaufman (1971:77). If so, **7u-K'IN-li yo/YOPOL-TE7/te-7AT** for 7u-k'in-al vox/vopol=te7 7at '(It is) the property/news of Scarred/Foliage Penis'.¹⁸¹ If 'property' is the intended meaning, then **K'IN** could refer to the jade celt itself (as the property of Scarred/Foliage Penis). Another possibility for **K'IN** could be Colonial Yukatek's 'news', in which case it could refer to the text itself.

Another instance of a probable -VI suffix is on the MOUNTAIN/PLATFORM glyph in the PMY jaguar, spelled with what may be an early form of T178 **la**. This possible **la** sign is in free substitution with T24 **li** in a word-final context in the JM spoon text, supporting its consonantal value **IV**. This free substitution also suggests that the

¹⁸¹ Jones (1991) has argued that T115 **yo** and the scabs present in the **PENIS** glyph in other examples of the title at B7 could point to the reading vox-7at 'scarred penis'. David Stuart (Grube and Martin 2001) has more recently suggested that **yo-TE7-7AT** might spell instead yopo(l)=te7 7at 'foliage penis'. This suggestion is based on the iconic motivation of T115 **yo** as a leaf (cf. proto-Ch'olan *yop-ol 'leaf'). I have discussed these interpretations in Chapter VI.

vowel of the IV sign is not necessarily significant in this context. This example is either a phonetic complement to MOUNTAIN/PLATFORM, or an associative suffix (cf. n6 in Chapter II). Indeed, the **la** sign in the phrase MOUNTAIN-**la** LORD, could represent an associative suffix of the form -il/-al (cf. Tzotzil ná-il 7ixim ‘corn-house’, ná ‘house’, 7ixim ‘corn’; Lakantun tz’ak-il ich ‘medicine for the eyes’). This suffix is attested in Yukatekan as -il (e.g., Yukatek, Itzaj, Lakantun) and -al (e.g., Itzaj, Lakantun), as well as in Ch’olan-Tzeltalan as -il (e.g., Tzotzil, Ch’ol), -al (e.g., Ch’ol), and -el and -lel (e.g., Ch’ol). It is also attested as -al in Wastekan (e.g., Wastek). For this reason, I think it is reconstructible to proto-Mayan as *-al, and to Late proto-Mayan as *-al ~ *-il (Mora-Marín 2000e). The vowel of some of the -VI nominal suffixes used in the various types of possession constructions in Mayan languages is often conditioned by synharmony or disharmony rules, depending on the function of the suffix. Thus, determining the precise semantics involved in the phrases with these -VI suffixes, as well as the precise roots involved should allow one to determine the precise form of the suffix even if it is not spelled explicitly.

8.4.5. Prepositional Phrases. The DO celt has an example of T51/53 **ta/TA/TI** before T168:518 **7AJAW**, rendering **ta/TA/TI-7AJAW**. If T51 was originally a syllabograph **ta**, rather than a logograph **TA/TI** ‘generic preposition’ (from proto-Mayan *tya), then I think it likely that it was motivated by a form of that preposition such as *ta or *tä, the former reconstructible for proto-Ch’olan-Tzeltalan and pre-Ch’olan, and the latter reconstructible for proto-Tzeltalan and proto-Ch’olan (Kaufman and Norman 1984; Mathews and Justeson 1984).¹⁸² While it is possible that pre-Yukatekan at some point had a form *ta ~ *tya from proto-Mayan *tya, as pointed out by Justeson (personal

¹⁸² Fox and Justeson (1984:196-197) have shown examples of T51 used phonetically, such as the spelling **7AK’-ta-ja** for 7ahk’t-aj-Ø-Ø (dance-INTRVZR-CMP-3sABS) ‘s/he danced’ (Yaxchilan Lintel 52:B2), in the spelling **3-CHAK-K’AT(-ta)** (Princeton shell), and a few other contexts. In all of the contexts where T51 is used phonetically it can substitute for any of the known **ta** signs (e.g., T103, T565).

communication 2001), perhaps coexisting with the reconstructible proto-Yukatekan form *ti(7) (also from proto-Mayan *tya), the consistent use of T51/53 (if interpreted as a phonetic rather than logographic sign) could favor a Ch'olan affiliation over a Yukatekan affiliation for the DO celt was Yukatekan.¹⁸³

However, while the acrophonic origin of phonetic T51 **ta** can be readily explained from its iconic motivation as CENTIPEDE by the term chapaht 'centipede' (Mora-Marín 2001a), suggesting that phonetic **ta** is its original orthographic value and reading, the fact is that in later CLM texts (after ca. 9.4.0.0.0 or A.D. 514) T51/53 was used in contexts where it is clear that it was interchangeable for phonetic T59 **ti** in the spelling of the generic preposition at the same sites and even within the same texts (Justeson and Fox 1989:24-25; Macri 1991:271). Since both Eastern and Western Ch'olan have ti and tä (Kaufman and Norman 1984:82), it is possible that both can be reconstructed to proto-Ch'olan as *ti ~ *tä, especially since at least one of the languages, Chontal, has both (Justeson, personal communication 2000).

T59 **ti** depicts a TORCH, suggesting that it was acrophonically derived originally from *täj 'pine, torch' in proto-Ch'olan or *taj in proto-Yukatekan (from proto-Mayan *tyaj) as a rebus for the generic preposition *ta or *tä, and that later it became associated with the innovated form of the generic preposition *ti. Two questions can be raised at this point. How early was *ti7 present in Yukatekan and Ch'olan? How early was T51/53 **ta** used interchangeably (i.e., logographically) for *ta, *tä, *ti, and *ti7? A partial answer to the first question is suggested by the likely history of T59 **ti**: since it can be explained acrophonically as based on *täj or *taj 'pine, torch' and as a rebus for *ta or *tä 'generic preposition', it seems likely that the form *ti(7) was innovated after the invention of the T59 sign itself, and therefore, after the invention of the Mayan script in

¹⁸³ As Justeson and Fox (1989:24) explain, it is possible to use the forms of the generic preposition to determine linguistic affiliation within the Greater Lowland Mayan area: "evidence that the preposition was tä or ta is evidence for Ch'olan-Tzeltalan speech; evidence that it was ti is evidence for Yukatecan speech." However, as I discuss below, the linguistic and epigraphic evidence can be more complex than this.

the early Late Preclassic period. Thus, it can be argued that the form *ti(7) did not exist before the Late Preclassic period. Moreover, since there are no examples whatsoever of T59 ti used as a preposition during the Late Preclassic period (i.e., prior to ca. A.D. 200), Justeson and Mathews (cited in Justeson and Fox 1989:24) have argued that the form *ti(7) was not innovated during the Late Preclassic period at all, or at least that it was not a form of significance for the Mayan scribes during that period. This is especially the case since the acrophonic origin of T59 TORCH as ti presupposes a prior form ta used in the spelling of the preposition *ta or *tä; some time must have passed between its presumed acrophonic origin as ta and its reassignment as phonetic ti. As Justeson (personal communication 2001) points out, the fact that any clear explicit representation of a *ti(7) preposition is lacking before 9.4.0.0 or A.D. 514, at which point it is first attested at Caracol and Resbalon (Justeson and Fox 1989:25), suggests that proto-Ch'olan had not split into Western and Eastern Ch'olan before this time, and that one is still dealing with a descendant of Ch'olan-Tzeltalan *ta exclusively until then, rather than a proto-Ch'olan stage in which *tä ~ *ti were already in coexistence (or a later stage even, such as Western Ch'olan or Eastern Ch'olan). This strongly supports the glottochronological estimate by Kaufman (1976) and Justeson et al. (1985) for the breakup of proto-Ch'olan into Western Ch'olan and Eastern Ch'olan between ca. A.D. 400-600, since such a development could not have taken place before proto-Ch'olan innovated or borrowed *ti.

The earliest attestation of T59 is found in the Hauberg Stela (**figures 1.29c and A1.29**), dated to A.D. 197. Interestingly, the sign is found at H13a in that text in an inverted position analogous to the position of T51/53 in the DO celt and the PMA flare. There is nothing about its context that suggests a phonetic reading ti or ta, or a grammatical function as a preposition, given that the signs that immediately precede and follow H13a are still poorly understood. Glyph A10a in the same text is an instance of T51/53 ta/TI/TA, showing that the two signs already coexisted by this point. I thus think

that the epigraphic evidence supports an original form of the generic preposition in the language of the scribes as *ta (Ch'olan-Tzeltalan, Ch'olan, Yukatekan) or *tä (Ch'olan), with a subsequent, probably Early Classic development of *ti(7) in Lowland Mayan (Ch'olan and Yukatekan). This in turn could suggest that T51/53 was used phonetically for **ta**, and it would also favor Ch'olan(-Tzeltalan) *ta or *tä over Ch'olan or Yukatekan *ti(7) unless one assumes that Yukatekan probably had *ta before this time.

The PMA flare has an example of T51/53 **ta/TA/TI** before a deity head glyph (PRINCIPAL.BIRD.DEITY or SKY.GOD) that in CLM texts also has the reading **CHAN** 'sky', as pointed out by Freidel, Schele, and Parker (1993:420-421). The phrase renders **ta-PBD** 'to/in/for the PBD/sky'. This supports my claim that the generic preposition was exclusively *tä or *ta (from proto-Mayan *tya) up to ca. A.D. 200, rather than the form *ti(7) (also from proto-Mayan *tya). If the PBD glyph is read **CHAN**, then **ta-CHAN** could also spell a phrase such as Modern Ch'ol ti chan 'up' (Aulie and Aulie 1978:47). Both proto-Ch'olan(-Tzeltalan) *ta and proto-Tzeltalan likely had *ta, either of which could also be represented by means of T51 **ta**. However, the DO celt posdates by about two hundred years the possible date of ca. 100 B.C. for the completion of the Ch'olan *oo > *uu shift (see Chapter VII) suggested by the use of T548, iconically DRUM and logographic for YEAR/ANNIVERSARY, for the term tuun 'year' (or its near-synonym ha7b 'anniversary' via tuun 'year' based on the rebus tuun 'drum, trumpet') attested in Abaj Takalik Stela 2 (cf. Chapter VII). If one assumes that the Abaj Takalik scribes and the DO celt scribes spoke the same language, then we can argue more strongly for Ch'olan *ta (> *tä) than for Ch'olan-Tzeltalan *ta or Tzeltalan *ta. The same may apply to the PMA flare.

A possible case of T89.T740 is attested on the DO pectoral at A2. The possible T89/90/91/92 **tu** sign may spell t-u- 'for/to/by his...'. In CLM texts T740 has two orthographic values: a logographic one read **SIJ** for *sihj 'be born', and a purely phonetic one read **hu** (derived acrophonically from Lowland Mayan *huuj 'iguana'). It is possible

that T740 could mean ‘birth’, especially since in logographic spellings the explicit expression of certain affixes is optional. If so, A2 could spell **tu-SIJ** for t-u-sihj(-il) ‘for his birth’. However, if A2a is a form of T57 **si** one could have here a spelling of **si-hu** or **si-SIJ**.¹⁸⁴ If the former, **si-hu**, is correct, the word spelled could be based on proto-Ch’olan *sih ‘gift’. If the latter, **si-SIJ**, is correct, the word could be based on *sihj ‘be born’, and A2a **si** could be a phonetic complement. Given that A2 immediately follows a likely verb, **STEP-chi**, possibly for **STEP-ch-i-Ø** ‘It became STEP-ed’, I think it likely that it represents the subject of the verb (e.g., ‘The gift became STEP-ed’).

8.4.6. Discourse Structure. Like CLM texts (Mora-Marín 2001b), the DO pectoral is characterized by the prevalence of intransitive clauses, with only one possible exception at C5-D6: **?7u-CH’AB’-(b’)a y(a)-(7)AK’/(7)AK’AB’/(7)AK’B’AL-li/IL** ‘he sacrificed/fasted.with his vine/tongue’ (this assumes the presence of *-ä ‘applicative’ on the verb). All other clauses in this text appear to be based on intransitive or intransitivized verbs or predicates (e.g., **7AY(-y)a**, **STEP-chi**, **BEARDED.GOD.N-ni**, **TZIK-no**). Two of these verbs (**BEARDED.GOD.N-ni** and **TZIK-no**) may represent antipassivized transitives with incorporated generic nouns (e.g., **(pa-)PAM** ‘flat thing/surface’). A pivot-chaining structure with the following sequence of coreferential arguments can be defined starting at B2 (the brackets indicate that the argument is not expressed as a lexical noun phrase): **S/S/[S]/[A]**.

The prevalence of root or derived intransitive verbs suggests a preference for S arguments, just like in CLM texts (Chapter III). It is thus possible to tentatively posit S as

¹⁸⁴ A2 is composed of two signs. A2a resembles both T57 **si** and T89 **tu**, and A2b corresponds to T740, whether **hu** or **SIJ**. The fact that the IGUANA glyph lacks the “bubbles” present in the mouth when it is read **SIJ** suggests that it is an instance of **hu**. Although A2b appears to have a suffix (i.e., a potential third sign A2c), the graphic element below A2b probably corresponds to the legs of the IGUANA icon. This element is present mainly during the Early Classic period (e.g., Yaxchilan Lintel 37:D7a, in the spelling **k’u-hu** for k’uh-u(l) ‘divine’, and Yaxchilan Lintel 35:B6, in the spelling **7AJ-(si-)SIJ-NAH** for 7aj+sihj=nah ‘he of the birth-house(?)’). Thus, the legs may be present regardless of the precise reading of T740, while the bubbles in the mouth are always present when T740 is read **SIJ**, and are on occasion present when it is read **hu**.

the preferred discourse pivot of Late Preclassic Mayan texts. In addition, there may be examples of pivot chaining. The clearest example is found in the DO pectoral. Virtually every clause in this text seems to have the same topic in an underlying A function: FLOWER-HAWK (possibly NIK-MUWAN/CHAN). What this means is that, just as in CLM texts, voice alternations may be used to maintain this coreferential argument as pivot across clauses. The first clause of the text (A1-A2) does not obviously have an underlying agent at all: it may be an agentless inchoative verb (7ay-Ø STEP-ch-i-Ø si-hu/sih ‘The gift became STEP-ed’). The second clause (B2-B6), if correctly parsed, may be an incorporative antipassive clause with the individual named FLOWER-HAWK as subject, and an incorporated noun as underlying object (GOD.N-n-i-Ø=päm [7aj...nik muwan] ‘7aj...Nik-Muwan surface-GOD.Ned’). The third clause (C1-D3), if correctly parsed, and containing the same antipassivized verb as the preceding clause, has the same individual as agent (GOD.N-n-i-Ø=BAT.HEAD [nik muwan...] ‘Nik Muwan... BAT.HEAD-GOD.Ned’). It is in the fourth and fifth clauses where omission of the coreferential pivot is apparent. In the fourth clause (C4-D4), only the verb and incorporated object are given, with no explicit underlying agent noun phrase (tzik-n-o(m)-Ø=päm ‘(and) (he) surface-read/honored’). In the fifth clause (C5-D6), the verb is apparently an active derived transitive with an applicative suffix followed by its primary object, with no explicit agent noun phrase (7u-ch’ahb’-ä-Ø-Ø y-ak’((a)b’(äl))-il ‘(and) (he) sacrificed/fasted.with his 7ak’((a)b’(äl))’). The only logical underlying agent for the fourth and fifth clauses is the only human actor mentioned in the text, FLOWER-HAWK. Consequently, the passage from B2-D6 may be a case of an S/S/S/A pivot chain, where the same argument appears as the subject of three antipassive verbs (i.e., as S) and one active derived transitive verb (i.e., as A).

The UNP clamshell text does not appear to be a case of pivot-chaining. The first clause is based on a passive verb (GOD.N), and its subject is an inanimate entity (FOREHEAD, probably ‘flat surface/thing’, a reference to the flat or smooth surface of

the clamshell pectoral itself). The second clause may also be passive, with its likely subject consisting of a likely possessed noun. While the possessor of that noun may be the same person who carried out the event of the first clause, this is not explicit in the grammatical structure, as it would be if the GOD.N verb at the beginning of the text were antipassive instead of passive.

The portion of the text on the PMY jaguar that was analyzed here is characterized by one antipassive clause and a possible equational clause. The antipassive clause is an incorporative antipassive clause based on the verb GOD.N-*ni* and an incorporated noun SPROUT possibly referring to the jaguar figurine itself. Its likely subject (underlying agent) is expressed at A2-B2 (FLOWER-?TREE/PENIS), minimally, although possibly from A2-B4. If the first analysis (i.e., A2-B2) is correct, then A3-B4 could make up a nonverbal clause. If so, the subject of the first clause ('Nik-Te7/7at figurine-GOD.Ned') would be the subject of the second clause ('Mountain-Lord is/was a/the spotted.beast'), resulting in an S/S pivot chain. Another analysis of the possible nonverbal clause (A3-B4) is possible, if B3 is 7u-B'AH or 7u-WAY '(It is/was) the image/portrait//animal.spirit of' (i.e., 'The image of Mountain Lord is/was a/the spotted.beast'). In this second case, the resulting pivot chain between the first and second clause would be an S/GEN. There clearly is a need for more data to attempt an analysis of the clauses after B4, as well as more data on the signs present at B3.

8.5. Additional Innovations. There is evidence for additional lexical and phonological innovations that can allow for a rather narrow determination of the linguistic affiliation of some texts. As mentioned in Chapter VII, the evidence discussed by Justeson and Mathews (1983) and Justeson et al. (1985) pertaining the use of T548 **HAB'/TUN** suggests that the shift of Ch'olan-Tzeltalan *oo to Ch'olan *uu was completed perhaps as early as ca. 100 B.C. but certainly by ca. A.D. 100. The main evidence for this claim comes from three monuments, Abaj Takalik Stela 2, Tres Zapotes Stela C, and La Mojarra Stela 1.

The use of T548 as a term for 'year' in the context of the Long Count Introductory Glyph in these texts is most likely owed to the the homophony between the terms in Ch'olan for 'stone, year', *tuun (from proto-Mayan *toon), and for 'slit drum' (from Late proto-Mayan *tuun), the latter concept being the iconic referent of T548. This usage on Abaj Takalik Stela 2 dated to 236-19 B.C. and on Tres Zapotes Stela C dated to 32 B.C. suggests three things: (1) the shift had occurred by the time these monuments were carved; (2) that some time must have passed between the innovation of the sign and its readings by Ch'olan scribes and its adoption by Epi-Olmec scribes; and (3) that part of the ritual and glyphic structure of the long count system was borrowed by Epi-Olmec scribes from Mayan scribes. Allowing for some time for the innovation of the sign and its reading, as well as for its adoption by Epi-Olmec scribes, a conservative estimate of ca. 100 B.C. seems reasonable. And lastly, the text on La Mojarra Stela 1, dated to A.D. 157, shows the use of the DRUM sign as Zoquean *7ame7 'year' and *kowa 'drum' (Justeson, personal communication 2001). This confirms that the DRUM sign had these readings, and therefore, that the homophony between the words for 'year' and 'drum' in Ch'olan was most likely the motivation for the use of T548 DRUM as 'year'. This means that the shift had taken place for sure by the time of the carving of La Mojarra Stela 1, or ca. A.D. 100 for convenience. Thus, this evidence suggests that Ch'olan-Tzeltalan had already broken up into separate Ch'olan and Tzeltalan branches between ca. 100 B.C.-A.D. 100, closely matching Kaufman's (1976) estimate of ca. 300 B.C.-A.D. 100 for this event.

Also, as discussed in Chapter VI, A2 in the CNT 6125 text spells **yu-yu** or **y(u)-(7)UY** (**figure 8.5**), and in either case the word is y-uhy 'his/her/its bead/necklace', reflecting the exclusive Ch'olan innovation of a final y in the root *7uhy, which is a reflex of proto-Mayan *7u7h 'bead' (Kaufman and Norman 1984).¹⁸⁵ This suggests that

¹⁸⁵ Since preconsonantal h was not represented in the CLM script (Justeson 1989; Lacadena and Wichmann 2001; Mora-Marín 1998), I do not provide preconsonantal h in glyphic transcription, as in **7UY** for *7uhy.

by ca. A.D. 100-200, a possible dating for the CNT 6125 text. this Ch'olan innovation had already taken place.¹⁸⁶

8.6. Discussion and Conclusions. The following conclusions regarding the orthographic practices and grammatical structure of Late Preclassic texts can be drawn based on the evidence discussed in this chapter.

(1) Phonetic sign usage is not common, but is clearly attested. The majority of phonetic signs present may have at least a partly grammatical function: to spell affixes and other particles. This is the case of prefixes (spelled **7u-**, **ya-**, **yo-**) and suffixes (spelled **-ni**, **-no**, **-chi**, **-li**, **-la**, **-ya**), the generic preposition **tä/ta/ti/ti7* (spelled with T51/53 **ta/TA/TI**), and a possible instance of a contraction of a preposition and an ergative prefix (spelled possibly with T89 **tu**, unless this was intended as T57 **si**, which is formally identical to T89 **tu** in some Early Classic texts). In fact, based on these uses it is possible to postulate that the earliest phonetic signs were used for spelling grammatical affixes and particles, as proposed by many students of writing systems in general and of Mesoamerican writing systems in particular (e.g., Justeson 1986; Justeson and Kaufman 1993).

Assuming this to be the case, the evidence points to three types of affixes as the potential catalysts for the process in Late Preclassic Mayan writing, especially in narrative texts: (1) preconsonantal ergative agreement markers, which are always non-zero (while the most frequent absolutive marker in narrative texts is \emptyset), with **7u-** 'third person ergative' as the most frequent in most discourse genres, and the most likely to have spearheaded the process; (2) prevocalic ergative agreement markers, which are likely to have served as a model for phonetic sign usage in phonetic complementation (Justeson, personal communication 1997); and (3) spellings of **-V(G)** verbal suffixes, or of sequences of suffixes of the form **-(V)C-V(G)**, where G stands for a "weak consonant"

¹⁸⁶ Although iconographically the T62 **yu** icon is attested as early as ca. 400-200 B.C. in Kaminaljuyu Stela 10 (figure 6.72), this fact does not allow for any linguistic inferences.

that can be omitted phonologically and/or orthographically, as illustrated by the examples of intransitively-inflected verbs in *-i(h) ‘completive/plain status marker’ with Ci signs (e.g., **-ni**, **-chi**, **-yi**), and the possible example of a derived transitive verb in *-ä ‘applicative’ with a Ca sign (i.e., **-b’a**). Justeson and Mathews, as cited in Justeson and Fox (1989:24-25, 49), have argued that T103/113, T122.150, T565, all phonetic **ta**, show up first before 7a-initial words, as in the phrase t-ajaw-lel ‘in rulership’ when spelled T103/113/565.168:188 **ta-(7)AJAW-le(-le)**. After this, T103 and T565 become more broadly used, at Palenque and other sites in the Western lowlands, in the spelling of the preposition *ta/tä. This is the same process, involving the spelling of inter-morpheme boundaries, seen in the use of **yV** signs to spell the prevocalic third person ergative prefix y-.

(2) The earliest phonetic complements may include full complements of the C_1V_1 sequence of a C_1V_1C root or stem (e.g., **[pa]PAM** for *pa[h]m ‘surface/flat.thing’, possibly **si-SIJ** for *sihj ‘be born’), as well as partial complements of possessed or inflected roots (e.g., **y(a)-(7)AK’/(7)AK’AB’/(7)AK’B’AL-li/IL** for y-ak’(äb’/b’äl)-il ‘his ?’, **7AY-(y)a** possibly for 7ay-a ‘there is/was’, **?7u-CH’AB’-(b’a)** for 7u-chahb’-ä-Ø-Ø ‘He sacrificed it’). It is possible to see the former (full phonetic complements) as a logical development from the latter (partial phonetic complements used in part for expressing inflectional and derivational material), given that the latter type may be of more importance initially. The only contextually plausible examples of a fully phonetic spellings of words are T130:REED **wa-7AJ** for **7AJ-wa** in the DO pectoral, a possible spelling of *7ajaw ‘lord, ruler’, and T57.740 **si-hu** possibly for *sih ‘gift’, if the first sign is not T89 **tu**.

(3) The languages represented in these texts were Lowland Mayan languages, and more specifically, whenever such an attribution can be made, Ch’olan languages. The use of the innovated *7uy- in the DO pectoral suggests specifically a Lowland Mayan language, while the use of the innovated form *7uhy from proto-Mayan *7u7h ‘bead’ in

the CNT 6125 text suggests specifically a Ch'olan language. The presence of a possible inchoative/versive suffix *-ch in the DO pectoral could favor a Yucatekan affiliation over a Ch'olan affiliation, but since this possible suffix is not understood more research on it is necessary to confirm this. Otherwise, the use of the inherited proto-Mayan *-(o-)an 'absolute antipassive' does not allow for a specific linguistic affiliation but is nonetheless consistent with either Yucatekan *-n or Ch'olan *-(o/a-)n. The use of likely *-il or *-al nominal suffixes only points to retentions from proto-Mayan and Late proto-Mayan. A more refined analysis of the precise readings and functions might make it possible to determine a more specific linguistic affiliation. Also, the use of T51 **ta/TA/TI** in the DO celt (A.D. 120) and PMA flare (A.D. 1-250) to represent the generic preposition could favor a pre-Ch'olan *ta or proto-Ch'olan *tä form over a proto-Ch'olan or Yucatekan *ti(7) form. Ch'olan-Tzeltalan *ta usage. Given that these attestations postdate the suggested date of ca. 100 B.C. for the completion of the Ch'olan-Tzeltalan *oo > Ch'olan *uu shift, and assuming that the DO celt texts represents the same language as that on Abaj Takalik Stela 2, Ch'olan-Tzeltalan and Tzeltalan cannot be strongly supported. (If it were not for this temporal frame of reference, Ch'olan and Ch'olan-Tzeltalan *ta would be equally likely).

(4) The texts may exhibit examples of root intransitive (e.g., T667-**li-ye**), (medio)passive (e.g., BEARDED.GOD.N, STAR-**yi**), antipassive (e.g., BEARDED.GOD.N-**ni**, TZIK-**no**), inchoative/versive (i.e., STEP-**chi**), and derived transitive (i.e., ?7u-**CH'AB'-(b')a**) verbs. The clear cases of passive or mediopassive verbs point to the use of the infix -h-, which is reconstructed by Kaufman (1989) as proto-Mayan *-h- 'mediopassivizer of root transitives'; thus, a mediopassive interpretation is not unlikely, despite the fact that Ch'olan -h- is nowadays only a passivizer, while Yucatekan has preserved the original function. The antipassive verbs are specifically incorporative antipassive verbs; so far no other type has been identified.

(5) The most common word order for intransitive clauses appears to be VS (e.g.,

DO pectoral, JM spoon, UNP clamshell) with a possible example of SV (i.e., PMA flare). The various incorporative antipassive clauses exhibit a V[=O]S word order consistent with that of intransitive clauses in general. The only possible transitive clause has one expressed nominal argument, reflecting a VO word order. Nonverbal clauses exhibit a predicate-initial word order, PS. This is all consistent with what is expected for proto-Ch'olan-Tzeltalan, proto-Ch'olan, and proto-Yukatekan. There are no transitive VOA clauses in the texts, but these are quite rare even in much much lengthier CLM corpus of texts.

(6) There appears to be a preference for S pivots in the texts studied in Chapter VI. This is consistent with the discourse structure of CLM texts described in Mora-Marín (2001b), which supports a definition of S as the preferred discourse pivot of CLM texts, and a preference for one argument per clause at a time. There are mainly S/S pivot chains, but one possible S/A alternation is attested, and two possible S/GEN alternations may be attested. Voice alternations can be used to maintain a certain argument as pivot across a series of clauses (e.g., DO pectoral, JM spoon), including verbal and nonverbal clauses (e.g., PMA flare, PMY jaguar).

CONCLUSIONS AND IMPLICATIONS

9.0. Overview. In this section I summarize and discuss the results from this dissertation that are more pertinent to evaluating the methodological assumptions and techniques applied as well as the historical questions about Mayan writing, Mayan languages, and Mayan political economy that I have addressed.

9.1. Evaluation of the Methodological Assumptions and Techniques. This dissertation has focused on the study of Late Preclassic Mayan portable texts. Its primary goal has been to describe, analyze, and interpret the orthography, grammar, and content of a specific subset of the corpus of Late Preclassic inscriptions. Its secondary goals include several issues of broader interest: the origin of the scribal, priestly, and kingly institutions; the origin of Mayan script and its orthographical conventions; and the social context, both in its external and internal dimensions, that likely played an important part in the diffusion of writing in the Mayan region. To achieve these goals I have assumed the following: the content of the texts on portable preciosities is likely related to their craftsmanship, ritual dedication, and ownership; the language of the texts is likely a Lowland Mayan language, more likely Ch'olan but possibly Yukatekan as well; Ch'olan-Tzeltalan speakers may have been present in both highlands and lowlands, telling from loanword evidence, during the Late Preclassic period; the orthographic practices and sign inventory may have had diverse origins, whether inherited from an ancestral Olmec script, developed independently from other scripts, or codeveloped/acquired through interaction with other script traditions; and the script is likely a logosyllabic script, read from left to right, top to bottom, in single or double columns, and likely employs semantic determiners and diacritics.

The ethnohistorical methods applied in this dissertation have included the following: art history and paleography used to date unprovenanced texts, to recognize the iconicity of signs with unknown readings, and to recognize Classic and Postclassic

counterparts of Late Preclassic signs; epigraphic assumptions and techniques used to analyze the orthographic practices for spelling affixes and entire words, as well as for identifying the values and readings of signs; and linguistic assumptions to analyze the grammatical structure, to determine the possible affiliations of the texts, and to define morphosyntactic and discursive contexts for constraining possible sign readings and interpretations.

The application of these methods has been successful in general terms. The proposed identifications of sign readings and grammatical patterns show cohesion and agreement with Classic Lowland Mayan orthographical practices and grammatical structure, and with expected developments in the history of the Lowland Mayan languages and the Lowland Mayan script, as summarized below. Also, the application of epigraphic methods, such as the identification and analysis of structurally similar passages in order to identify constituent phrase structures and to determine their likely functions has allowed for the parsing of entire texts, and for their interpretation of in a way that agrees with Mayan grammar in general, and with Lowland Mayan and Classic Lowland Mayan grammar in particular. These methods have also allowed for the partial reconstruction of the Late Preclassic syllabary and the likely Ch'olan linguistic affiliation of the texts.¹⁸⁷ The art historical and paleographic methods applied have also yielded positive results: they have allowed for the discovery of the origin of various Classic period signs, some with important implications for Mayan political history, and for the relative dating of the texts.

It is important to emphasize that a study of this type has only become possible in recent times, with the increasingly successful decipherment of Classic and Postclassic Lowland Mayan texts, and with the more accurate documentation of Late Preclassic texts,

¹⁸⁷ Many of the remaining uncertainties will no doubt be one day resolved with the discovery of more texts, given that the goals of this study have been achieved with a very limited amount of data. Indeed, the eight texts studied in Chapter VI add up to a total of only 71 glyph blocks.

the last factor being one of the original objectives of my dissertation research. With the limited amount of data available for the Late Preclassic Mayan script, and in the absence of other aids to decipherment such as bilingual texts, it is rather doubtful that any decipherment of the Mayan script could have ever been achieved based on that subset of texts alone. But with the thousands of Classic and Postclassic texts, and their successful decipherment by dozens of scholars from around the world, such a task is not as daunting as it once might have seemed.

9.2. Implications for the History of the Lowland Mayan Script. The results of this dissertation provide new information on the history of the Mayan script. First, the art historical and epigraphic evidence presented in Chapters I, VI, and VII suggest the existence of a period of intense interaction between the Mayan highlands and lowlands. It seems that the same script was used in the Mayan highlands and lowlands during the Late Preclassic period, given not only the number of shared artistic and orthographic conventions, such as a double-column format, but also a shared sign inventory. Whether they represented the same Mayan language is not clear, but it seems likely that both the highland and lowland versions of the Mayan script represented some Mayan language, telling from the Abaj Takalik Stela 5 evidence, which is also closely related stylistically to the Dumbarton Oaks jadeite celt which does have a likely proto-Ch'olan marker (T51 **ta** for ***tä** 'generic preposition'), and also from the MOUNTAIN-LORD epithet shared by Kaminaljuyu Stela 10, the Jade Museum jadeite spoon, and the Peabody Museum at Yale basalt jaguar figurine, the last two demonstrably Lowland Mayan texts.

In addition, the epigraphic evidence also suggests some examples of possible diffusion among the Mayan, Epi-Olmec, and in some cases Zapotec scribal traditions, or a case of shared inheritance of signs from a precursor pan-Mesoamerican script, such as the proposed Olmec script (Justeson 1986; Justeson and Mathews 1990; Justeson et al. 1985). Some of these examples have very significant implications for the conceptualization of the institution of rulership among the Mayans, such as the use of the Olmec

DOUBLE.MERLON and EYEBROW motifs as a possible modifier DIVINE in Late Preclassic Mayan 7AJAW ‘lord, ruler’ titles, and the MOUNTAIN-LORD epithet. I mention these further below.

The spelling of grammatical affixes was perhaps the context where phonetic signs first appeared (Justeson 1989); this process was probably hastened by the prevocalic contexts for possession, by the spelling of word-final -V(G) suffixes, and by the spelling of word-final -C-V(G) sequences of suffixes. These contexts for phonetic sign usage may have served as models for the generalization of optional phonetic sign usage in other contexts (i.e., phonetic complementation and fully phonetic spellings). Indeed, while a single CV phonetic sign of the form 7u would be sufficient to spell the third person preconsonantal ergative prefix in all its contexts, at least five CV phonetic signs (i.e., yi-, ye-, ya-, yo-, yu-) are needed to represent just the third person prevocalic ergative prefix, all of which may be attested in the Late Preclassic corpus (e.g., T17 yi in the UNP clamshell, T710 ye in the PMA flare, T126 ya in the DO pectoral and HTZ axe, T115 yo in the DO celt and T673 yo in the PMA flare, and T62 yu in the CNT 6125). Likewise, the spelling of the *-i(h/y) ‘completive status of intransitives’ marker required the development of multiple Ci phonetic signs in order to represent the final consonant of the verb stem and the status marker in the case of root intransitives (i.e., CV(G)C₂-(C₂)i for CV(G)C-i). And lastly, the spelling of the *-i(h/y) ‘completive status of intransitives’ marker on intransitives derived from transitive verbs or from nouns likely required the development of Ci phonetic signs to represent the consonant of a preceding derivational suffix and the intransitive status marker (e.g., CV(G)C₂-ni for CV(G)C-(V)n-i). The first two contexts of phonetic sign usage could have led by analogical extension to the practice of optional phonetic complementation, whether synharmonic (e.g., 7AJAW(-wa) for *7ajaw ‘lord, ruler’) or disharmonic (e.g., 7AT(-ti) for *7at ‘penis’), while all three may have given rise to the practice of full phonetic spellings (e.g., 7u-ti for 7u[h]t-i-Ø ‘it was/got finished’ or ‘it happened’). If correct, then the script had developed these

conventions already by ca. 300-100 B.C., the estimated date for the DO pectoral.

Because phoneticism was originally needed mainly for the spelling of grammatical affixes (e.g., T1 7u for 7u-) and particles (e.g., T51 ta for *tä or *tä), it is possible that the script lacked, originally, a full syllabary, unless affixes containing all possible (and orthographically distinguishable) CV sequences were present in the language or languages represented. Although I would agree in theory with authors like Houston (2000) in that the scribes probably never worked with a partial syllabary but instead developed a full syllabary from the start, the evidence so far does not necessarily support this. Given the fact that some morphemes are much more frequent than others (e.g., 7u-, (7u)y-, -il, -i(h)), and that it is clearly in the spelling of grammatical affixes where phoneticism seems to appear with any frequency in the early texts, it is conceivable that only a relatively small number of phonetic signs were in frequent use. And given the general shapes of suffixes and suffix sequences (e.g., -i if root intransitives, -(V)C-i if derived intransitives), and the infrequent occurrence of some phonemes (e.g., *p', *t'), it is possible that some CV combinations may not have been necessary for spelling any affix, and therefore may not have existed as a distinct CV phonetic sign.

There are some possible examples of underrepresentation of grammatical affixes. T644 SIT, whether it is used predicatively or attributively in the DO pectoral, is shown without an implicit -V_i 'stative/adjectival' suffix. Likewise, MOUNTAIN, which occurs twice in the portable texts and once on KJ Stela 10, is shown once (PMY jaguar) with a possible precursor to T139 la, possibly to represent an associative suffix. However, it is shown in the other two instances without it, despite occurring in very similar if not identical morphosyntactic contexts. The orthographical absence of these affixes is most easily explained if one assumes that both glyphs, T644 and MOUNTAIN, function attributively, as modifiers to the following nominal phrase. A pre-nominal position is expected of modifiers, and thus, when T644 was written before the 7AJAW glyph, a noun, it was obvious that it was serving as its modifier and therefore the -V_i suffix was

not orthographically required. The same may be true of the MOUNTAIN glyph.

9.3. Implications for the History of the Lowland Mayan Languages. If my conclusions in Chapters VI and VIII are correct, it seems that the Ch'olan-Tzeltalan split took place sometime during the first half of the Late Preclassic period, possibly even by ca. 100 B.C., in accordance with the glottochronological estimates by Kaufman (1976, 1989) and Justeson et al. (1985). It is even possible that such split may be correlated with the archaeologically-proposed population movements from the Mayan lowlands into the Chiapas highlands, where modern Tzeltalan (Tzeltal and Tzotzil) speakers reside (cf., Clark, Hansen, and Pérez 1998). The split had certainly taken place by ca. A.D. 100-200, the estimated dating for the CNT 6125 text, where the exclusively Ch'olan lexical innovation **7uhy* 'bead, necklace' from proto-Mayan **7u7h* is attested. And if the DO pectoral, with its prevocalic allomorph of the third person ergative prefix **7uy*, represents a Ch'olan language, it is likely that the split had taken place by ca. 300-100 B.C., the possible dating for this artifact.

There is no explicit evidence pointing exclusively to Yucatekan as the affiliation of any of the texts studied, but in most cases a Yucatekan affiliation cannot be discounted either. The possible instance of an inchoative/versive suffix **-ch* could suggest a Yucatekan affiliation for the Dumbarton Oaks quartzite pectoral; however, this suffix is not contextually well-defined and occurs in only two other Mayan texts, making it difficult in those cases too to determine their function. Otherwise, the explicit phonetic evidence points to shared proto-Mayan retentions (e.g., **(o-)an* 'absolutive/incorporative antipassive', **7u-* 'third person preconsonantal ergative prefix', **-iil ~ *-aal* 'inalienable/personal/intimate' possession), to shared Western Mayan and Yucatekan retentions/innovations (e.g., **y-* 'third person prevocalic ergative prefix'), to shared Lowland Mayan innovations (e.g., **7uy-* 'third person prevocalic ergative prefix'), to shared Ch'olan-Tzeltalan innovations (e.g., **ta* 'generic preposition'), or in a few cases, to exclusively Ch'olan innovations (e.g., **tuun* 'stone', **7uhy* 'bead/necklace').

The case where it is not possible at first to distinguish between Ch'olan-Tzeltalan and Ch'olan is the use of T51 **ta/TA/TI** in the Dumbarton Oaks jadeite celt to spell a generic preposition that is a reflex of proto-Mayan *tya. This preposition was probably *ta in Ch'olan-Tzeltalan, and became *tä in proto-Ch'olan as a result of the *a > *ä change (more generally, *VV > *V). Because the Mayan script uses Ca signs for both Ca and Cä sequences, T51 **ta** does not make it clear which form, *ta or *tä was intended. However, external evidence suggests that a Ch'olan form was intended, whether pre-Ch'olan *ta or proto-Ch'olan *tä: this evidence consists of the use of T548 **HAB'/TUN** on Abaj Takalik Stela 2, which points to the Ch'olan *oo > *uu change by ca. 100 B.C. Given this evidence, and the fact that the DO celt, which dates to A.D. 120, shows close iconographic ties to Abaj Takalik, it seems very likely that either pre-Ch'olan *ta or proto-Ch'olan *tä was intended.

9.4. History of Lowland Mayan Kingly, Priestly, and Scribal Institutions.

The history of sign forms and the contents of the texts analyzed in this dissertation can provide very insightful information on the early kingly, priestly, and scribal institutions.

Much can be learned indeed about the priestly and scribal groups from their textual products. First, the texts discussed in this study are all inscribed on hard materials such as jadeite and basalt. This implies that the scribes had a certain technical training in fine lapidary work that probably required a formal learning context. Some of the earliest monumental texts, such as Kaminaljuyu Stela 10, El Mirador Stela 2, and Abaj Takalik Stela 53 exhibit small-sized and finely-incised glyphs, not unlike those on the smaller media such as jade pendants. This could suggest that the same scribes were responsible for working on all media. This idea finds support in the Early Classic jade belt plaque tradition, which as I have explained in Chapter V, was characterized by a style and subject matter that either mimicked or was mimicked by the contemporaneous monumental stone stela tradition. Thus, a significant amount of formal and technical training may have been involved already by ca. 300-100 B.C. In addition, the formal

training required to master the artistic and orthographic conventions, the sign inventory which undoubtedly consisted of a few hundred signs (Grube 1991, 1994), the literary genres with their respective discourse and grammatical nuances, as well as the historical and cosmological traditions that comprised the subject matter of the texts adds up to a significant amount of technical training and perhaps a highly formal and socially circumscribed learning setting.

A formal training would also imply either a means of payment for that training, such as tribute, and a status or vocational group that monopolized access to such training. A high social status of scribes is evident from mortuary data as early as ca. A.D. 150 with the burial of a likely scribe at Kichpanha, Belize, where the Kichpanha bone was found (Gibson et al. 1986). The Kichpanha bone itself, likely the stylus of the possible interred scribe, is inscribed with a likely equational sentence reading something like 'The [...A8] is a Divine Sun-face Jaguar [...]'. This could be a reference to the scribes animal spirit or shapeshifter, which could suggest this person may have been a priest or shaman or both. In the Classic period scribes were generally priests (7aj-k'in) and some at least were shapeshifters (7aj-wayab'), as discussed in Chapter I. Priestly groups typically make up self-disciplined and highly-trained groups and make up the ideal group to have innovated or at least systematized the formal learning of the script. The cosmological and astrological applications of the script were also typically priestly activities in the Classic period and in Colonial times (Tozzer 1941). This evidence, as well as the fact that the scripts and iconographic systems that were used to convey the ideology of the Izapan/Kaminaljuyu Horizon became so widespread and pervasive during the Late Preclassic point to a very powerful position of priests and scribes in Southeastern Mesoamerica. Indeed, it was most likely priests and scribes who systematized and spread this ideology and its associated iconographic and glyphic means of representation (Freidel 1981) .

The art historical and epigraphic evidence relevant to the origin of the precursor to

the Classic T168:518 **7AJAW** title is based on the icon **REED** also used as the sign for the day name **REED**. It is possible that this iconographic composition may have related legitimate kingship with places where reeds are in abundance, and therefore with places of reeds, or the idea of Tollan. However, this is not conclusive; the **REED** sign may have been a rebus, based on a descendant of proto-Mayan *7aaj 'reed', in the spelling of *7ajaw (from proto-Mayan *7aajaaw). More telling perhaps is the use of the Olmec **EYEBROW** and **DOUBLE.MERLON** motifs as the graphic equivalents of the Classic T32/41 **K'UH(UL)** 'god/divine' sign in titles. This points unambiguously to the Olmec as the originators of the concept or paradigm of rulership that subsequent states adopted or attempted to follow.

Also, the Jade Museum jadeite spoon contains the first example of a full-blown Emblem Glyph: **DIVINE-MAN-7AJAW-?la/li**. The variable sign corresponds to T505, the rotated T504 **7AK'B'AL** sign which substitutes in one context for T566 **MAN** in Classic texts. The latter is used as the variable sign of the Emblem Glyph of some polity; whether the jade spoon's example refers to the same site as the Classic example is not possible to determine. This suggests in either case the presence of political organizations during the Late Preclassic of a similar type as the Classic polities named by Emblem Glyphs. Given the existence of Late Preclassic sites like El Mirador this should not be too surprising.

In addition, the texts are also explicit to some extent about the prerogatives of rulership, and also about the optimal characteristics of Late Preclassic Mayan rulers. For one, the epithet **MOUNTAIN-LORD** likely refers to the ruler's ceremonial performance atop artificial platforms or mounds, which in Classic Lowland Mayan texts are referred to as 'mountains' or 'hills'. In fact, Late Preclassic Izapan monuments commonly depict such performances on top of **MOUNTAIN** or **EARTH** icons. The performances themselves may have entailed not only the display of royal regalia and palladia, the symbols of rulership, but also their ritual dedication or blessing. This is what the

dedicatory verbs (e.g., BEARDED.GOD.N, STEP, TZIK, STAR) and names of objects or parts of the objects (e.g., FOREHEAD, BAT.HEAD, SPROUT, 7IK') present on these texts might make allusion to. And finally, the performances represented on such monuments commonly portray rulers wearing the costume of gods or supernaturals that they have transformed themselves into through a ritual dance. This final component of such performances is what the allusions to animal spirits (e.g., BEHEADED.JAGUAR) and impersonated deities (e.g., ?-CENTIPEDE) might refer to.

9.5. Future Research. The corpus of Late Preclassic texts still requires improved documentation, especially the monumental texts. Much can be learned from comparing such texts with the portable texts studied in this dissertation. The finding of the MOUNTAIN-LORD glyph on Kaminaljuyu Stela 10 suggests that such texts in fact match the subject matter and orthographic conventions of their contemporaneous portable counterparts. This could prove to be one of the keys to the decipherment of scripts such as the Kaminaljuyu script. Also, with the future discovery of more texts, or the improved documentation of poorly documented texts, the reconstruction of the orthographic practices, the sign inventory, the syllabary, and the grammar of early texts will increase in accuracy and detail.

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ADDENDA

ADDENDUM 1:

LATE PRECLASSIC INSCRIPTION DOCUMENTATION (LAPIDA) PROJECT

A1.0. Overview. This section concerns the current status of the Late Preclassic Inscription Documentation (LAPIDA) Project that I have been conducting with support from FAMSI and other organizations.¹⁸⁸ I designed LAPIDA with one short-term objective in mind: to collect accurate data for my dissertation research, which deals with the orthography and grammar of Late Preclassic Mayan texts. During my research I have observed that some of the published drawings of Late Preclassic monumental and portable texts are sometimes inaccurate in details that could affect epigraphic study. For this reason, I decided to undertake the primary documentation of the subset of Late Preclassic texts that I think are more amenable to epigraphic study. In the following paragraphs I justify the need for this project, explain its methods, present the results achieved so far, and offer a preliminary discussion of some of the data. I conclude with a suggestion for the expansion of LAPIDA into a long-term project for documenting early inscriptions from throughout Mesoamerica. The goals of the expanded LAPIDA would be to collect accurate data relevant to understanding the origin and spread of Mesoamerican scripts, and to aid in their decipherment.

A1.1. The Need for LAPIDA. The need for the LAPIDA Project requires explanation, since published drawings for many of the texts relevant to the study of early Mayan writing already exist. For instance, at least two drawings of the Brooklyn

¹⁸⁸ In addition to funding from FAMSI, my LAPIDA Project has also been supported with grants from the Institute for Mesoamerican Studies, the Benevolent Association, and the Graduate Student Organization at the State University of New York at Albany. I have conducted research at the following museums and collections: the Dumbarton Oaks Research Library and Collection, the Yale Art Gallery, the Fidel Tristán Jade Museum in Costa Rica, the National Museum of Costa Rica, the Brooklyn Museum of Art, the Peabody Museum at Harvard, the Princeton Art Museum, and the National Museum of Archaeology and Ethnology in Guatemala City.

Museum of Art jadeite pectoral mask have been published: one in Covarrubias (1957:Figure 94) (**figure A1.1**), and one in Schele and Miller (1986:150-151, Plate 45) (**figure A1.2**). But when both drawings are compared with the photograph in Soustelle (1979:Plates 60 and 61) (**figure A1.3**), it can be appreciated that they lack certain details, which I have included in the final drawing published here for the first time (**figure A1.4**).

Another case is the drawing of the Dumbarton Oaks quartzite pectoral published in Coe (1966:Figure 11). Among the details missing in his drawing is a crucial one for determining the linguistic affiliation of this text. A comparison of Coe's drawing of the glyph at C6a (**figure A1.5a**), and my own drawing of that glyph (**figure A1.5b**) can show this: Coe's drawing is missing an example of T1 **7u** inside T126 **ya**. This phonetic spelling of the preglottalic third person singular ergative/possessive prefix, **7u-ya** for 7uy-, has important implications: only Cholan and Yucatecan innovated an 7uy- allomorph of this prefix in Mayan. Indeed, Tzeltalan and Greater Kanjobalan have y- but not 7uy-; other Mayan languages have r- (Greater Quichean), t- (Greater Mamean), or in- (Huastec). Using the previous drawing, such a narrow discrimination would not be possible.

A1.2. Project Design and Methods. The procedure involves the following six steps: (i) photograph scanning and processing, (ii) enlarged laser printout, (iii) field notes and sketching, (iv) inking of drawing, (v) scanning of drawing, and (vi) publishing of drawing in printed and online media.

First, a photograph of the text is scanned at high resolution, and the image is enhanced (increasing focus or sharpness) as needed (**figure A1.6**). (I have used Adobe Photoshop for the imaging process). Starting out with a black-and-white photograph (i.e., grayscale), if the incised glyphs are dark (e.g., filled in with red or black pigment) and surrounded by a lighter surface (e.g., light green mineral), an enlarged-scale laser printout is produced at this point. However, if the incisions are light (e.g., white pigment) and surrounded by a darker surface (e.g., dark green mineral), the image is first inverted into

its negative, so the incisions become dark and easier to see through tracing paper (**figure A1.7**). If a color photograph is used, it may be useful to scan the photograph in color rather than grayscale; once scanned, it is possible (with Adobe Photoshop) to view the image under different filters: Red, Blue, Green, and RGB (all three). If the incised glyphs are filled in with red pigment, for example, applying the Blue filter may enhance the contrast and make for a more suitable image. Inverting the image to its negative may also improve the contrast, as in the case with grayscale photographs.

Then, an enlarged laser printout is produced. The enlarged printout is taped to a portable drawing board, and tracing paper is taped on top of the printout. Using a pencil, loupes of different magnifications, and ideally one or two separate portable or movable light sources, the inscription is sketched through first-hand examination of the artifact. The sketching is done on the tracing paper that lies on top of the enlarged printout of the photograph of the text (**figure A1.8**). The light sources allow one to enhance the light-shadow contrasts of incisions, when applied at oblique angles with respect to the inscribed surface, and from different directions (i.e., raking light assist). Gloves (cotton or disposable latex) should be used when handling the object.

Later, an enlarged photocopy or laser printout of the field drawing of the text is produced (**figure A1.9**). Tracing paper is taped on top of the photocopy or printout, and the drawing is traced with ink using a light table. The images produced (photographic and line art) are scanned and ready for on-line publication, or photocopied for dissemination by other means (**figure A1.10**).

A1.3. Results Achieved to Date. Included in this report are final drawings of the following early texts (abbreviations are provided, see Addendum): (1) Dumbarton Oaks jade pectoral (**figure A1.10**, DO pectoral), (2) Dumbarton Oaks jadeite celt (**figure A1.11**, DO celt), (3) Jade Museum jade spoon (**figure A1.12**, JM spoon), (4) Jade Museum jade plaque No. 4444 (**figure A1.13**, INS 4444), (5) Jade Museum jade plaque No. 4443 (**figure A1.14**, INS 4443), (6) Jade Museum jade plaque No. 4442 (**figure**

A1.15, INS 4442), (7) Jade Museum jade plaque No. 4441 (**figure A1.16**, INS 4441), (8) Jade Museum jade plaque No. 4440 (**figure A1.17**, INS 4440), (9) Jade Museum jade plaque No. 2007 (**figure A1.18**, INS 2007), (10) Jade Museum jade plaque No. 2006 (**figure A1.19**, INS 2006), (11) Jade Museum slate disk No. 6528 (**figure A1.20**, INS 6528), (12) Jade Museum jade plaque No. 4563 (**figure A1.21**, INS 4563), (13) La Fortuna slate disk (**figure A1.22**, LF disk), (14) Peabody Museum at Yale jaguar figurine (**figure A1.23**, PMY jaguar), (15) Cenote tubular jade bead (**figure A1.24**, CNT 6125), (16) Cenote tubular jade bead (**figure A1.25**, CNT 22001), (17) the lower glyphic panel of Hauberg Stela (**figures A1.26-A1.29**, HBG stela), (18) the lower glyphic panel of Kaminaljuyu Stela 10 (**figure A1.30**, KJ Stela 10), and (19) Brooklyn Museum of Art jade mask (**figure A1.4**, BMA mask).

For some drawings I have not had the benefit of first-hand observations yet, but I have used published high-resolution photographs to improve upon previously published drawings. The following drawings are thus only preliminary: (20) Hatzcap Ceel jade axe (**figure A1.31**, HTZ axe), (18) Kendal jade axe (**figure A1.32**, KND axe), (19) an unprovenanced jade clamshell (**figure A1.33**, UNP clamshell, K763), (20) the Pomona jade earflare (**figures A1.34a,b**, PMA flare), (21) the British Museum pectoral (**figure A1.35**, BM pectoral), (22) the Cleveland Museum jade plaque (**figure A1.36**, CM plaque), (23) a jade plaque reportedly from Nosara, Nicoya, Costa Rica (**figure A1.37**) published in Stone (1968:figura 9), and (24) an unprovenanced jade plaque reportedly from Costa Rica (**figure A1.38**) published in Stone (1977:68, Figure 78c). My dissertation research focuses on the following four inscribed artifacts: DO pectoral, JM spoon, PMY jaguar, and UNP clamshell. I discuss other texts, but in less detail. Next I discuss the differences between my drawings of these texts and the previously published drawings.

A1.4. Comparison of Drawings. Several drawings of the DO pectoral text (**figure A1.10**) have been published, including: Coe (1966:Figure 11), Schele and Miller

(1986:120), and Mora-Marín (1997:Figure 3). The final drawing presented here differs from these three as follows. The main differences between Coe's (1966) drawing (**figure A1.39**) and **figure A1.10** are in C2, D2, and C6a; between Schele and Miller's (1986) drawing (**figure A1.40**) and **figure A1.10** are in A2b, D1, C2, D2, D3, and C6a; and finally, between Mora-Marín's (1997) drawing (**figure A1.41**) and **figure A1.10** are in A2b, C2, D3, and C6a. Of these, the ones pertaining to A2b, D1, and C6a are the most important ones for epigraphic purposes.

It is worth mentioning that the DO pectoral's original cinnabar pigment has been replaced by a nontoxic counterpart. During the curation process, the cinnabar was removed, and the new pigment applied using pre-curation close-up color slides as guides. After curation, some of the intentional incisions were not refilled, and are therefore no longer visible under normal room lighting without magnification or light manipulation. Also, some of the scratch marks on the pectoral's surface were accidentally filled in.¹⁸⁹ My drawing takes into account only the intentional incisions, most of which are visible in the photograph in Coe (1966:Figure 2), and in the pre-curation color slides on file at Dumbarton Oaks; it should therefore be compared with those sources.

Two different drawings of the JM spoon have been published: a drawing by Dorie Reents-Budet (**figure A1.42**) partially published in Anderson (1993:113), and my earlier drawing (**figure 43**) published in Mora-Marín (1997:Figure 5). **Figure 12**, my more recent drawing, represents an improvement over the previous two.¹⁹⁰ It shows several signs and sign details missing from glyphs A2, A3, A7, and A8 in Reents-Budet's drawing. The main differences with respect to my previous drawing lie in the renderings of A1a and A3d. The glyph at A1a is partly effaced, and so the reconstruction of A1 is

¹⁸⁹ This was evident to me when I examined the pre-curation close-up slides.

¹⁹⁰ It is based on the tracing of a higher resolution scan than the one used for the previous drawing, and as a result, it represents the incisions more faithfully. In fact, what seemed to be nicely rounded corners in the previous drawing can now be seen as somewhat more tentative etchings with a more angular appearance.

uncertain.¹⁹¹

Coe (1973:25) published a photograph and a line drawing of the PMY jaguar text (**figure A1.44**).¹⁹² The photograph does not show the lower four rows of glyphs very clearly. Upon inspection of the artifact, I realized they have experienced more damage than the top four rows, a fact that Coe's drawing indicates through stippling. The drawing I have prepared (**figure A1.23**) differs from Coe's drawing in several details, a few of which are of likely epigraphic significance¹⁹³: the extra details and apparent suffix to glyph B7; and an apparent suffix to glyph A8.

The dimensions, provenance, and current location of the UNP clamshell (K763) are unknown to me.¹⁹⁴ The only previous drawing of the text is by John Montgomery (**figure A1.45**), and is partially published in Anderson (1993:112-113)¹⁹⁵; it is for the most part accurate, but lacks a few small details, two of which are of likely epigraphic significance and which I have filled in my drawing (**figure A1.33**).¹⁹⁶ One is a detail in the form of a nostril in the sign at A6a. This shows the sign at A6a depicts a nose. Also, the sign at A6b consists of two elongated elements; I think they could be fingers, one of which may show a fingernail, but this is unclear.

¹⁹¹ The surface where A1 is incised has suffered much scratching.

¹⁹² The text has been discussed in Coe (1973, 1976), Ayala (1983), Fahsen (1987, 1988, 1999), Hansen (1991), Anderson (1993), Mora-Marín (1996, 1997), and Coe and Kerr (1998). I briefly mention some of their contributions below.

¹⁹³ Some of these details are only important for art historical and paleographic study: the rendering of the tuft of hair in glyph A1; the double outlines on glyphs A4, B4, B5, and B8; the internal element of top sign in glyph B3; the internal elements of glyph B5; the cartouche and internal elements of glyph A7; and a few details in glyph B8.

¹⁹⁴ I am very grateful to Donald Hales for informing me that this artifact corresponds to File No. 763 in Justin Kerr's archives, and also to Justin Kerr, who provided me with the color prints of his photographs that I used to draw the text.

¹⁹⁵ I thank Lloyd Anderson for providing me with a copy of John Montgomery's drawing.

¹⁹⁶ The reeds/hairs projecting from the earflare in glyph A5 and missing in Montgomery's drawing are likely not relevant to epigraphic decipherment, but interesting for they make this earflare element identical to the one in glyph A1.

I intend to discuss the rest of the drawings I am providing here for the first time at a later date.¹⁹⁷

¹⁹⁷ I am very grateful to John Hauberg for allowing me to study the Hauberg Stela, and to Matthew H. Robb for facilitating me the resources at the Princeton Art Museum where the Hauberg Stela was on display earlier this year. My drawing of Kaminaljuyu Stela 10 owes a great deal to the help, support, and resources of Federico Fahsen, Nancy Monterrosa, Carolina Sisniega, the former Director of the National Museum of Guatemala, Lcda. Dora Guerra de González, Juan Antonio Valdés, John Justeson, Ian Graham, and James Porter. I am grateful to Gloria Polizzotti Greis and David S. Stuart at the Peabody Museum at Harvard, to Susan Matheson at the Yale Art Gallery, and to Diane Fane at the Brooklyn Museum of Art for their generous assistance. I am also grateful to Zulay Soto at the Fidel Tristán Jade Museum and to Marlin Calvo at the National Museum of Costa Rica for their assistance.

ADDENDUM 2:

DATING OF THE DUMBARTON OAKS PECTORAL SUBTRADITION

A2.0. Overview. Here I discuss in some detail the calligraphic and stylistic features of signs in the DO subtradition inventory, and what these may say about the relative dating of the texts. First I discuss the style of the artifacts and hieroglyphs, and then I discuss the differences in sign forms and sign components with respect to those of reliably dated Late Preclassic and Classic period texts. I suggest that there are strong similarities between these artifacts and the Izapan sculptural style and range of themes of the Mayan highlands. I conclude the section with a summary of the major correlations and findings, and suggest a possible dating for the artifacts, with the DO pectoral as the earliest (ca. 300-100 B.C.) and the UNP clamshell as the latest (ca. A.D. 1-150).

A2.1. Methods and Assumptions. Because the artifacts of the DO subtradition are all unprovenanced, I assume that stylistic and calligraphic variation is attributable to diachronic change. This is probably only partly correct, but it is a necessary assumption pending future archaeological findings that may allow one to take into account more geographically-informed synchronic variation. The methods I apply are simple comparisons of graphic elements with graphic elements, graphic motifs with graphic motifs, and graphic compositions with graphic compositions. I try to maintain the distinction between text-format writing and pictorial art, given that it is quite possible, judging from Early Classic monuments, that the two may not have coevolved simultaneously, but instead, that some innovations in one medium may not have been immediately adopted in the other medium. For example, the U-shaped element is first replaced by the O-shaped element in iconographic contexts (e.g., in depictions of earflares), and was not adopted in the glyph corresponding to those same entities (e.g., T62 EARFLARE) until perhaps a few centuries later. With this example

notwithstanding, I do make comparisons that cut across the pictorial and textual media whenever they are the only available evidence.

The following comparisons, then, are mainly art historical: I take into account materials and techniques used, as well as motifs and themes represented. They are mostly comparisons made by previous authors, though I contribute a few examples and a few refinements. This is not an exhaustive attempt, however, and much more can be done in the future with the same corpus.

A2.2. The DO Subtradition.

A2.2.1. DO Pectoral. The pectoral is unprovenanced and lacks calendrical data. Coe (1966:6) has asserted that it can only be said “with reasonable confidence that it comes from somewhere in the Yucatán Peninsula, that is, in the northern Maya lowlands,” and later mentioned the site of Quintana Roo as the likely place of provenience (Coe 1976:114). The time of its original manufacture, following Coe (1966:17) and Schele and Miller (1986:107), was probably the Middle Preclassic (1000-400 B.C.) as an Olmec artifact. It was later reworked by a Mayan artisan who incised its text and seated figure. As noted by Fields (1989:112-114), it is very likely that the Mayan artisan was fully aware of the meaning of the Olmec iconography present on the front: the **CROSSED.BANDS** motif on the front of the pectoral on either side of the central were-jaguar face (**figure 6.1**) is used in the Mayan text and pictorial portrait in the back (**figure 6.2**) with a similar form and in the same context (i.e., a royal headdress and headband assemblage) as in Olmec-style art from across Mesoamerica (**figure 6.26**). One of these Olmec-style examples is from the Shook Altar (**figure 6.26c**), a fully Olmec-style monument from the Pacific Coast of Guatemala (Shook and Heizer 1976), and one that very closely matches the basic form of the DO pectoral example.¹⁹⁸ Based on this evidence a date of ca. 400 B.C. is not far-fetched for the Mayan art and text on the back

¹⁹⁸ Though Parsons (1981:260-261) regards the Shook Altar as a “Late Olmec panel,” dating it to ca. 800-500 B.C., I think that it may be slightly later, perhaps from ca. 500-400 B.C.

of the pectoral.¹⁹⁹

Coe (1966:17) estimates that the Mayan reworking took place in the first century B.C. based on similarities between the posture of its seated figure and SEATED glyph (**figures A2.1a,b**) and a seated figure in the Cauac Phase murals at Tikal (**figure A2.1d**) which date to ca. 50-25 B.C. (W. R. Coe 1965:Figure 9). I have pointed out before, however, that a very similar set of details appear in a sign depicting a lower torso and left thigh at E5 on Kaminaljuyu Stela 10 (**figure A2.1c**), which dates to ca. 300-200 B.C. (Mora-Marín 1996). Thus, based on this evidence alone one can posit a conservative range of ca. 300-25 B.C. for the DO pectoral's text.

Schele and Miller (1986:109, 119) place the Mayan work in the period of 100 B.C.-A.D. 100, based on the close resemblance of the earflare assemblage worn by the seated personage with the earflare assemblages of the stucco mask program of Structure 5C-2nd at Cerros, which dates to 50 B.C. (Freidel 1977). Although the comparison with the iconography of Structure 5C-2nd at Cerros is indeed striking, the iconography and the calligraphy of the DO pectoral seem to be closely related to those exhibited by several monuments from Kaminaljuyu dating to ca. 400-100 B.C. The same type of earflare assemblage present on Structure 5C-2nd at Cerros and in the DO pectoral (**figure A2.2a**) is attested on Kaminaljuyu Altars 9 and 10 (**figure A2.2b**), found together in a cache dating to the early Arenal phase or ca. 200-100 B.C. (Valdés and Popenoe de Hatch 1995). Also, as remarked by Coe (1966:13), the headdress worn by the seated personage on the DO pectoral (**figure A2.3a**) is topped by the head of the "Long-Lipped God of

¹⁹⁹ The Olmec motifs present on the front of the pectoral (e.g., the so-called "were-jaguar" face and the CROSSED.BANDS motif) actually continue into the Late Preclassic among the successors of the Olmecs, as on the Epi-Olmec Tres Zapotes Stela C. As mentioned in the discussion of the dating of the other three portable texts, which stylistically belong to the Late Preclassic period, the DO pectoral may not have been Middle Preclassic at all, but Late Preclassic, and if so, the inscribed Mayan text on its reverse may have been roughly contemporaneous with the carved Olmec/Epi-Olmec iconography on its front. In any case, the proposed date for the Mayan text of ca. 300-200 B.C. is not to far removed from the end of the Middle Preclassic period at ca. 400 B.C.

Izapan art” (i.e., the Principal Bird Deity, see below), with three emerging sprouts and three circles, in a fashion that according to Coe makes it “virtually identical with that on the headdress carved on” Kaminaljuyu Stela 11 (**figure A2.3b**), also dated to the Early Arenal phase or ca. 200-100 B.C., a comparison made too by Schele and Miller (1986:119). These comparisons make the artistic and script tradition from Kaminaljuyu of ca. 400-100 B.C., or perhaps a contemporaneous tradition elsewhere in the Mayan highlands or lowlands, seem like a strong candidate for the DO pectoral text. For these reasons, I regard the dating by Schele and Miller (1986) to be somewhat late, and think that a dating of ca. 300-100 B.C. is probably more accurate. Below, and in Chapter VI, I discuss additional calligraphic features of the DO pectoral.

A2.2.2. PMY Jaguar. A dating close to that of the DO pectoral is probable for the PMY jaguar (**figures 6.4-6.5 and 6.42a**). Coe (1973:25) dates the artifact to ca. 300 B.C.-A.D. 1, and argues it is Izapan in style (see Chapter VII for definition of Late Preclassic Izapan Horizon). Support for this identification comes from the very close stylistic correspondence between the PMY jaguar and the full-round Monument 14 (**figure 6.42b**) from El Baul in the Mayan highlands region (Parsons 1986:Figure 138). Parsons (1986:Table 3) regards this monument, which measures 185 cm in height, as contemporaneous with Kaminaljuyu Stela 10 and Stela 11, dated to 400-200 B.C. and 200-100 B.C., respectively.

The iconographic differences between these sculptures are very suggestive of what their common theme might be. The PMY jaguar, as noted by Coe, portrays a half-jaguar, half-man seated figure. The jaguar traits include mainly the head features: nose, snout, mouth, and fangs. Most of the other traits are human: ears, hands, feet, lack of tail, and seated posture. The figurine, though small in size, nevertheless has a monumental look to it that makes it resemble the full-size El Baul Monument 14 even more. Monument 14, though similar stylistically, shows a full jaguar: jaguar ears, eyes, nose, snout, mouth, fangs, and paws. The fact that the photograph only shows the front of the sculpture

prevents one from determining the presence or absence of a tail. Both show a seated figure, however. This fact suggests to me that the PMY jaguar shows a human being in the process of transformation into a jaguar, while Monument 14 from El Baul shows the completion of the process, with only the seated posture suggesting that this jaguar is part human. The PMY jaguar also contains a feature that may not correspond to any trait of a jaguar or human: a horn-like vegetal sprout emerging from its head. It is possible that Monument 14 from El Baul has a similar sprout-like element, but it is not possible to determine so due to the photograph's front view. This feature is important in Chapter VI in determining the possible iconic and semantic motivation of a sign in the text of the PMY jaguar. For now I think the stylistic and thematic similarities between these two sculptures are suggestive of a close temporal, and perhaps even geographic relationship. Below I describe some calligraphic features that also support an early dating for the PMY jaguar text.

A2.2.3. JM Spoon. The JM spoon (**figures 6.6-6.8**) is reportedly from Cerro Negro, a hill site in the province of Guanacaste, in the northwestern region of Costa Rica. The site may date to the Tempisque (500 B.C.-A.D. 300) period, given its location (Guerrero, Solís, Vásquez 1992:102). However, this provenience cannot be confirmed since the piece was looted. If the information is accurate, and the site is indeed from the Tempisque period, it would conform roughly with the stylistic dating of the jade spoon and its inscription: as various authors have remarked, foremost among them Andrews (1986a, 1986b, 1987) and Pohorilenko (1981:309), spoon-shaped objects such as this one are characteristic of Late Preclassic Mesoamerica. They have been attested in substantial numbers in Costa Rica, most of them looted, but they have also been found archaeologically in Late Preclassic contexts at Dzibilchaltun (Maldonado 1999:70-71) and Chaksinkin (Andrews 1986a, 1986b, 1987) in the Mayan area. Moreover, as pointed out to me by John Hoopes (personal communication, 1995), one of the personages on the aforementioned Nakbe Stela 1, dated by Hansen (1991a) to ca. 400 B.C. but possibly later

based on stylistic comparisons with stucco sculptures from Uaxactun's Structure H-Sub-10 dating to the first century B.C. (Valdés 1995:78, 82, Figure 54), is wearing six spoon-shaped jades as belt plaques. It is thus likely that these spoon-shaped jades were imports into the Mayan region from the Gulf Coast of Mexico, from the Pacific Coast of Chiapas and Guatemala, or from Guerrero. In the case of the JM spoon, once acquired by a Mayan elite a scribe or artisan was commissioned to inscribe it.²⁰⁰ Below I discuss the calligraphic traits of the text, and some additional implications for its dating.

A2.2.4. UNP clamshell. The dating of the UNP clamshell (**figures 6.9-6.10**) is uncertain. It is most likely Late Preclassic in age, but here and in Chapter VI I propose a date of ca. A.D. 1-150. One point that can be added is that it already shows some of the basic elements of the Early Classic belt plaque cult, even though it is was not hung vertically but horizontally. The pictorial portrait of a lord on the concave side of the clamshell and the inscribed text on the convex side conform in general to the standard Early Classic format as on the Leyden Plaque (**figure 5.1**). There are some stylistic and iconographic similarities between the pictorial portrait on the UNP clamshell and that of a standing figure on the Late Preclassic Miniature Stela 16 from Kaminaljuyu, measuring 70 cm in height (Parsons 1986:Figure 54).²⁰¹ The overall shape of the figure's belt sash and ankle and wrist bead ornaments seems to be the same. Their posture, however, is rather different, due to differences in the events depicted. In the UNP clamshell the figure is shown in the act of self-coronation, rendered similarly to that shown on Tikal Stela 31 (A.D. 435), which probably postdates the UNP clamshell by several centuries.

²⁰⁰ For these reasons, and because the JM spoon has a Mayan text, it is only natural to suppose that the Mayans may have served as intermediaries between the societies responsible for manufacturing the spoons and the northern Costa Rican societies who acquired them.

²⁰¹ This stela is looted, so its exact provenance within Kaminaljuyu and its stratigraphic context are unknown. Stylistically it falls squarely within the Late Preclassic period, although a narrower determination is not self-evident. While Parsons (1986:121) dates it to ca. 500-200 B.C., I think that the UNP clamshell is probably much later, of Protoclassic age (A.D. 1-150).

The bottom part of the figure's belt sash also resembles its counterpart on the Leyden Plaque, dated to A.D. 320. Based on the sparse evidence presented so far, and most importantly on the calligraphic and paleographic evidence discussed in Chapter VI, I would tentatively date the UNP clamshell to ca. A.D. 1-150.

A2.3. Calligraphic Style. General remarks on the style of some of the signs could be useful for their relative dating. First, unlike other Late Preclassic texts, such as the Kichpanha Bone discussed elsewhere in the dissertation (Chapters I and VII), the glyphs on these four texts are not composed of grotesque faces and baroque details. Instead, they are all quite simplified and stylized. A good example of this is glyph D5 in the DO pectoral (**figure 6.23**), or glyph 37 in **figure 6.16**. It corresponds to Classic T757 **B'AH/b'a**. It only maintains the rough outline of the GOPHER head that T757 depicts: it shows the regularly rectangular top part of the head containing the eye and ear; it shows the jaw as seen in some examples, and it shows a tongue present in some but not all examples of T757. Interestingly, the way the tongue is shown resembles very closely the manner in which the tongue was shown in the JAGUAR glyphs on La Mojarra Stela 1 (**figure 6.32g**), an Epi-Olmec monument dated to A.D. 156. The absence of an outline of the gopher's ear in the D5 example in the DO pectoral can be explained via two artistic factors: first, the generalized elimination of inner details that is clearly evident in the DO example; and second, the fact that the ear of the gopher's head is sometimes rendered almost completely within the outline of the head (**figure 6.32d**), in which case all that is necessary is to invoke the first artistic factor as an explanation for the absence of the ear.

A calligraphic/stylistic correspondence between the DO pectoral and the art of Kaminaljuyu supports this. In this case one can compare glyph A4 in the DO pectoral (**figure A2.4a**), or glyph 54 in **figure 6.17**, with the depiction of a skull on Kaminaljuyu Monument (**figure A2.4b**). The two show the eye with a double-outline eyebrow, an iris inside the eye, prominent teeth, and what appears to be a headband dangle, which is highly stylized in the case of A4 in the DO pectoral.

There is internal evidence within the DO pectoral itself for this stylization tendency. One example is the case of the rectangular earflare assemblage flanked by dots present on glyph D4 (**figure A2.4c**), or glyph 2 in **figure 6.15**.²⁰² This same glyph occurs at A3 in the same text but without the dots (**figure A2.4d**), only the rectangular earflare element. It is also evident in the HTZ axe, a Protoclassic text from Belize, which shows a sign at B6 corresponding to T757 **B'AH/b'a** with the rectangular earflare element and two dots (**figure A2.4i**). That this element is an earflare, a highly stylized earflare, is evident from more elaborate renditions of earflare icons in head glyphs from later texts, such as that on the PMA flare (**figure A2.4j**), which shows the earflare element and the two dots, most likely representing beads tied to the earflare with string or rope. Finally, of significant interest is the fact that just as on the DO pectoral the rectangular earflare ornament may appear without dots (**figures A2.4d,e**), so is the case for various glyphs from KJ 10 (**figures A2.4f-h**). The rendering of this rectangular element in the DO pectoral and KJ 10 is very similar, while both texts differ somewhat in this trait with respect to the counterparts in the later HTZ axe and PMA flare. Based on this evidence, then, it seems that the texts on the DO pectoral and KJ 10 are closer to one another temporally than either one is to the Protoclassic PMA flare text.

The only trait in the DO subtradition that suggests unnecessary elaboration of detail is the double-outlining feature pointed out by Coe (1976) and seen more commonly on the PMY jaguar (e.g., A1, B1, A2, A3, B3, A4, B4, B5, A6, B6, A7, B7, A8, B8), but present to a more limited extent on the DO pectoral (e.g., B4, D3), and maybe once on the UNP clamshell (A4). While altogether absent from the JM spoon, this feature is present on other Late Preclassic texts, such as on five signs (A1a, A3a, A3b, A3c, A4c) in the BMA mask (**figure 6.13**), four signs (A6, B6, A7, B7) in the DO celt (**figure 6.11**), most signs in the Covarrubias subjudice, as well as on some Early Classic texts such as the

²⁰² Anderson (1993:112) has compared this ear ornament assemblage on glyphs A3 and D4 of the DO pectoral with those on some Epi-Olmec glyphs. While the match is undeniable their relevance for this paper is not significant.

Hombre de Tikal statue.²⁰³ The text on the basalt Stela 10 from Kaminaljuyu (**figure A2.5**) serves as a parallel for this simplified carving style, and also shows the convention of double-outlining on at least four signs (F3, H1, H3, H4).

As already mentioned above, most of the signs are rendered with angular rather than rounded lines. This is true as well of the text on KJ 10, and also of the Epi-Olmec script tradition. Several interesting similarities with the text on KJ 10 and the Epi-Olmec script can be observed. First, the forms and components of some of the faces on the DO pectoral resemble very closely those on KJ Stela 10, as at G1: angular lines, and also components like the rectangular element on the back of the head. Other KJ 10 glyphs, such as those at E4, F6, and G8 show a similar rectangular element. The rendering of the lips and noses of the faces of the DO pectoral resemble those on the Epi-Olmec glyphs (cf., Anderson 1993:111). The rectangular element on D4 on the DO pectoral has two circles (one on top, one below), which together with the rectangular element resemble the “smoke-stacks” of the Epi-Olmec faces. None of the other texts discussed here –the JM spoon, the PMY jaguar, and the UNP clamshell– shows these features in the glyphic faces, suggesting that the DO pectoral is indeed closer in time to the KJ Stela 10 text (ca. 300–200 B.C.) than any of the other three texts. It also suggests that there was a closer Mayan-Epi-Olmec scribal interaction around that time than subsequently.

In fact, the DO pectoral has fewer rounded lines than any of the other three texts, with the JM spoon being second in angularity of lines, the PMY jaguar third, and the UNP clamshell fourth, with significant rounding of lines. If one examines examples of texts on similar media, namely the inscribed Early Classic jade belt plaques discussed in Chapter IV, one can see that these are generally done with rounded lines, and by A.D.

²⁰³ This double-outlining feature may have been analogous to the thick outlines exhibited by painted glyphs on pottery and murals; in other words, it may have been a calligraphic convention that originated in painted media and was subsequently transposed to incised media by means of double-outlining. Perhaps the difficulty of carving and incising on jadeite, quartzite, basalt, and other hard minerals and rocks (e.g., basalt in the case of the PMY jaguar and KJ 10) led to this somewhat simplified calligraphy.

120 with the DO celt (**figure 6.11**) and A.D. 320 with the Leyden Plaque (**figure 5.1**) little angularity of lines remains. These lines of evidence would place these four texts in the following relative chronology: DO pectoral > JM spoon > PMY jaguar > UNP clamshell. And furthermore, they suggest that the DO pectoral predates the carving and inscribing of the DO celt by a significant amount of time. Schele and Miller (1986:83) first proposed the dedicatory date for the DO celt to be A.D. 120, based on the phrases referring to the completion of **8/9-BAKTUN** and the more readily identifiable **4-KATUN**. They favor the reading of **8-BAKTUN** over that of **9-BAKTUN** because the style is much too early to be a 9.4.0.0.0 text (i.e., A.D. 514).

I agree with their dating. Moreover, comparing the form of T518 on the DO celt at A6c with its equivalent on the UNP clamshell at A7b allows one to observe a closer correspondence between these two examples than with the likely equivalents on the JM spoon at A3c and A8c, the DO pectoral at B5b, and the PMY jaguar at B4c, although the last one is incomplete. An Early Classic jade plaque (INS 4442) which may date to ca. A.D. 270 and may be from a site near Tikal (see Chapter V), shows a similar form of T518 (**figure 6.24h**), with the main difference being the doubled tip of the T518 inside element. In other words, the general form of T518 seen on the UNP clamshell was in use for several centuries. However, since the earliest datable occurrence, and also the most similar one, is that on the DO celt at A.D. 120, one can propose that the UNP clamshell dates to ca. A.D. 1-150.

A2.4. Paleography. Justeson (1978), Justeson and Mathews (1990), Grube (1991, 1994), and Lacadena (1996) have discussed trends in the development and diffusion of innovated sign forms and sign compounds. The most systematic study by far is that by Lacadena (1996), and for that reason I base the following comparisons on his approach and proposals.

Lacadena (1996b:191) distinguishes between the prototypical form of a sign and its various graphic designs. He defines seven categories of graphic change, whose

terminology I modify slightly here: (1) modification of the form of graphic elements that make up a sign; (2) blending of graphic elements; (3) relocation of graphic elements; (4) rotation of graphic elements; (5) introduction of new graphic elements; (6) loss or omission of old graphic elements; and (7) substitution of graphic elements. Lacadena (1996:209) has also contributed with a systematic description of the process of graphic change as a result of a chain reaction, which consists of the regularized change of a graphic element in all the signs that contain such element. This type of change may take place over a broad temporal range that can be counted in terms of a few generations of scribes.

In some cases, however, as I show below, some examples of what Lacadena identifies as graphic innovations or changes can be better explained as revivals of archaic sign forms. Also, in some cases the earliest texts are suggestive of the early coevolution of equivalent formal and stylistic features, with subsequent replacement of one by the other, and of an early preference for sign stylization rather than elaboration. The last point is important because it has been assumed by epigraphers that early sign forms are generally more elaborate than later ones; however, such remarks have often distinguished Early Classic from Late Classic sign forms. As already mentioned above, Late Preclassic sign forms are much more stylized than either Early Classic or Late Classic sign forms, suggesting a veritable revolution in the artistic value of the script during the Late Preclassic-Early Classic transition. These are some of the contributions that the study of the earliest Mayan texts can offer epigraphers and art historians.

Lacadena (1996) has made several observations of interest here regarding the developmental trends of Mayan signs in general, and of specific signs which are attested in the texts under discussion here. These graphic elements and signs include: the U-shaped element, T1, T23, T116, T126, T168, T518, T526, T528, T548, T586, T757, and others. The U-shaped element can serve as a good point of departure, given its presence in a large number of different signs, and also, its recognizable mutations through time.

This widespread use in Mayan signs, as Lacadena (1996b) has described, led to a chain shift of graphic change involving signs with the U-shaped element during the Early-to-Late Classic transition. The change in question involved the substitution of the original U-shaped element inside a cartouche (**figure A2.6b**) for a circular element (**figure A2.6C**), and later still, the addition of two small circles on the outside of the cartouche (**figure A2.6d**). The earliest Mayan texts can provide additional data relevant to the historical development of these elements.

For example, the DO celt (**figure 6.11**) shows two examples of the U-element inside a hand sign and inside the likely predecessor of T168 7AJAW (cf. B4 and A7) already by A.D. 120. Several other undated and unprovenanced early texts also exhibit this element: the BMA pectoral, CNT 6125, the JM spoon, the PMY jaguar, the UNP clamshell, and the PMA flare, among others. The BMA pectoral (A2a) (**figure 6.13**) and the CNT 6125 (A2, A4c) (**figure 6.12**) both exhibit the use of the U-element. The JM spoon has two examples of the U-element, but both in the same sign (A3a, A8a); no other signs in this text are signs where the U-element is likely to occur in later texts. The UNP clamshell has one instance of the U-element, in the same sign as the occurrence in the JM spoon (cf. A7a). The DO pectoral has one iconographic occurrence of the U-element, but no glyphic ones.

The Protoclassic PMA flare (**figure 6.14**) shows four glyphic (i.e. rather than iconic) occurrences of the U-element: two in the SUN.GOD glyph (A2/B1), in T840 (D1a), and in T710 (D1c). Interestingly, the lower glyphic panel of KJ 10 may contain a case of the U-element at F3 (**figure A2.5**), in the same glyph as D1c of the PMA flare. If one takes into account the iconography of the glyphs in the PMA flare, one can witness the free variation relationship between the U-element and the O-element inside the (T62) earflare worn by the two instances of the SUN.GOD glyph; this variation may have started in the iconography, and subsequently intruded into the glyphic domain, although only further study can determine this.

Lastly, the PMY jaguar (**figure 6.5**) contains one clear example at A2. Moreover, the PMY jaguar text may constitute a missing link in the history of the glyphic use of the U-element. It exhibits both the U-element typical of Mayan signs at A2 and the double-stub element more common in Epi-Olmec signs but also present in some Mayan signs as late as the fifth century A.D. (**figure A2.6a**) at A3, A7, and B8. More importantly, I think that the PMY jaguar examples show that the double-stub element is simply a form of the U-element: the double-stub element is identical to the U-element if the second one is placed along the outline of a glyph, rather than centered inside a cartouche. This text could be of significance, for this reason, in the study of the relationship between the Epi-Olmec and Mayan scripts. It suggests a time and place when and where both forms were in free variation in the Mayan script, before the U-element took over, and it also suggests that the double-stub element is a context-specific simplification of the U-element.

Interestingly, as already remarked, the DO pectoral text contains no examples of the U-shaped element, even in signs where the element is typically present in later texts (cf., A5 and B5). This fact alone may constitute evidence for a very early dating of the DO pectoral text, preceding all texts with infixed U-elements. The KJ 10 text, which dates to ca. 400-200 B.C. and which I have argued may be closely related to the DO pectoral text in calligraphic style, also lacks U-elements with one possible exception. Thus, this general absence of U-shaped elements in glyphs appears to be an early practice, in spite of the fact that there are U-elements in the pictorial scenes in both the DO pectoral (**figure 6.2**) and KJ 10 (**figure 1.23a**).

Other sign attributes may be relevant for the purposes of relative dating of texts. C6a in the DO pectoral, No. 141 in **figure 6.20**, corresponds to Classic T1 7u. It occurs in the same general form as in the DO pectoral in the BMA mask at A1a (**figure 6.13**) and in the CNT 6125 (**figure 6.12**) at A3a and A4a. To my knowledge these are the only such examples of this design for T1, characterized by containing a bracket with two circles. This design in fact matches exactly the pictorial representations of the iconic

referent of T1, as seen in **figure 6.49**. Lacadena (1996b) proposes a design of T1 containing the bracket and two dots but a triangular element inserted in between those dots as the earliest design for T1 (**figure A2.7a**). I think the examples from the DO pectoral, the BMA mask, and the CNT 6125 constitute the earliest design of T1 **7u**, and may very well serve as a diagnostic for very early texts, given that only very few Early Classic examples contain instances without this triangular element. Unfortunately, it is not possible to date the design of sign No. 141 with accuracy. It is possible that an example may occur in the DO celt at A7a, but it is partly eroded and cannot be confirmed as such; if it is a case of No. 141, one can argue that it was in use at least up until A.D. 120. However, based on various traits, the BMA mask and CNT 6125 texts may very well postdate the DO celt text, and it is therefore possible that the design in No. 141 may very well have lasted until ca. A.D. 200 or sometime later.

A1b and C6b in the DO pectoral, No. 146 in **figure 6.20**, correspond to Classic T126 **ya**. The form of No. 146 agrees with that of the first design of T126 proposed by Lacadena (1996b:108) (**figure A2.7a**). It may also be attested in the Protoclassic HTZ axe at A5a, in a possible spelling of **ya-(7)AK'(AB'/B'AL)**. A possible example may have been present at B4a in the DO celt, but is now mostly eroded.

The form of T168 **7AJAW** 'lord, ruler' present in the DO subtradition and in other Late Preclassic texts differs from that proposed by Lacadena (1996b:108) to be the earliest design of this glyph (**figure A2.7a**). It is attested in the DO pectoral at B5a (No. 155), in the JM spoon at A3b and A8b, in the PMY jaguar at B4b, and in the UNP clamshell at A7a (No. 156). It is also present in the DO celt at A7a, and possibly too at A4b, though the second possible occurrence is mostly eroded. In any case, the design of No. 155 may be a predecessor to that of No. 156; the former shows what could be an early form of T130 **wa**, while the latter shows T517 and part of T130 **wa**. T517.130 can be argued to postdate plain T130 because the earliest Classic form according to Lacadena still shows T517, although by this time T130 is no longer present and T584 has taken its

place. Indeed, Lacadena proposes T517.584 as the earliest attested design for T168; its first datable occurrence, he argues, can be dated to A.D. 406 at Tikal, but it only lasted until ca. A.D. 416, when it was replaced by a version using T687.584. Lacadena does not have sufficient evidence to suggest when the earliest example of T517.584 may date from, and simply supposes it is the earliest form. If the Hauberg Stela really dates to the time of its recorded date, A.D. 197, which I think it does, then it would contain the earliest example of T517.584. Also, INS , an inscribed jade plaque mentioned in Chapter V and which may contain a date placing it at A.D. 270 (**figure 6.24h**), contains a likely example of T517.584 too. Assuming the HBG stela was dedicated in A.D. 197, then it can be argued that the form T517.130 for T168 attested in the DO celt which dates to A.D. 120 was discontinued between A.D. 120 and A.D. 197. I thus posit a late limit of ca. A.D. 150 for the T517.130 design. This suggests that the DO subtradition texts all fall within the Late Preclassic period. This is even the case for the UNP clamshell text, which I argue below is the latest of the four. Interestingly, the story does not end there. As shown by Lacadena (1996b:270), a fifth design of T168 came into use between A.D. 736-849: T687.130. In other words, this design used T130 **wa**, just like the designs attested in the DO subtradition and the DO celt. This design was innovated and popularized by Dos Pilas in the southern lowlands, but was subsequently discontinued. Rather than being an innovation, this design may have been a partial revival (see Chapter VII), given the possibility that the Dos Pilas scribes may have retained a knowledge of the earliest design of T168 by means of inscribed heirlooms or copies of earlier manuscripts. This revival was only partial because the T687 **po** component innovated sometime around A.D. 416 was retained in the Dos Pilas form of T168, rather than being replaced by T517, the U-shaped element, which appears in the earliest examples.

A4 in the UNP Clamshell, No. 82 in **figure 6.18**, corresponds to Classic T17 **yi**. It matches the first design for T17 proposed by Lacadena (1996b) (**figure A2.7b**), but it contains an element not present, to my knowledge, in any Classic form of T17: a string-

like extension from the tip of the hook-shaped element on the right side of the sign.

B2b and C1b in the DO pectoral, as well as A1b in the PMY jaguar, and A4b in the JM spoon, No. 154 in **figure 6.20**, may represent examples of Classic T116 **ni**. The DO pectoral's examples are especially close to the first Classic designs of T116 proposed by Lacadena (1996b) (**figure A2.7c**). This design is characterized by a series of parallel but wavy lines oriented toward the right side of the sign and roughly converging on the bottom right corner. The DO pectoral shows the lines to be parallel but not convergent, and so does the JM spoon example, while the PMY jaguar example shows the lines as parallel and wavy. In addition, the KND clamshell at A3b shows the same general form as that in the JM spoon. This form is characterized also by a separate curling line. Interestingly, this design of T116 persists into the Early Classic period in some texts, such as Yaxchilan Lintel 49 (A.D. 537) at C8, where it appears as a possible complement to **K'IN**, which in Classic texts was always T116 **ni**. Lacadena points out that T116 underwent two major changes during its history. The first change took place near "the end of the first half of Cycle 9" (1996b:196) or ca. A.D. 700, and involved a 180 degree rotation of the sign (**figure A2.7c**, last example). Originally, the point of convergence of the various lines that make up T116 was oriented towards the right, but it changed to a left-facing orientation. All the T116 **ni** signs in the Late Preclassic corpus described here show the original right-facing orientation (**figure A2.7c**, first and third examples). The second change involved the addition of dots or circles to the bottom of the sign (**figure A2.7c**, third example). Lacadena (1996b:127) points out that the earliest example of T116 with these dots is attested at Copan in A.D. 652, followed by Palenque in A.D. 682. Thus, the dots seem to first come into usage on monumental texts at about the same time as the 180 degree rotation of T116. Interestingly, the example of T116 in the PMY jaguar shows these dots. This cannot mean, however, that the PMY jaguar dates to the Late Classic period. I think, instead, that it means that the dotted T116 existed prior to its attestation at Copan in A.D. 652, but that until then it had been used in different media or

in different contexts. It is even possible that the dotted T116 was an archaic variant of T116 that was brought back at Copan. There is additional support for such a revival of old sign forms or designs, as already noted for the case of Dos Pilas.

Lacadena argues that the codical form of T74 **ma** (**figure A7.2d**, last two examples) was already in use during Late Classic times at Chichen Itza, by ca. A.D. 879, but not earlier. However, glyph A1a in the KND clamshell, which is Protoclassic in age as determined by its archaeological context (Gann 1918; Schele and Miller 1986), has what may be the earliest example of this design of T74 **ma** at A1a (**figure 1.30b**). I think it is likely that this design was the short-hand version of T74, and that it may have existed in a manuscript tradition for a long time before it became used on monuments at Chichen Itza in the Late Classic.

C4a in the DO pectoral, No. 147 in **figure 6.20**, corresponds to Classic T124 **tzi/TZIK**. Its form agrees with that of the earliest form of T124 discussed by Lacadena (1996b), and seen as the first two examples in **figure A2.7e**. This correspondence supports an early date for the DO pectoral. However, this design of T124, as pointed out by Lacadena (1996b:255) may have persisted from ca. 236 B.C. (the earliest possible date of Abaj Takalik Stela 2) to A.D. 393 with very little modification. It was not until A.D. 320 that the original form first changed significantly (but the the original design was still used), as seen in the third example in **figure A2.7e**. This may also help in dating the text on CNT 6125, which also contains an example of the first design of T124.

Another sign of interest for the DO subtradition is what looks like a predecessor of T139/178 **la** (**figures A2.6e**). It is found at A1b/A7c/A8d in the JM spoon (**figure 6.8**) and at A4b in the PMY jaguar (**figure 6.5**). An **IV** reading is supported by its substitution in the JM spoon for an early T24 **li** similar to one attested on the Leyden plaque. I think the **IV** sign in these early texts is in fact an early form of T139/178 **la**, only shown in a stylized fashion. In **figure 6.46** I provide a brief explanation of how the sign in these early texts may have developed into T139. Also, the parallel diagonal lines present in

T178 **la** are present in the version of T139 **la** on the DO celt at B4c (**figure 6.11**), suggesting that early on T139 and T178 were the same sign but later diverged into two forms, with each new form retaining the old reading.

Another case of interest is the Postclassic codical design of T23 **na**. Lacadena (1996b:385) places the earliest antecedents of this design at A.D. 726 (**figure A2.8b**). Yet, as already explained in Chapter VII, the design in question is in fact an archaism that dates to the Late Preclassic period Izapan down-turning ground motif, perhaps as early as 300 B.C.

The BMA mask and the PM bead are interesting because they also bear very similar examples of T757 GOPHER, with the phonetic reading **b'a**, and the logographic reading **B'AH** for **b'ah* 'gopher' and **B'AH/B'A** **b'ah* ~ **b'ä* 'self/image, head, top'. This calligraphic closeness is important: the curling cheek element of the gopher head in these two renditions is to my knowledge unique to these two texts. This fact, and the similar rendering of T1 **7u**, together, suggest that the two texts are relatively close in time and space. The T757 occurs in four of the Late Preclassic texts under discussion here: the DO pectoral, the BMA mask, HTZ axe, and the PM bead. The example in the DO pectoral is very interesting because it shows a calligraphic relationship with the Epi-Olmec tradition. Indeed, the manner in which the tongue of the gopher is shown resembles more the treatment of this element in Epi-Olmec glyphs than in Classic Mayan glyphs.

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Table 1.1.¹

Formal Traits	MA	I	LI	M	Z	X	CMH	PMS	DATE ²
Glyph Block Sequences	+	+	+	+	+	+			
Top-Bottom Direction	+	+	+	+	+	+			
Signs									
Main	+	+	+	+	+	+	+		
Affixes	-	+	+	+	-	-	-		
Cartouches	+,-	+,-	+	+	+	+	+		
Bar-and-Dot Numerals									
Form 1	+ (LP)								
Form 1A				+ (LC)					
Form 2		+	+	+					
	+	+							LP
			+	+	+				EC
				+		+	+		LC
									EP

¹ The presentation of data has been simplified somewhat with respect to Prem's (1973) more detailed tables. MA = Monte Alban, I = Intermediate, LI = Late Isthmian, M = Mayan, Z = Zapotec, X = Xochicalco, CMH = Central Mexican Horizon, and PMS = Postclassic Manuscript Style.

² LP = Late Preclassic, EC = Early Classic, LC = Late Classic, and EP = Early Postclassic.

Table 1.2.

DATE	TRAIT	TEXT
8.12.14.8.15 (A.D. 292)	Numeral+Cycle.Sign ISIG with Month.Patron	Tikal Stela 29
8.14.3.1.12 (A.D. 320)	Month.Sign G5 of Supplementary Series	Leyden Plate
8.16.0.0.0 (A.D. 357)	Lunar Glyphs	Uaxactun Stela 18
8.18.0.0.0 (A.D. 406)	Period Ending Date Numeral+Month.Sign	Balakbal Stela 5
End of fifth century	“Comb” signs on ISIG	
9.3.0.0.0 (A.D. 501)	Distance numbers	
End of sixth century	Fully evolved system	

Table 1.3.

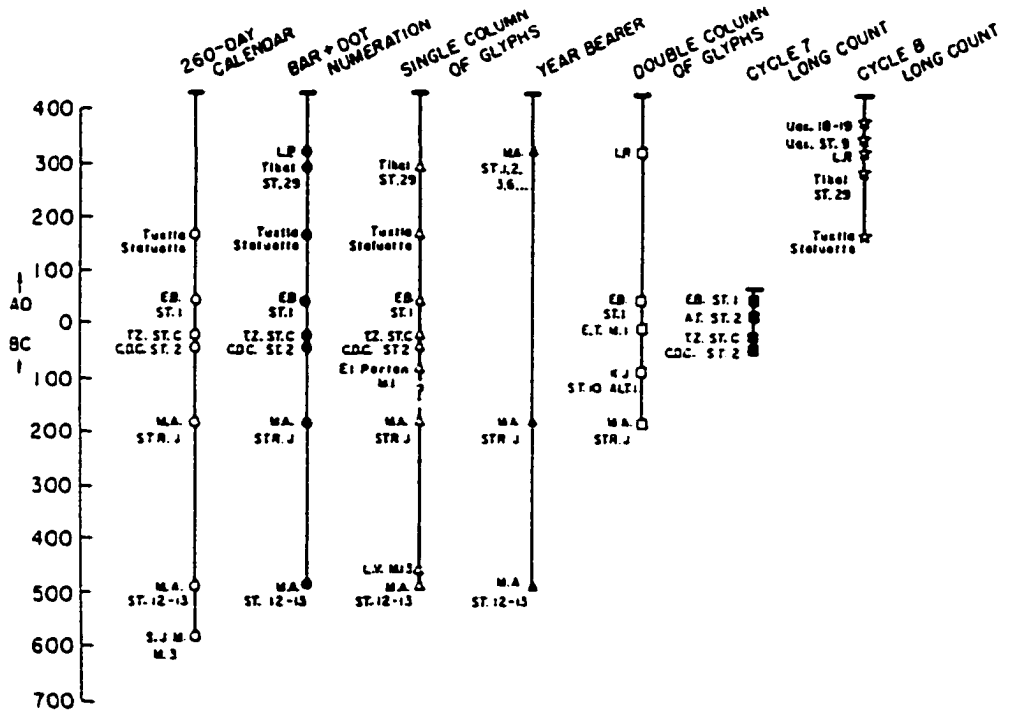


Figure 14 Chart indicating the initial and subsequent appearances of the 260-day calendar, bar + dot numeration, single column of glyphs, year bearer, double column of glyphs, Cycle 7 Long Count, and Cycle 8 Long Count in Mesoamerica. The abbreviations used in the chart are as follows: S.J.M. = San José Mogote; M.A. = Monte Albán; L.V. = La Venta; K.J. = Kaminaljuyú; C.D.C. = Chiapa de Corzo; T.Z. = Tres Zapotes; A.T. = Abaj Takalik; E.T. = El Trapiche; E.B. = El Baul; Uax. = Uaxactún; L.P. = Leyden Plaque; M. = Monument; ST. = Stela(e); STR. = Structure; and Alt. = Altar.

Table 1.4.

FORMAL FEATURES OF THE SOUTHEASTERN MesoAMERICAN SCRIBE GROUP

	LOWLAND MAYAN	GREATER IZAPAN			WEST IZAPHEAN			INSUFFICIENT DATA					
		Kaminaljuyu Lakabik	Abaj Baul	El	Cerro de las Mesas	Tuxtla Statuette	Tres Zapotec	La Venta	Chiapa de Corzo	Izapa	M Punta	H Tuxtute	
1. Double-column format	+	+		+	-	-	-						+
2. Degree of variation in vertical size of glyph block	L	L/M	L	L	M	H	H	M					L
3. Pedestal below some day signs	+	+	+	-	-	-?	-						+
4. Enlarged calendrical statements	+	+	-	+	-	-	-						
5. Long count dates	+		+	+	+	+	+		+				
6. Long count initial in its column(s)	+		+	-	-	-	-						
7. Day coefficient to left in long count	+		+	-	-	+	+		+				
INDEX OF AGREEMENT WITH LOWLAND MAYAN		94%	80%	71%	21%	11%	28%						

Note: Two subgroups emerge from this comparison: an Izapan/Mayan subgroup, characterized by most of the items mentioned, and a West Izaphean subgroup that appears to be more conservative. HB index represents an index of agreement in the Izapan/Mayan sphere of script monuments. I accept for La Venta, although for which there are data on less than half of the formal features listed, agree with the Izapan/Mayan subgroup; Chiapa de Corzo agrees equally fully with the West Izaphean subgroup. The index of agreement with Lowland Mayan is calculated as a proportion in which the denominator is the number of features concerning which there is information for the script being compared, and the numerator is the number of features showing agreement (with M being assigned agreement of .5 in the L/low/M/medium/H/high values for feature 2).

Table 1.5.

MONUMENT	SITE	DATE	SCRIPT
Monument 13	La Venta	600-500 B.C.	Olmec
Monument 1	El Porton	400 B.C.	Mayan(?)
Sherd	Chiapa de Corzo	300 B.C.	Epi-Olmec
Stela 27	Izapa	300-50 B.C.	?
Chicanel Sherd	El Mirador	200-100 B.C.	Mayan
Stela 2	El Mirador	A.D. 1-100	Mayan
Stela 2	Abaj Takalik	236-19 B.C.	Mayan
Stela 10	Kaminaljuyu	300-100 B.C.	Mayan(?)
Misc. Mon. 60	Izapa	200 B.C.	?
Altar 1	El Polol	176 B.C.-A.D. 35(?)	Mayan
Stela 2	Chiapa de Corzo	36 B.C.	Epi-Olmec
Stela C	Tres Zapotes	32 B.C.	Epi-Olmec
Altar 1	Kaminaljuyu	Late Preclassic	Mayan(?)
Monument 65	Kaminaljuyu	Late Preclassic	Mayan(?)
Stela 1	El Baul	A.D. 36	Mayan(?)
Bas-relief	Loltun Cave	Protoclassic	Mayan
DO Celt	Unprovenanced	A.D. 120	Mayan
Stela 5	Abaj Takalik	A.D. 126	Mayan
Stela 1	La Mojarra	A.D. 157	Epi-Olmec
Tuxtla Statuette	Veracruz	A.D. 162	Epi-Olmec
Hauberg Stela	Unprovenanced	A.D. 197	Mayan
Stela 21	Kaminaljuyu	A.D. 200	Mayan(?)
Monument 1	Chalchuapa	A.D. 200	Mayan(?)
Carving	San Diego Cliff	Protoclassic	Mayan
Altar 2	Kaminaljuyu	A.D. 200	Mayan(?)
Monument 11	Abaj Takalik	Protoclassic	Mayan
Bone stylus	Kichpanha	A.D. 150	Mayan
Diorite axe	Hatzcap Ceel	Protoclassic	Mayan

Table 1.5. (Continued)

MONUMENT	SITE	DATE	SCRIPT
Jade axe	Kendal	Protoclassic	Mayan
Jade bivalve effigy	Kendal	Protoclassic	Mayan
Stela	Alvarado	Late Preclassic(?)	Epi-Olmec(?)
DO Pectoral	Unprovenanced	Late Preclassic	Mayan
PMY jaguar	Unprovenanced	Late Preclassic	Mayan
Jade Clamshell	Unprovenanced	Late Preclassic	Mayan
Jade Spoon	Unprovenanced	Late Preclassic	Mayan
Brooklyn Museum	Unprovenanced	Late Preclassic	Mayan

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Table 2.1.

BRANCH	LANGUAGES	BRANCH	LANGUAGES
Wastekan	Wastek	Western Mayan	Ch'ol
	Chicomuseltek		Chontal/Yokot'an
Yukatekan	Yukatek		Ch'olti'
	Lakantun		Ch'orti'
	Itzaj		Tzotzil
	Mopan		Tzeltal
			Tojolob'al
Eastern Mayan			Chuj
			Q'anjob'al
			Akatek
	Teko ³	Jakaltek	
	Mam	Mocho ⁴	
	Awakatek	Muchu ⁵	
	Ixil		
	Uspantek		
	Sipakapa		
	Sakapulteko		
	K'iche'		
	Tz'utujil		
	Kaqchikel		
Poqomam			
Poqomchi'			
Q'eqchi'			

³ Also known as Tektiteko.

⁴ Also known as Motosintlek.

⁵ Also known as Tusantek.

Table 2.2.

ORDER OF SEPARATION	MAJOR SUBGROUPS, TIME DEPTH, REGION	LANGUAGE LEFT MAYAN HOMELAND
I	Wastekan (9c) - Lowland Wastek Chicomuseltek	Late proto-Mayan
II	Yukatekan (10c) - Lowland Yukatek Lakandon Itzaj Mopan	Central Mayan
III	Eastern Mayan (34c) - Highland	Western Mayan
IIIA	Greater Mamean (26c) Mamean Proper (15c) Teko = Tektiteko Mam Ixilan (14c) Awakatek Ixil	
IIIB	Greater K'iche'an (26c) Uspantek K'iche'an Proper (10c) Sipakapa Sakapulteko K'iche' Tz'utujil Kaqchikel	

Table 2.2. (Continued)

ORDER OF SEPARATION	MAJOR SUBGROUPS, TIME DEPTH, REGION	LANGUAGE LEFT MAYAN HOMELAND
IIC	Poqom (10c)	
	Poqomam	
	Poqomchi'	
IIID	Q'eqchi'	
IV	Western Mayan (30c)	
IVA	Ch'olan-Tzeltalan (19c)	
	Ch'olan (14c) - Lowland	
	Western Ch'olan	
	Ch'ol	
	Chontal/Yokot'an	
	Eastern Ch'olan	
	Ch'olti'	
	Ch'orti'	
	Tzeltalan (14c) - Highland	
	Tzotzil	
	Tzeltal	
IVB	Greater Kanjobalan (21c)	
	Chujean (16c)	
	Tojolob'al - Lowland	
	Chuj - Highland	
	Q'anjob'alan Proper (15c)	
	Q'anjob'al Complex (7c) - Highland	
	Q'anjob'al	
	Akatek	
	Jakaltek	
	Kotoke Complex (6c)	
	Motosintlek = Mocho' - Highland	
	Tusantek = Muchu' - Lowland	

Table 2.3.⁶

pM				
FORMS	Yu	CT	C	Tz
*CVC	CVC	CVC	CVC	CVC
*CVV ₁ C	CVV ₁ C	CVV ₁ C	CVC	CVC
*CVhC	CVhC	CVhC	CVhC	CVhC
*CVjC	CVhC	CVhC	CVhC	CVhC
*CV7C	CV7C	CVV ₁ C	CVC	CVC
*CV7V ₁ C	CV7C	CV7V ₁ C	CV7V ₁ C	CV7V ₁ C
SOUNDS	Yu	CT	C	Tz
*q, *q'	k, k'	k, k'	k, k'	k, k'
*j	j	j	j	j
*h	h	h	h (>j)	h
*N	n	n	n	n
*r	y	y	y	y
*VV ₁	VV ₁	VV ₁	VV ₁	VV ₁
*b'	b'/p'	b'/p'	b'/p'	b'/p'
*tz	tz, ch	tz	tz	tz
*t, *ty	t > t, ch	t	t	t
*ty'	?	ch'	ch'	ch'
*k, *k'	k, k'	ch, ch'	ch, ch'	ch, ch'
	some ch, ch'	k, k'	k, k'	k, k'

⁶ Based on Kaufman and Norman (1984).

Table 2.4.

pCT FORM	(pre-C >) pC
*VV	V
*aa	a
*a	ä
*...hCC	...∅CC (e.g. *k'äk'=nahb' 'sea' from *k'ahk 'fire')
*CVCVC+VC	CVCC+VC (i.e. *7eb't-el 'work' from *7eb'et 'messenger' + *-VI 'abstractive')
*j	j
*h	j in initial and final positions
*h	h in medial position before a vowel or a consonant
*e(e)	e
*o(o)	o
some *ee	ii > i (e.g. pC *chij 'deer', *wich' 'wing')
some *oo	uu > u (e.g. pC *tun 'stone', *7uk' 'to weep')

Table 2.5.⁷

FEATURE	CH'OL	CHONTAL	CH'OLTI'	CH'ORTI'
1s				
ERG	k-	ka/k-	in-/inw-	ni-/niw-/inw-
ABS	-on	-on	-en	-en
2p				
ERG	la7-	a... la	i-	i-
ABS	-etla	-etla	-ox	-ox
passive of DTV	-nt	-nt	-na	-na
thematic suff.	no	no	yes	yes
-es causatives	no	no	yes	yes
inchoative suff.	-7an	?	-l	-r
plain/CMP of RTV	-V ₁	-i	-V ₁	-i/-e
preposition	ti	ta/ti	ti	ta

⁷ Based on Kaufman (1989) and Kaufman and Norman (1984).

Table 2.6.

- (1) *t > ch before i and e (e.g. Yukatek chi7 'to bite' < pM *ti7) and at the end of polysyllabic words (e.g. Yukatek 7otoch 'house' < pM *atyooty) and some monosyllables (e.g. Yukatek pàach 'back' < pM *paaty);
- (2) *k' > ch' before i and e (the conditions varied somewhat);
- (3) *k(ˀ) > ch(ˀ) before /a/ and following "a reflex of [proto-Mayan] *q(ˀ) which must still have been phonetically distinct from *k and *kˀ";
- (4) *V7C > ˀV7C (high tone); *VhC and *VxC change to ˀVVC (high tone); and VVC > ˀVVC (low tone); and
- (5) *aCi > *iCi and *iCa > aCa (vowel harmony) in which cases the first vowel is short and the consonant not h (e.g. proto-Mayan *tiqaw > pre-Yukatekan *chikaw > proto-Yukatekan *chakaw Ôhot,' also illustrating the chronological precedence of sound change (1) over the vowel harmony change in sound change (5)).

Table 2.7.

ITEM	GLOSS	ITEM	GLOSS
*ahk'ot	'dance'	*pak'	'toad'
*(a)mo:ch	'toad'	*pehts'	'deadfall'
*b'ahk'	'400'	*pech	'to make tortillas'
*b'et	'debt'	*pik	'to dig'
*b'u(h)b'	'tadpole'	*pik	'8000'
*b'ulukʸ	'eleven'	*puj	'soaproot'
*chaʔam	'fang'	*p'ehl	'generic classifier'
*chik	'visible'	*p'ol	'to abound'
*chuʔ	'woman's breast'	*p'u:s	'hunchback'
*chuk	'to seize'	*sa:k'	'itchy'
*e:k'	'star'	*xukul	'purslane'
*ehk' ~ *ihk'	'black'	*tak'	'to attach'
*kanan	'to take care of'	*tahn	'chest'
*kohk	'deaf'	*til	'to untie'
*ko(h)m	'short'	*t'el	'on its side'
*kuket	'torso'	*t'os	'to divide'
*kyta:m	'peccary'	*t'uch	'perched'
*k'a:y	'song'	*t'uhl	'rabbit'
*laj	'completely'	*jalal	'reed'
*lap'	'sticky'	*jaw	'face up'
*lih-li	'to shake'	*joch	'to pour out'
*luhb'	'to get tired'	*jok'	'to dip out'
*lup	'to dip out'	*yal	'to throw'
*mak'	'to eat soft things'	*yahl	'to fall'
*nap'	'to attach'	*ya:n	'different'

Table 2.8.

PHONOLOGICAL

INNOVATION

b', p' contrast, from proto-Mayan *b'

GRAMMATICAL

INNOVATIONS

-t 'transitivizer'

-s 'causative'

Table 2.9.

ITEM	GLOSS	ITEM	GLOSS
*b'es	'stutterer'	*pan	'toucan'
*b'o7laay	'spotted'	*peht-el	'all'
*b'uuts'	'smoke'	*piik	'skirt'
*b'u7ul	'beans'	*pihx	'knee'
*tsik	'to count'	*puts'	'to flee'
*tsol	'to line up'	*pu(k)sik'al	'heart'
*ts'am	'to get wet'	*pujuy	'roadrunner'
*chol	'milpa'	*p'el	'to saw, to slice'
*ehm	'to descend'	*p'en	'to fornicate'
*hets'	'to calm'	*p'ich	'to stuff'
*huuj	'iguana'	*pix	'to wake up'
*kaaj	'to begin'	*p'ul	'piled up'
*kil	'to thunder'	*sa7	'dough, atole'
*kox	'pheasant'	*saku7n	'older sibling'
*k'aab'aa	'name'	*sahm-i	'earlier today'
*k'ak'=nahb'	'sea'	*sik'ab'	'cane'
*k'aht-i	'to ask'	*sop'	'frothy'
*k'uhts	'tobacco'	*sus	'to scrape'
*lahchi -	'to scratch,	*xab'	'to mix'
*la7ch	to scrape'	*xan-b'aal	'face up'
*loch	'twisted'	*xuhch'	'thief'
*lom	'to perforate'	*taa7	'excrement'
*loot	'twin(s), pair'	*tep'	'to wrap'
*lu7	'catfish'	*top'	'to break'
*luch	'to attach'	*tuch'	'to point'
*mo7	'macaw'	*tuhl	'numeral classifier (people, animals)'
*much'	'piled up'	*tum	'to point'
*mux	'to mash'	*t'aan	'word'
*na7	'mother'	*t'el	'crest, comb'
*nats'	'neighbor'	*uhs-ta	'to blow'
*nak'	'belly'	*ja7an	'man'sbrother-in-law'
*na7at	'wisdom'		

Table 2.9.

ITEM	GLOSS	ITEM	GLOSS
*nuk ~ *nok	'upside down'	*jab'	'to open'
*num	'to pass'	*jats'	'to hit'
*nut'	'to join'	*jay	'to spread out'
*pak'	'to plant'	*job'	'to knock down'
*yuum	'owner'	*loch'	'to grasp'

Table 2.10.

pC SOURCE	YUKATEKAN FORM	EXPECTED pYu FORM
*chan 'sky'	<lahun chan> 'ten sky (god)'	*ká7n 'sky' (< pM *ka7ŋ)
*chan 'snake'	<chicchan>, <chijchan> '5th day name'	*kâan 'snake' (< pM *kaan)
*chahuk	cháak, <chac> 'rain god'	*kawak '19th day name' (< pM *kahoq)
*tun 'stone'	tûun- 'stone, year (ending)'	*tòon 'stone' (< pM *tuuŋ)
*kuts 'turkey'	kùuts 'turkey'	*kòots (< pM *kuuts)
*b'uluch 'eleven'	<buluchcan> 'bálsamo o liquidámbar'	Yukatek b'uluk 'eleven' (GLM)

Table 2.11.

CH'OLAN ITEM	K'ICHE'AN
chak-al 'red' + te7 'tree'	chakalte7 'cedar' (expected: kaq-al-che7) k'oste7 'madre de cacao' (not: che7) k'ante7 'tree the roots of which make a yellow dye' (not: che7)
k'an 'yellow' + ti7 'mouth'	k'anti7 'poisonous snake' (expected: q'an + chi7)
nah 'house'	sohot jaxna 'a tree used to make houses' (expected: xah for 'house')
chan 'snake'	kelchan 'a viper' sak'alchan 'a kind of worm' (expected: kaan)

Table 2.12

GRAMMATICAL FEATURE	DONOR LANGUAGE
split ergativity	Yukatekan (< Poqom?)
*-Vl 'incompletive of intransitive'	
verbal nouns	
*-na suffix to affect verbs	
*-tal 'incompletive of positionals'	Yukatekan
*-l-aj(-i) 'completive of positionals'	Yukatekan
*yuwa:l for the progressive aspect	
vowel levelling of singular absolutive	
agreement markers (e.g., *-iin > -en,	
*-at > *-ech)	Yukatekan

Table 2.13.

FEATURE	SOURCE	DESCRIBED BY:
Restructuring of Second Person Plural	Poqom	Martha Macri (1987)^a
Split of pM *b' into /b'/ and /p'/	Poqom	Martha Macri (1987)
Split ergativity	Poqom(?) Yukatekan(?)	Kaufman (1989)

^a As pointed out by Kaufman (1989:92) .

Table 2.14.

(G)LM	MZ
*kuket 'trunk of body' [GLM]	Chiapas Zoque kuhk- 'in the middle of', kukpak 'chest'
*kakaw 'cacao' [GLM]	*kakawa 'cacao' [pMZ]
*ko(h)m 'short' [GLM]	*kono 'short' [pMZ]
*uma7 'dumb, stammerer' [CT]	*7uuma 'dumb' [pMZ]
*pata(h) 'guava' [GLM]	Sierra Popoluca pataN
*weet, *wa7x 'fox' [GLM]	*wetu 'fox' [pZo], *waax 'fox' [pMi]
*ja7an 'man's brother-in-law' [LM]	*hʌʌ 'man's brother-in-law' [pMi]
*chi7ik 'coatimundi' [Yu, Ch'olti']	*tziku 'coatimundi' [pMZ]
*sahp 'fathom' [Yu, EC]	*sah 'wing' [pZo], xahpak 'fathom' [Sayula Popoluca]
*mach 'to take, grasp' [Yu]	*matz 'to grasp' [pMi]
xaak-t 'to examine' [Mopan]	xaak 'to guard' [Totontepec Mixe]
su7uk 'grass' [Mopan]	*so7k 'grass' [pZo] (but cf. Totonac saqat)
sum 'rope' [Mopan]	*tzum 'to tie' [pMi]
tutz 'corozo' [Mopan]	*tuuhtz 'palm' [Sayula Popoluca]
make7ch 'escarabajo, camaleón' [Yukatek]	mage7ch 'cockroach' [Sayula Popoluca]
mok 'gata de mar' [Yukatek]	múguy 'topote' [Sayula Popoluca]
-pach 'male iguana' [Yukatek]	*patzi 'lizard' [pMZ], *pach 'lizard' [pMi]
sok 'snail' [Yukatek]	*soki 'snail' [pZo]; cf. Papantla Totonac xoqe 'concha de mar'
tzuk 'mouse' [Ch'ol, Chontal]	*tuuk 'mouse' [pMZ]
me7 'deer' [Ch'ol]	*mʌ7a 'deer' [pZo]
koya7 'tomato' [Ch'ol]	koya 'tomato' [Chiapas Zoque]

Table 2.15.

TERM	LANGUAGE	SOURCE
		Western Mayan
'market, patio'	Xincan kii7wi Huave kiap 'patio'	pT ch'iwich 'market' < WM *k'iwik 'market, patio'
'to buy'	Xincan kunu	pC *chon < WM *koo•
'witch (brujo)'	Jumaytepeque Xinka wIIyI	pT *way-ijel 'nagual' < WM *7aaj way 'witch'
		Ch'olan-Tzeltalan
'avocado'	Jicaque sit	pCT *tzitz
'coatimundi'	Jicaque tsotson, tz'ol Honduran Lenca xuxumi. Paya tus 'anteater'	Ch'ol tz'utz'ub', cf. pT *tz'u(h)tz'um-chab'
'opossum'	Jicaque hutz	pC *7uch < pCT *7uch < pM *huhty'
'wall'	Xinka pak'-ah, pak(')i	pC *pahk' < pCT *pahk(')
		Ch'olan
'atol'	Jicaque hul Salvadoran Lencan ola	pC *7ul < pM *7uul
'cotton'	Jicaque tInIm	pC *tinäm < pM *t'iiN(am)
'hummingbird'	Jicaque t'unun	pC *tz'unun < pM *tz'uunu7n
'pozol'	Jicaque matz' Paya musu Matagalpa muso Tarascan mas-	pC *matz' < pM *maatz'
'tapir'	Jicaque til	pC *tihl < pM *tijl
'crab'	Jicaque hop	Ch'orti' hopop < pC *hop- 'to move like crabs, ants, bugs'
'bee, honey'	Honduran Lenca xapu	pC *chab' < pM *kaab'

Table 2.15. (Continued)

TERM	LANGUAGE	SOURCE
'bean'	Xinca xin'ak, Jicaque tz ^h in(-ak) Honduran Lencan sinak Misquito sinak Sumu sinak	Tzeltalan pT' *chenek' < pM' *kiinaq'

Table 2.16.

LANGUAGE	BWO ⁹
Huastec	VOA/VAO
Chicomuceltec	
Teco	fVAO
Mam	fVAO
Aguacatec	fVAO
Ixil	VOA/(f)VAO
Sacapultec	VOA
Quiche	VOA/VAO
Tzutujil	VOA/VAO
Cakchiquel	VOA/VAO
Pocomam	VOA
Pocomchi	VOA
Kekchi	VOA
Yucatec	VOA
Lacandon	VOA
Itzaj	VOA
Mopan	VOA
Chol	VOA
Chontal	VOA
Cholti	VOA?
Chorti	VOA ¹⁰
Tzotzil	VOA
Tzeltal	VOA
Tojolobal	VOA
Chuj	VOA/(f)VAO
Kanjolal	fVAO
Acatec	VOA/VAO
Jacaltepec	fVAO

⁹ BWO stands for 'basic word order'. The letter "f" stands for 'fixed (word order)'.

¹⁰ I briefly discuss the basis for the VOA analysis of Ch'orti' in the paper.

Table 2.17.

STAGE	OVERT ASPECT	COVERT ASPECT
pM	*ASP+ABS+VI-ST	*VI-ST+ABS
pCT	*ASP+ABS+VI-ST	*VI-ST+ABS
pT	*ASP+ABS+VI	*VI-ST-ABS
pYu	*ASP+VI-CMP-ABS	*VI-CMP-ABS
	*ASP+ERG-VI-INC	*ERG-VI-INC
pC	*ASP+VI-CMP-ABS	*VI-CMP-ABS
	*ASP+ERG-VI-INC	*ERG-VI-INC

Table 2.18.

STAGE	OVERT ASPECT	COVERT ASPECT
pM	*ASP+ABS+ERG-VT-ST	*ERG-VT-ST+ABS
pCT	*ASP+ABS+ERG-VT-ST	*ERG-VT-ST+ABS
pT	*ASP+ABS+ERG-VT	*ERG-VT-ST+ABS
pYu	*ASP+ERG-VT-ST+ABS	*ERG-VT-ST+ABS
pC	*ASP+ERG-VT-ST+ABS	*ERG-VT-ST+ABS

Table 2.19.

STAGE	PRED N/A	PRED STATIVE
pM	*PRED+ABS	*STAT+ABS
pCT	*PRED-ABS	*STAT-ABS
pT	*PRED-ABS	*STAT-ABS
pYu	*PRED-ABS	*STAT-ABS
pC	*PRED-ABS	*STAT-ABS

Table 2.20.

	vtR	vtD	vi
incompletive participle	-o-al	-al	-e-al
plain status	[-o(w)]	[-V]	[-i-k ~ -i-h]
imperative status	-a(w)	-Vnh(*)	-e-Vn
dependent status	-a-7	-Vnh(*)	-oq
perfect status	-o-7m	-7m	-i-naq
perfect participle	act: -o-ej(*)	-ej(*)	
	pass: -b'il	-b'il	-e-7m
agent noun	-oom	-oom	-oom
absolute antipassive	-o-an	-an	
agentive antipassive	-ow(*)	##	
reflexive	-a-ox	-ox	
agentless mediopassive	-h-	-aj	
bounded passive	-o-t	-t	
unbounded passive	-a-(a)b'	-(a)b'?	
causative	-i-sa		
stative	-V ₁ l ~ -a7n		

Table 2.21.

	vtR	vtD	viR
incompletive status	-ik	-ik	-Vl -Ø (antipassives)
completive status	-aj	-aj	-i -aj (antipassives)
imperative status	-e	-Ø	-en
dependent status	-e7	-Ø	-ak
perfect participle	act: -m-aj pass: -a7n		-a7n
passive	-b'	-a-b'	
passive gerund	-b'il		
absolute/incorporating			
antipassive	-n - -Ø ¹¹	-n - -Ø	
mediopassive (agentless)	-H ¹²		
causative	-(e)s ¹³		
stative?	-V ₁ ¹⁴		

¹¹ The - form is used in the incompletive status. Also, the vowel of root transitive verbs lengthens.

¹² Kaufman (1989:Part C, 16) explains that this marker is used only with root transitives.

¹³ Kaufman (1989:Part C, 30) argues this form constitutes a change from proto-Mayan *-i-sa.

¹⁴ Kaufman (1989:Part C, 24, 30) argues that *-a7n 'allomorph of stative', still retained in proto-Western Mayan times, was lost in Ch'olan-Tzeltalan.

Table 2.22.

	vtR	vtD	viR
incompletive participle	?	?	-e-l
plain status	[-a] ¹⁵	-Ø	[-ih]
imperative status	-a	-Vn	-een
dependent status	-e7	-Vn	-oq
perfect participle	act: -ooj	-ej	-eem
	pass: -b'il	-b'il	-em
agent noun	-oom	-oom	-oom
(frozen)			
absolute antipassive	-oon	-an	
alternate antipassive	-aw(-an)	-w-an	
ØintransitivizerØ		-aj ¹⁶	
mediopassive	-h-	##	
(agentless)			
passive	-o-t	-t	
causative	-es ¹⁷		
stative	-V1 ¹⁸		

¹⁵ Kaufman (1989:Part C, 23, 30) argues that the *w* from proto-Mayan *[-o(w)] was eliminated from both the plain and imperative status markers in this stage, but that it was still retained in proto-Western Mayan as *[-a(w)].

¹⁶ Kaufman (1989:Part C, 30) argues this morpheme descends from proto-Mayan *-aj 'mediopassive of derived transitives' with a changed function ('intransitivizer') in Ch'olan-Tzeltalan.

¹⁷ Kaufman (1989:Part C, 30) argues this form constitutes a change from proto-Mayan *-i-sa.

¹⁸ Kaufman (1989:Part C, 24, 30) argues that *-a7n 'allomorph of stative', still retained in proto-Western Mayan times, was lost in Ch'olan-Tzeltalan.

Table 2.23.

	vtR	vtD	viR
incompletive participle	?	?	-e-l
completive status ¹⁹	-V ₁ ~ -i ²⁰	-∅	-i
imperative status	-V ₁	:-n	-en
dependent status	-e7	:-n	-ik
incompletive status	-e7	:-n	-e-l
perfect status	act: -?	-?	-em
	pass: -b'il	-b'il	-em
agent noun	-om	-om	-om?
(frozen)			
absolute antipassive	-on (frozen)		
ØintransitivizerØ		-aj	
passive ₁	-h-	-n-t (WC)	
		-n-a(h) (EC)	
passive ₂		-l	
causative	-es(ä)		
stative	-V ₁ l		

¹⁹ Kaufman (1989:Part C, 35) explains that the plain status was renamed 'completive' status.

²⁰ Kaufman (1989:Part C, 36) explains that *-V₁ - *-i may have been in complementary distribution, with *-i perhaps occurring phrase-finally, and *-V₁ perhaps occurring phrase-medially.

Table 2.24.

	vtR	vtD	vi
incompletive participle			-el
plain status	-∅	-∅	-∅
imperative status	-ä	-ä	-an
dependent status	-∅	-∅	-uk
perfect status	act: -oj	-ej	-em
	pass: -b'il	-b'il	-em
agent noun	-oom	-oom	-oom
absolute antipassive	-aw-an -w(an)		
agentive antipassive	-on (Tzo only)		
mediopassive (agentless)	-h-	##	
passive	-ot	-ot	
passive ₂	-ey (Tzo:Zi)		
	= frozen intransitivizer -V ₁ y (Tze)		
causative	-es		
stative	-V ₁ l		

Table 2.25.

(1)	LpM: Starting Template		
	VI:	[PROGR+ABS(S) (tya)	[VI-NOM:GER]]
	VT:	[PROGR+ABS(A) (tya)	[ERG(O)-VT-PASS-NOM:POSS]]
(2)	PoqA: Reanalysis of Passive-as-Active through Active Nominalization		
	VI:	[PROGR+ABS(S)	[VI-NOM:GER]]
	VT:	[PROGR+ABS(O)	[ERG(A)-VT-ACT:NOM:POSS]]
(3)	PoqB: Reanalysis of Intransitive-as-Active through analogy with VT		
	VI:	[PROGR	[ERG(S)-VI-ACT:NOM:POSS]]
	VT:	[PROGR+ABS(O)	[ERG(A)-VT-ACT:NOM:POSS]]
(4)	YuB: Adoption of Poqoman A-B Reanalyses Previous/Subsequent Rearrangement of ABS to poststem position		
	VI:	[PROGR	[ERG(S)-VI-ACT:NOM:POSS]]
	VT:	[PROGR	[ERG(A)-VT-ACT:NOM-ABS(O)]]
(5)	YuC: Reanalysis of Nominalizers as INC Status Markers Extension of Applicability from PROGR to All INC aspects		
	VI:	PROGR/INC	ERG(S)-VI-INC
	VT:	PROGR/INC	ERG(A)-VT-INC-ABS(O)
(6)	Ch'A: Adoption of Yukatekan patterns (B>)C except for VT nominalization Former (Finite) Dependent Status Marker Becomes INC Status of VT		
	VI:	PROGR/INC	ERG(S)-VI-INC
	VT:	PROGR/INC	ERG(A)-VT-(DEP>)INC-ABS(O)

Table 2.26.²¹

LANGUAGE	ABSOLUTIVES		INCORPORATIVES		AGENTIVES	
	RTV	DTV	RTV	DTV	RTV	DTV
GM						
Mam	-n	-n	-n	-n	-n	
Awakatek	-oon	-Vn	?	-oon	-Vn	
Ixil	-on	-n	none?	-on	-n	
GK'						
K'iche'	-(V)n	-n	-(V)w	-n	-ow	-(V)n
Tz'utujil	-oon	-Vn	-o	-n	-ow	-Vn
Kaqchikel	-on	-n			-(o/u)n	-n
	-Vn	-n	-o/-u	-on	-o/-u	-n
Poqomchi'	-w	-Vn	?	?	-w	-Vn
Poqomam	-w	-in	?	?	-w	-in
Uspantek	-o:-n	:-n	?	?	-Vw	-n
Q'eqchi'	-o	-(a)n	-o		-o	-(a)n
T						
Tzotzil	-wan		?	?	-on	
Tzeltal	-awan/- (V)wej		?	?		
C						
Ch'olti'	?	?	?	?	-an	
Ch'orti'	-on/-o	-(w)an	?	?		

²¹ The data for Mam comes from England (1983); for Awakatek from Dayley (1981); for Ixil from Kaufman (1989) and Dayley (1981); for Q'eqchi' from Kaufman (1989), for Uspantek from Kaufman (1989), for K'iche' from Mondloch (1981) and Kaufman (1989), for Kaqchikel and Uspantek from Kaufman (1989) and (García Matzar and Rodríguez Guaján 1997), for Tz'utujil from Dayley (1981, 1985), for Poqomchi' from Kaufman (1989), for Poqomam from Kaufman (1989), for Tzotzil from Aissen (1999), Dayley (1981), and Kaufman (1989); for Tzeltal from Kaufman (1971, 1989) and Dayley (1981); for Ch'olti' comes from Moran (1695); for Ch'orti' from Fought (1982) and Pérez Martínez (1994); for Chontal from Knowles (1984) and Quizar and Knowles-Berry (1994); for Ch'ol from Kaufman (1989); for Jakaltek comes from Craig (1978, 1979), Datz (1980), Dayley (1981), and Zavala (1992); for Q'anjob'al and Akatek from Zavala (1997); for Yukatekan from Bricker (1986), Dayley (1981), and Kaufman (1989); and for Wastek from Kaufman (1989) and Dayley (1981).

Table 2.26. (Continued)

LANGUAGE	ABSOLUTIVES		INCORPORATIVES		AGENTIVES	
	RTV	DTV	RTV	DTV	RTV	DTV
Chontal	-n		?	?		
Ch'ol	-on		?	?		
GQ'						
Jakaltek	-w(-a)	-w(-i)	-ni			
			-o7			
Q'anjob'al	-w(-an)(-i)		-w(-an)(-i)		-on/-en	
	-w(-a)		-o			
Akatek	-w(-i)		-w		-on	
	-w(-a)		-o7			
Chuj	-waj		-w		-an	
Tojolob'al	-wan/-wun		?	?	-wan	
Yu						
Yukatek	-n/-Ø		-n/-Ø		?	
Itzaj	-n/-Ø		-n/-Ø		?	
Mopan	-n/-Ø					
Lakantun	-n/-Ø					
Wa						
Wastek ^z	-l - om					
	-n 'mediopassive'					

^z Kaufman (1989:Part D, 166, 169) points out that the absolutive antipassive in Wastek is -l - -om, and that Wastek lacks an agentive antipassive, having instead an active transitive construction marked with -b that allows the agent NP to be fronted.

Table 2.27.

LANGUAGE	ABSOLUTIVES		INCORPORATIVES		AGENTIVES	
	RTV	DTV	RTV	DTV	RTV	DTV
GM						
Mam	-n	-n	-n	-n	-n	
Awakatek	-oon	-Vn	?	-oon	-Vn	
Ixil	-on	-n	none?	-on	-n	
GK						
K'iche'	-(V)n	-n		-n		-(V)n
Tz'utujil	-oon	-Vn	-o	-n		-Vn
Kaqchikel	-on	-n			-(o/u)n	-n
	-Vn	-n	-o/-u	-on	-o/-u	-n
Poqomchi'		-Vn	?	?		-Vn
Poqomam		-in	?	?		-in
Uspantek	-o:n	:n	?	?		-n
Q'eqchi'	-o	-(a)n	-o		-o	-(a)n
T						
Tzotzil	-wan		?	?	-on	
Tzeltal	-awan		?	?		
C						
Ch'olti'					-an	
Ch'orti'	-on/-o	-(w)an				
Chontal	-n					
Ch'ol	-on					
GQ						
Jakaltek			-ni			
Q'anjob'al	-w(-an)(-i)		-w(-an)(-i)		-on/-en	
Akatek					-on	
Chuj					-an	
Tojolob'al	-w-an/-w-un		?	?	-wan	
Yu						

Table 2.27. (Continued)

LANGUAGE	ABSOLUTIVES		INCORPORATIVES		AGENTIVES	
	RTV	DTV	RTV	DTV	RTV	DTV
Yukatek	-n/-Ø		-n/-Ø		?	
Itzaj	-n/-Ø		-n/-Ø		?	
Mopan	-n/-Ø					
Lakantun	-n/-Ø					
Wa						
Wastek			-n 'mediopassive'			

Table 2.28.

LANGUAGE	ABSOLUTIVES		INCORPORATIVES		AGENTIVES	
	RTV	DTV	RTV	DTV	RTV	DTV
GK'						
K'iche'			-(V)w		-ow	
Tz'utujil			-o		-ow	
Kaqchikel			-o/-u		-o/-u	
Poqomchi'	-w				-w	
Poqomam	-w				-w	
Uspantek					-Vw	
Q'eqchi'	-o		-o		-o	
Tz						
Tzotzil	-wan					
Tzeltal	-awan/-(V)wej					
C						
Ch'olti'						
Ch'orti'	-on	-(w)an				
Chontal						
Ch'ol						
GQ'						
Jakaltek	-w(-a)	-w(-i)				
			-o7			
Q'anjob'al	-w(-an)(-i)		-w(-an)(-i)			
	-w(-a)					
Akatek	-w(-i)		-w			
	-w(-a)		-o7			
Chuj	-waj		-w			
Tojolob'al	-wan/-wun		?	?	-wan	

Table 2.29.

AUTHOR	ABSOLUTE	AGENTIVE	INCORPORATIVE	
Dayley (1981)	*-(V)w	*-(V)n	*-(V)w	
Smith-Stark (1978)				
Kaufman (1989)	*-o-an	*-o-w ~ *-a-w	*-o-an	RTV
	*-an	*-w	*-an	DTV

Table 2.30.

AUTHOR	ABSOLUTE	AGENTIVE	INCORPOR.	STAGE
Dayley (1981)	A > S	A fronted	A > S	pM
	(Craig (1979))	O > OBL/Ø	O > S	O >
	INCORP			
Kaufman (1989)	A > S	A > S - O > S (NH)	A > S	LpM, CM
	O > OBL/Ø	O unchanged	O > INCORP	
Smith-Stark (1978)	A > S	A > S	A > S	pM
	O > OBL/Ø	O unchanged	O > INCORP	

Table 2.31.

STAGE	AG. AP. (K1989)	ABS. AP. (K1989)	PLUS	MINUS
pM		*-o-an ~ *-an	Wa, Yu, EM, C	GQ', T
	??	—	—	
LpM		*-o-an ~ *-an	EM, Yu	WM
	*-o-w ~ *-a-w ~ *-w		GK', Toj	GM, CT, Q'C, Chu
EM		*-o-an ~ *-an	GM, GK'	Poq, Q'eq'
	*-ow		GK'	GM
WM		*-o-an ~ *-an	C	T, GQ'
	(*-a-w ~ *-w 'alt. apass.')		Toj	CT, Q'C, Chu

Table 2.32.

TAM CATEGORY	ASPECT	STATUS	STAGE
completive/punctual	-	plain	pM
incompletive/habitual	*ti/a - *ka	plain	CM
potential/future	*ti/a - *ka	dependent	CM
	*qah	dependent	pM
optative	-	dependent	LpM
imperative	-	imperative	LpM
perfect	-	perfect	pM
progressive	-	nominalized	LpM

Table 2.33.

	C	CT	CT	Yu	CM	pM
ASPECT						
habitual						wa
habitual				k - t	ti/a	
					- ka	
progressive	(i)wāl					
progressive				taHn		tah=na ²³
plain status		ta				
progressive			ta			
already	a					
		(i)x	(i)x			
future	x					
future-optative				ka7h		qaH
future					la	
ENCLITICS						
already	+ix		+ix			
already						+ik
still	+to					+to(j) ²⁴
the very same	+äch					

²³ Kaufman (1989:Part C, 3) considers this marker to be Late proto-Mayan.

²⁴ Kaufman (1989:Part C, 3) considers this enclitic to be Late proto-Mayan.

Table 2.34.

PRECONSONANTAL

	C	CT	CT	Yu	pM
1s	n-	n-	n-	in-	nu-
2s	a-	a-	aa-	a-	aa-
3s	u-	s-	u-	u-	u-
1p	kä-	j- ~ k-	ka-	k(a)-	qa-
2p	i-	a-...+ex a-...+ox	ii-	a-...-e7x	ee-
3p	u-...+ob'	s-...+ik	u-...+eb'	u-...+o7b'	ki-

PREVOCALIC

	C	T	CT	Yu	pM
1s	nw-	nw-	nw-	(in)w-	w-
2s	aw-	aw-	aaw-	aw-	aaw-
3s	(u)y-	y-	y-	(u)y-	r-
1p	k-	k-	k-	k-	q-
2p	iw-	aw-...+ex aw-...+ox	iiw-	aw-...-e7x	eer-
3p	(u)y-...ob'	y-...+ik	y-...+eb'(u)y-...+o7b'	k-	

Table 2.35.

	C	T	CT	Yu	pM
1s	-en	in	in	-en	iin
2s	-et	at	at	-ech	at
3s	-Ø	-	-	-Ø	-
1p	-on	on	on	-o7n	o7nh
2p	-ix	ex ~ ox	ex	+e7x	ex
3p	-ob'	+ik	+eb'	+o7b'	eb'

Table 2.36.

TYPE	FORM	MEANING
n1	POSS-Noun-Ø	alienable
n2	Noun-ABSOLUTE (possessed as n1)	generic(?)
n3	POSS-CV:C, POSS-CVCV:C, POSS-CV:CV:C	
n4	POSS-Noun-il/al/Vl	alienable, personal, intimate
n5	POSS-Noun-e(:)/V(:)l	inalienable, abstractive
n6	(POSS-)Noun-il/al	associative
n7	POSS-[Noun=Noun]	
n8	(POSS-)Noun(POSSD)=Noun(POSSR)	part:whole
n9	(3sPOSS-)Noun=Noun, (3sPOSS-)Noun + POSS-Noun	part:whole
n10	V/A=Noun, V/A + POSS-Noun	agentives
n11	POSS-Noun + POSS-Noun	collocations
n12	Always possessed	kinterms
n13	Suppletive pairs	food, house
n14	Never possessed	natural forces

Table 2.37.

	Wa	Yu	GM	GK'	GQ'	GTz	pM >	LpM >	CM >	EM	WM
n2a			-b'aj	-aaaj	-e					•-(b')aaaj	
n2b			(-j)	(-eej)							
n2c			(-j)	(-iiij)							
n2d											
n2e											
n2f											
n2g											
n2h											
n3a		V:C	V:C	V:C	V:C	V:C		•CV:C			
n3b		V:CVC	V:CV:C	V:CV:C	V:CV:C			•V:CV:C			
n3c											
n4a	-il	-il		-iil	-iil	-il	•-iil				•-iil
n4b	-al	-al		-aal	-aal	-al	•-aal				•-aal
n4c				-eel	-eel	-el			•-eel		
n4d				-ul	-ul	-ul			•-ul		
n4e											
n5a	-al		-al	-aal	-al	-al	•-aal				
n5b		-e(e)l	-eel	-eel	-eel	-el		•-eel	•-eel	•-eel	•-eel
n5c			-iil	-iil							
n5d											
n6a		-il				-il		•-il			
n6b	-al	-al				-al	•-al				

Table 2.38.

	Wa	Yu	GM	GK'	GQ'	G'z	pM	LpM	CM	WM	EM
n1	x	x	x	x	x	x	x				
n2	x		x	x	x	?	x				
n3	x	x	x	x		x	x				
n4	x	x	x	x	x	x	x				
n5	x	x	x	x	x	x	x				
n6		x				x		x			
n7		x	x	x				x			
n8		x	x	x		x		x			
n9		x	x	x				x			
n10		x	x	x				x			
n11			x	x							x
n12	x	x	x	x	x	x	x				
n13	x			x		x	x				
n14	x	x	x	x	x	x	x				

Table 2.39.

	pM
1s	ha7-iin
2s	ha7-at
3s	ha7
1p	ha7-o7N
2p	ha7-ex
3p	ha7-eb'

Table 2.40.

	CH'OL ²⁵	C. CHONTAL ²⁶	CHONTAL ²⁷	CH'OLTI'	CH'ORTI ²⁸
1s	jo-n-on	<nadzon>	ka-nde käne no7on ²⁹	<natz-en>	ne7en
2s	ja-t-et	?	7a-nde 7ane	<natz-et>	ne7et
3s	jin-i	<hain>	7u-nde 7une hin-i ³¹ hinda ³³	<haine> ³⁰ <ne> <e> ³²	ja7ax
1pi	jo-n-on la	?	ka-nde-la no7on-la ³⁴	<natz-on>	no7on
1px	jo-n-on l(oj)-on	?	ka-nde-t'ok-op'		
2p	ja-t-et la	?	7a-nde-la	<natz-ox>	no7ox
3p	jin-ob'	<hainob>	7u-nde-lop'	<natz-ob>	ja7(a)x-op'

²⁵ Bricker (1986:25) shows 1s as ho-on, 1pi as ho-on-la, 1px as ho-on-lohon, 2s as hatYet, 2p as hatYet-la, and 3p as hino7.

²⁶ These data are taken from Bricker (1986:25).

²⁷ Bricker (1986:25) shows initial glottal stops and no morpheme breaks, while Kaufman (1989:Part D, 76) does not show initial glottal stops and does show the morphemic break up of the pronouns.

²⁸ Bricker (1986:25) shows CV₁7V₁C as the shape of these pronouns; Kaufman (1989:Part D, 76) shows them as CV7C.

²⁹ This datum is from Schumann (1978:97).

³⁰ This datum is based on Moran' (1695:4) vocabulary section.

³¹ This datum is from Knowles (1984:166-167, 208) and Schumann (1978:97).

³² This datum is based on Moran's (1695:4) vocabulary section.

³³ The form hinda means 'this one', while hini - une mean 'that one' according to Schumann (1978:97).

³⁴ This datum is from Schumann (1978:97).

Table 2.41.

	C. Yukatek ³⁵	M. Yukatek ³⁶	Itzaj ³⁷	Lakantun ³⁸	Mopan
1s	<t-en>	t-èen - t-en	t-en	t-en	in-n-en
2s	<t-ech>	t-èech - t-ech	t-ech	t-ech	in-ch-ech
3s	<lay>	le(-)ti7 - ti7	lay(-)ti7 la(-)ti7	le7ek	
1pd	<t-oon>	t-ó7on - t[ó(7)o]n	t-o7on	t-o7on	in-n-o7on
1pi	?	t-ó7on-é7ex	t-o7on-e7ex	t-on-ceex	?
1px	?	?		t-en-o7	
2p	<t-ex>	t-é7ex - t[é(7)e]x	t-e7ex	t-e7ex	in-ch-e7ex
3p	<lay-ob>	le(-)ti7-ó7ob' - ti[(7)ó](7)ob'	lay(-)ti7-oo7	la(-)ti7-o7	le7ek-oo7

³⁵ The Classic Yukatek data are from Bricker (1986:24).

³⁶ These data are taken from Bricker (1986:25) and McQuown (1979:50).

³⁷ Bricker (1986:25) shows initial glottal stops and no morpheme breaks, while Kaufman (1989:Part D, 76) does not show initial glottal stops and does show the morphemic break up of the pronouns.

³⁸ The Lakantun data are from Bruce (1968:51), and are also cited in Bricker (1986:24).

CHAPTER III: LIST OF TABLES

Table 3.1. Disharmonic spellings.

Table 3.2. Spellings of Ca(G)C and Cā(G)C roots and sequences used by Houston, Stuart, and Robertson (1998).

Table 3.3. Bricker's (1986) verbal inflection paradigm.

Table 3.1.³⁹

SPELLING	ITEM ⁴⁰	...C	...V(G)...
7AT-ti	pC *7at < pM *7aaty 'penis'	t	a(a)
BAK-ki	pC *b'ak < pM *b'aaq 'bone'	k	a(a)
cha-b'i	pC *chab' < pM *kaab' 'honey'	b'	a(a)
cha-ki	pC *chahuk < pM *kahoq 'lightning'	k	a(a)
	MChol *chajk	k	a(j)
ch'a-hi	pC *ch'ah < pM *k'ah 'bitter' (?)	h	a
	MYu ch'aa(h/j) 'gota' (?)	h/j	aa
HAB'-b'i	pC *hab' < pM *ha7b'	b'	a(7)
7i-ka-tzi	Tze ihcatz(-il) '(la) carga'	tz	a(a)
7i-tz'a-ti	CYu <itz'a> 'wise man'	t	'a(?)
	Mo 7i:tz'-a' (tv) 'saber, conocer'		
	Mo 7i:tz'-o:m (ap) 'sabio'a(a)		
	cf. Itzaj 7aj-aw-at 'shouter' < aw 'shout' + -at 'agentive(?)'		
ja-yi	pC *jay < pM *jaay 'thin'	y	a(a)
hu-chi	MCh'ol huhch 'conch shell'	ch	u(h)
hu-b'i	Yu hub' 'conch shell'	b'	u
yi-ch'a-ki	pC *7ihch'ak < pM *7iSk'aq 'nail, claw'	k	a
yi-cha-ni	pC *7ichan < pM *7ikaan 'uncle'	n	a(a)
ma-xi	pC *max 'spider monkey'	x	a
mu-ti	pC *mut < WM *muut 'bird'	t	u(u)
na-hi	MYu nah 'house'	h	a
7OTOT-ti	pC *7otot < pM *7atyooty 'house'	t	o(-)
pa-ti	pC *pat < ?pM *paaty 'back, peel'	t	a(a)
su-tz'i	pC *sutz' < pM *so7tz' 'bat'	tz'	u(7)

³⁹ Spellings whose contexts and/or interpretations cannot be confirmed at this point by this author have been omitted. These include spellings of words with final apical (e.g., **ch'a-ti**, **cha-chi**) and non-apical (e.g., **xo-ki**, **wo-hi**) consonants.

⁴⁰ The proto-Ch'olan entries are from Kaufman and Norman (1984), the Modern Ch'ol entries are from Aulie and Aulie (1978), the Modern Yukatek entries are from Bricker, Po7ot Yah, and Dzul de Po7ot (1998), the Colonial Yukatek entries are from Barrera Vásquez et al. (1980) or (), the Mocho' entries are from Kaufman (1967), the Itzaj entries are from Hofling and Tesucún (1997), and the Tzeltal entries are from Slocum and Gerdel (1971).

ta-hi	?pC *tah < pM *tyaah 'obsidian'	h	a(a)
TUN-ni	pC *tun < pM *tooN 'stone'	n	u(u)
wa-WAJ-ji	pC *waj < WM+Yu *waaj 'food'	j	a(a)
7AYIN-na	pC *7ahin < pM *7ahiin 'alligator'	n	i(i)
ha-7o-b'a	?pC ha7-o(7)b'(+a) 'these ones (?here)'	b'	o(7)
b'u-la	pC *b'u7ul 'beans'	l	u7u

Table 3.1. (Continued)

SPELLING	ITEM	...C	...V(G)...
hu-na	pC *hun < pM *hu7N 'paper, book'	n	u(7)
yi-tz'i-na	pC *7ihtz'in < pM *7ihtz'iin 'younger sibling'	n	i(i)
ka-se-wa	<cazeu>	w	e(?)
ke-le-ma	MYu kelem 'handsome'. keléem 'shoulder'	m m	e éé
tu--pa	MYu tüup 'earring'	p	üu
yu-ha	pC 7uh < pM *7u7h 'bead, necklace'	h	u(7)
-Co-ma	pC -om < pM *-oom 'agent noun'	m	o(o)
to-k'a	pC *tok' < Lowland *took' 'flint'	k'	o(o)
7a-ku	pC *7ahk 'turtle' < WM+Yu *7ahk	k	a(h)
b'a-tz'u	MYu b'äatz' 'howler monkey'	tz'	äa
che-b'u	CYu <cheb> 'brush (feather) for writing'	b'	e(?)
7e-b'u	pC *7ehb' 'ladder' < pM *7ehb'	b'	eh

Unclear/Unknown Etymology/Contexts⁴¹

ch'a-ti, MAN-ni, mi-ya-tzi, si-ya, K'AWIL-la, ni-la, ki-ta, k'u-ti-ma, ma-su, mu-chi, mu-ku-yi, 7a-nu, 7u-si, chi-ku, te-mu

⁴¹ The meaning is not obvious from its context, only perhaps its general function; or the source of the example is not mentioned in Houston, Stuart, and Robertson (1998), in which case I cannot confirm its context.

Table 3.2.⁴²

...Ca(G)C ROOTS

SPELLING	ITEM ⁴³	
7a-ja-wa	pC *7ajaw 'king, lord' < pM *7aajaaw	S
7a-ku	pC *7ahk 'turtle' < WM+Yu *7ahk	D
7AT-ri	pC *7at 'penis' < pM *7aaty	D
BAK-ki	pC *b'ak 'bone' < pM *b'aaq	D
cha-b'i	pC *chab' 'honey' < pM *kaab'	D
cha-ki	Ch'ol chahk < pC *chahuk 'lightning' < pM *kahoq	D
CHAN-na	pC *chan 'sky' < pM *ka7N	S
cha-pa-ta	chapaht 'centipede'	S
ch'a-b'a	pC *ch'ahb' 'fast' < pM *k'ahb' (3)	S
ch'a-hi	pC *ch'aj 'bitter' < pM *k'ah	D
HAB'-b'i	pC *hab' 'year' < pM *ha7b'	D
yi-ch'a-ki	pC *7ihch'ak 'claw' < pM *7iSk'aq	D*
yi-cha-ni	pC *7ichan 'uncle' < pM *7ikaan	D
ja-yi	pC *jay 'thin' < pM *jaay	D
KAB'-b'a	pC *kab' 'earth' < pYu *kaab' < pM *kab' - *kaab'	S
k'a-b'a-7a	pC *k'ab'a7 'name' < LL *k'aab'aa7	S
k'a-k'a	pC *k'ahk 'fire' < pM *q'ahq'	S
la-ka	cf., Yukatek läak 'clay cup'	S
ma-xi	pC *max 'spider monkey' < Lowland #ma7x	D
na-hi	Yukatek nah 'house', pM *Naah (?)(HSR)	D
na-li	Yukatek -nal 'from/at/in [place]' (?)	?
pa-ti	pC *pat 'back' < ?pM *paaty	D
TAN-na	pC *tahn 'chest' < LLxCT *tahn	S
ta-hi	pC *tah 'obsidian' < pM *tyaah	D

⁴² For some of the examples in Houston, Stuart, and Robertson (1998) (e.g., **7a-nu**, **ma-su**) the etymology and phonological shape are still uncertain or unclear, making it impossible for now to use them as positive data for either Ca(G)C or Cä(G)C sequences. (Also, examples like **ma-su** are misleading, because the spelling may reflect a partly spelled -u suffix suggested by the alternate spelling **ma-su-la**). Only nouns are included, since verbs and suffixes may not constitute cases with final silent vowels (e.g., **hu-li** may spell *hul-i-Ø 's/he/it arrived (here)' and **wa-ni** may spell *wan-i 'completive status of positionals'). I have not included spellings/interpretations that I have not been able to confirm either (e.g., **b'a-tz'u** for b'at7z' 'howler monkey').

⁴³ An S indicates that the spelling is synharmonic despite preconsonantal aG (G = /-/, /ʃ/, /h/), and a D indicates the spelling is disharmonic, and a D* indicates the spelling is disharmonic despite preconsonantal a without G.

Table 3.2. (Continued)

...Ca(G)C ROOTS

SPELLING	ITEM	
to-ka-la	pC *tokal 'cloud' < pM *tyooq(-al)	S
wa-WAJ-ji	pC *waj 'tamale' < WM+Yu *waaj	D
wa-ya	pC *way 'sleep; animal spirit' < pM *war	S
ya-la	pC *7al 'woman's offspring' < pM *7aal	S

...Cä(G)C ROOTS (ALL SYNHARMONIC)

SPELLING	ITEM
7a-k'a-b'a	pC *7ahk'äb' 'night' < pM *7ahq'ab'
b'a-la-ma	pC *b'ahläm 'jaguar'
ka-ka-wa	pC *käkäw 'chocolate' < MZ *kakawa
k'a-b'a	pC *k'äb' 'arm' < pM *q'ab'
K'AN-na	pC *k'än 'yellow'
na-la	pC *näI 'maize ear' < pM *Nal
na-la	Yukatekan *-nal 'from/at/in' (e.g., yi-chi-NAL)
sa-ka	pC *säk 'white' < pM *saq

Table 3.3.

Verb Type	ERG	Stem	INC	CMP	ABS
TRANSITIVE	A-	—	-Vw		-Ø
	A-	—		-aj	-Ø
ANTIPASSIVE	S-	—	-Vl		
	--	--	--	--	
INCORPORATIVE					
ANTIPASSIVE	S-	—	-Ø		
		—		-aj	-S
(MEDIO)PASSIVE	S-	—	-Ø		
		—		-aj	-S
INTRANSITIVE	S-	—	-Ø		
		—		-aj	-S
POSITIONAL	--	--	--	--	
		—		-l-aj	-S
		—		-wan	-S

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Table 4.1. Affixation patterns of drinking cup glyph based on T77.

Table 4.2. Affixation patterns of drinking cup glyph based on T128.

Table 4.1

PATTERN	FREQUENCY	EXAMPLES (KERR-#)
1. 7u-	(6/162)	
1a. 7u-k'i-b'i	(3/6)	703, 1183, 4379
1b. 7u-k'i-b'a	(1/6)	6997
1c. ?7u-k'i-b'i	(2/6)	1186, 2323
2. yu-	(159/162)	
2a. yu-k'i-b'i	(153/162)	509, 511, 518, 6997
2b. yu-k'i-b'a	(2/162)	2206, 3025
2c. yu-k'i-?-b'i	(1/162)	1379
2d. yu-k'i-b'i-?la	(3/162)	1371, 2152, 4995
2e. yu-k'i-?b'i	(2/162)	5448
3. -b'i	(158/162)	
3a. 7u-k'i-b'i	(3/158)	cf. 1a
3b. yu-k'i-b'i	(153/158)	cf. 2a
4. -b'a	(3/162)	
4a. 7u-k'i-b'a	(1/3)	6997
4b. yu-k'i-b'a	(2/3)	2206, 3025
5. [ba]	(2/162)	
5a. yu-k'i[b'a]		3924, 5350
6. -b'i-?la	(3/147)	
6a. yu-k'i-b'i-?la		cf. 2d

Table 4.2

PATTERN	FREQUENCY	EXAMPLES (KERR-#)
1. (y)u-T128-b ^V	(5/162)	
2. yu-T128	(5)	
2a. yu-T128[b'a]	(2/5)	1728, 5453
2b. yu-T128-b'a	(1/5)	791
2c. yu-T128-b'a-b'i	(2/5)	635, 1226
3. -b'a-b'i	(2/6)	
3a. yu-T128-b'a-b'i		cf. 2c
4. 7u-T128-b ^V	(1/6)	
4a. 7u-T128-b'a		1339

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Table 6.1. Corpus of Late Preclassic Mayan texts.

Table 6.2. Abbreviations for Late Preclassic portable texts.

Table 6.3. Signary of DO Pectoral Subtradition in numbers with Total Sign (TS) and Total Distinct Sign (TDS) numbers for the four texts.

Table 6.1.

MONUMENT	SITE	DATE	SCRIPT
Monument 13	La Venta	600-500 B.C.	Olmec
Monument 1	El Porton	400 B.C.	Mayan(?)
Sherd	Chiapa de Corzo	300 B.C.	Epi-Olmec
Stela 27	Izapa	300-50 B.C.	?
Chicanel Sherd	El Mirador	200-100 B.C.	Mayan
Stela 2	El Mirador	A.D. 1-100	Mayan
Stela 2	Abaj Takalik	236-19 B.C.	Mayan
Stela 10	Kaminaljuyu	300-100 B.C.	Mayan(?)
Misc. Mon. 60	Izapa	200 B.C.	?
Altar 1	El Polol	176 B.C.-A.D. 35(?)	Mayan
Stela 2	Chiapa de Corzo	36 B.C.	Epi-Olmec
Stela C	Tres Zapotes	32 B.C.	Epi-Olmec
Altar 1	Kaminaljuyu	Late Preclassic	Mayan(?)
Monument 65	Kaminaljuyu	Late Preclassic	Mayan(?)
Stela 1	El Baul	A.D. 36	Mayan(?)
Bas-relief	Loltun Cave	Protoclassic	Mayan
DO Celt	Unprovenanced	A.D. 120	Mayan
Stela 5	Abaj Takalik	A.D. 126	Mayan
Stela 1	La Mojarra	A.D. 157	Epi-Olmec
Tuxtla Statuette	Veracruz	A.D. 162	Epi-Olmec
Hauberg Stela	Unprovenanced	A.D. 197	Mayan
Stela 21	Kaminaljuyu	A.D. 200	Mayan(?)
Monument 1	Chalchuapa	A.D. 200	Mayan(?)
Carving	San Diego Cliff	Protoclassic	Mayan
Altar 2	Kaminaljuyu	A.D. 200	Mayan(?)
Monument 11	Abaj Takalik	Protoclassic	Mayan
Bone stylus	Kichpanha	A.D. 150	Mayan
Diorite axe	Hatzcap Ceel	Protoclassic	Mayan

Table 6.1. (Continued)

MONUMENT	SITE	DATE	SCRIPT
Jade axe	Kendal	Protoclassic	Mayan
Jade bivalve effigy	Kendal	Protoclassic	Mayan
Stela	Alvarado	Late Preclassic(?)	Epi-Olmec(?)
DO Pectoral	Unprovenanced	Late Preclassic	Mayan
PMY jaguar	Unprovenanced	Late Preclassic	Mayan
Jade Clamshell	Unprovenanced	Late Preclassic	Mayan
Jade Spoon	Unprovenanced	Late Preclassic	Mayan
Brooklyn Museum	Unprovenanced	Late Preclassic	Mayan

Table 6.2.

TEXT	ABBREVIATION
Loltun Cave Bas-relief	LCA relief
Dumbarton Oaks jadeite celt	DO celt
Abaj Takalik Stela 5	ABT 5
La Mojarra Stela 1	LM 1
Tuxtla Statuette	TXT statuette
Hauberg Stela	HBG stela
El Mirador Chicanel Sherd	ELM sherd
El Mirador Stela 2	ELM 2
Abaj Takalik Stela 2	ABT 2
Kaminaljuyu Stela 10	KJ 10
San Diego Cliff Carving	SDC carving
Abaj Takalik Monument 11	ABT 11
Dumbarton Oaks quartzite pectoral	DO pectoral
Peabody Museum at Yale basalt jaguar	PMY jaguar
Jade clamshell effigy pectoral	UNP clamshell
Jade Museum jadeite spoon	JM spoon
Brooklyn Museum Olmec jade mask	BMA mask
Pomona jadeite earflare	PMA flare
Chichen Itza Cenote tubular jadeite bead	CNT 6125
Kendal jadeite bivalve earring	KND bivalve
Kendal jadeite axe	KND axe
Kichpanha bone	KCH bone
Hatzcap Ceel diorite axe	HTZ axe
Kaminaljuyu jadeite ear plug	KJ plug

Table 6.3.

Text	Blocks	Sign Total	Distinct Signs ⁴⁴	Signs/ Block	Total/ Distinct
DO pect.	24	37	32	1.6	1.2
PMY jag.	16	22	22 -6 = 16	1.4	1
JM spoon	8	18	13 -7 = 6	2.3	1.4
UNP clam.	8	13	12 -5 = 7	1.6	1.1
	Total: 56	Total: 89	Total: 61	Average: 1.6	Average: 1.2 Total: 1.5

⁴⁴ I have substracted the number of signs that are repeated from text to text, so that the total at the bottom of this column represents the total number of distinct signs in the four texts as a whole.

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Figure 0.1. Tikal Stela 31. (a) Left side text and image of Nun Yax 7ahin. (b) Front side and image of Sihjyaj Chan K'awil. (c) Right side and image of Nun Yax 7ahin. (d) Back side with long hieroglyphic text. Drawings by William Coe in Jones and Satterthwaite (1982:Figures 51 and 52).

Figure 0.2. Glyphic passages relevant to Sihjyaj Chan K'awil's accession ceremony. (a) Passage referring to Nun Yax 7ahin's death and to Sihjyaj Chan K'awil's succession. (b) Passage referring to Sihjyaj Chan K'awil's self-coronation. (c) Passage referring to the ceremony conducted with the Kal-om=Te7 headdress of Sihjyaj Chan K'awil's grandfather and the hun headdress of Sihjyaj Chan K'awil's grandmother. Drawings by William Coe in Jones and Satterthwaite (1982:Figures 51 and 52).

Figure 0.3. Glyphic references to ancestors on front side of Stelae 31. (a) Father: Yäx-7ahin's hovering spirit over Sihjyaj Chan K'awil. (b) Grandfather: SPEAR.THROWER-OWL's name on coronation Kal-om=te7 headdress. (c) Another ancestor: Sak-Hix. (d) ch'a-?-NAL: a personage related somehow to SPEAR.THROWER-OWL, in wrist ornament. (e) Lineage Founder: 7ehb'-Xok's name on earflare. (f) Related Woman: Tun-7ajaw's name on other belt head. (g) Paternal grandmother: 7ix-7unen-Nahb'-Nal's name on the right belt head. (h) Sihjyaj Chan K'awil's own name (or that of his namesake, who ruled a century before him) on his headdress.

Figure 0.1.

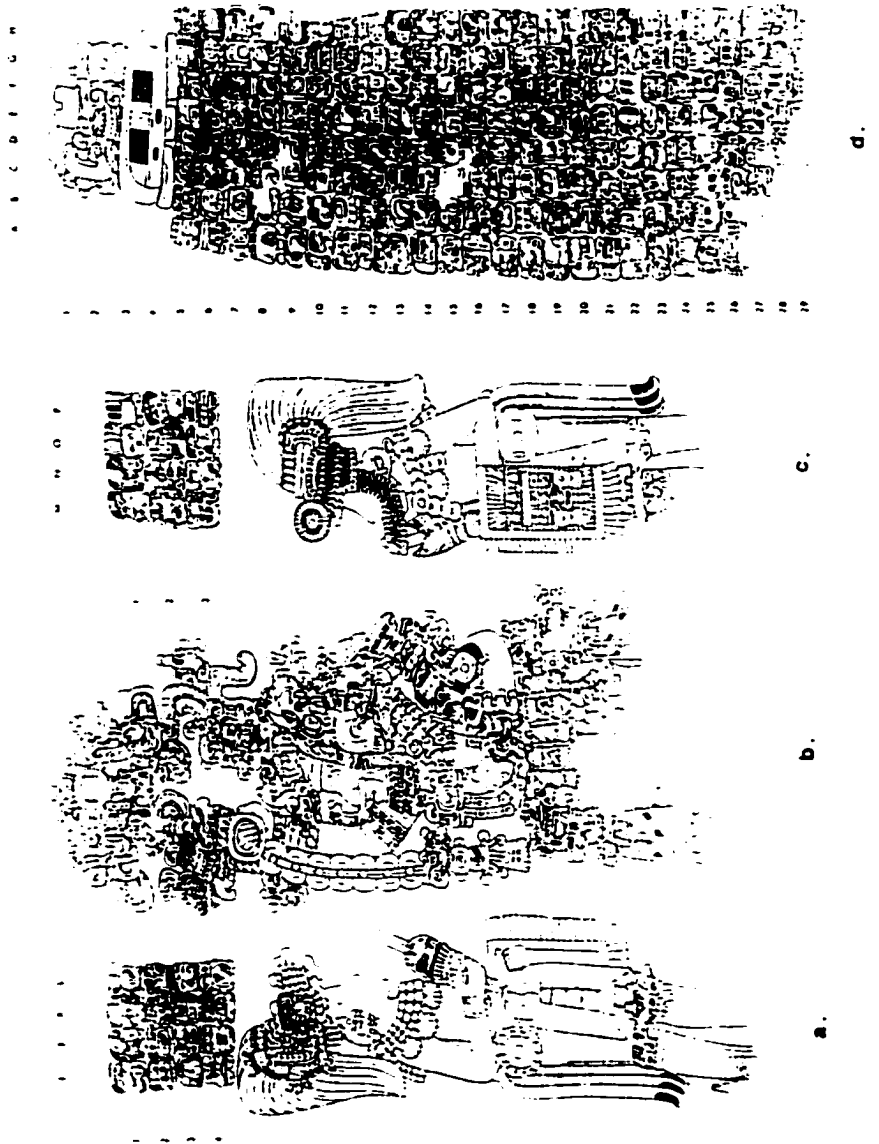


Figure 0.2.

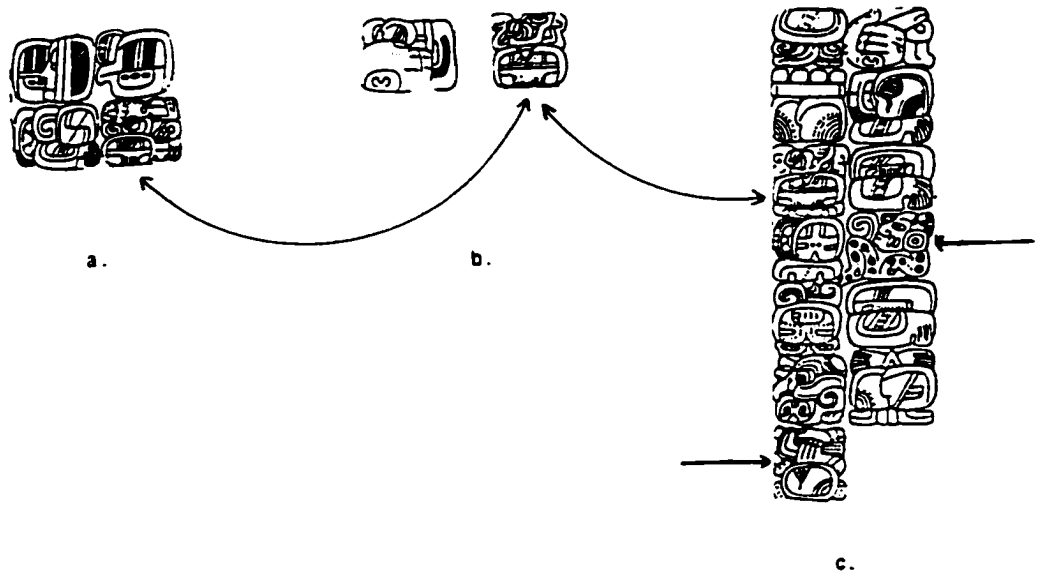
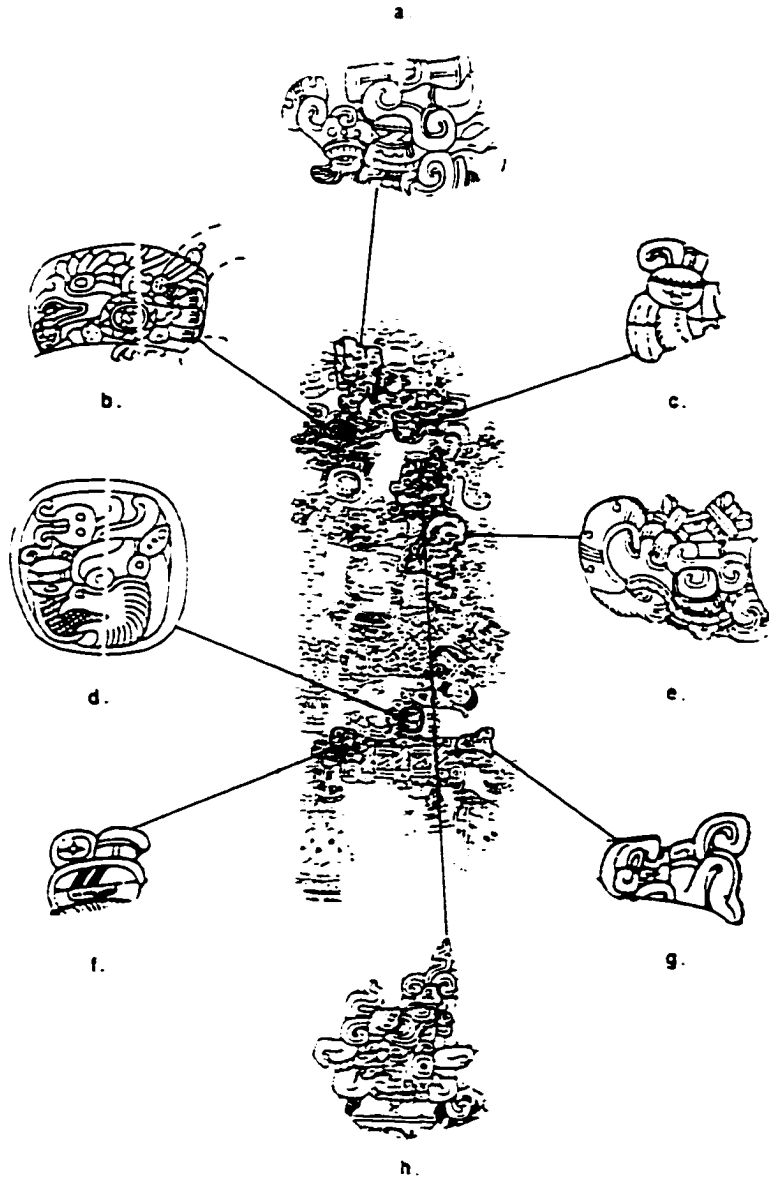


Figure 0.3.



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Figure 1.1. Map of Mesoamerica showing the major Late Preclassic script traditions: Zapotec, Epi-Olmec, Mayan, Kaminaljuyu-Abaj Takalik-El Baul-Chalchuapa. After Mathews (1985:47).

Figure 1.2. Four major Mesoamerican scripts. (a) Zapotec inscription: Lapidaria de Bazan. Drawing by Caso (1937:Figure 17) in Taube (2000b:Figure 30). (b) Teotihuacan inscription: Carved mirrorback disk. Drawing by Benson and Joralemon (1980:No. 36) in Taube (2000b:Figure 27). (c) Epi-Olmec inscription: La Mojarra Stela 1. Drawing by George Stuart (Capitaine 1988:7). (d) Classic Lowland Mayan inscription. Drawing by Linda Schele in Schele and Miller (1986:138, Plate 86).

Figure 1.3. Map of the Mayan region showing the Mayan highlands and Mayan lowlands subdivisions. From Sharer (1995:Figure 1.1, 21).

Figure 1.4. Map of the distribution of the Mayan languages. After Campbell (1997:363).

Figure 1.5. Mayan texts found outside the Mayan region. (a) Mayan text from the Tetitla Compound at Teotihuacan, Central Mexico. From Foncerrada de Molina (1980:Figure 22, 191). (b) Mayan texts from Chiapa de Corzo in southeastern Mexico. The Early Classic jades have been reworked into jewelry without regard for the original Mayan text. Drawing by author based on photograph in Agrinier (1975:Figure 98). (c) Mayan or Mayan-like text found in Lopez Mateos in Chiapas. Photograph and drawing from Piña Chan and Navarrete (1967:Figure 97, 50). (d) Mayan text found in northern Costa Rica. Drawing by author after photograph in Graham (1998:Plate 30, 54).

Figure 1.6. Classification of writing systems into semasiographic and glottographic types by Sampson (1985:Figure 3).

Figure 1.7. Two classifications of Mesoamerican scripts. (a) Classification by Hans Prem (1973:54): temporal precedence (earlier at the top) and degree of similarity (shown by extent of overlap of a block over another) are indicated, but no commitment to a

phylogenetic model is made. (b) Classification by Michael Coe (1976:Figure 1): close relationships between scripts, whether due to contact or common descent, are indicated with solid line enclosures, while more distant or sporadic or uncertain relationships are indicated with dotted lines. No attempt is made to organize the scripts into a temporal scheme.

Figure 1.8. Script classification by Marcus (personal communication, 1995). Marcus does not make any arguments about the possibility of a precursor script from which the two main traditions emerged. She does argue that the Kaminaljuyu script and the Isthmian script were important to the origin of Mayan writing.

Figure 1.9. Classification of Mesoamerican scripts by Justeson et al. (1985), Justeson (1986), and Justeson and Mathews (1990). I refer to the Isthmian script as Epi-Olmec in the dissertation. Kaufman and Justeson (1999) regard the the precise classification of the Kaminaljuyu script (i.e., whether Isthmian or Mayan-Izapan) as unspecifiable at the moment. Justeson et al. (1985) show that the Kaminaljuyu-Abaj Takalik-El Baul script sphere shares many traits with the Lowland Mayan script that are likely to be inherited or diffused, allowing for the definition of a Mayan-Izapan tradition.

Figure 1.10. Middle Preclassic Olmec-style artifacts. (a) Incised jade spoon from Distrito de Balsas, Guerrero, with incised iconography. From Coe (1965:754, Figure 29). (b) Incised jade ears plug from La Venta Offering 1942-a (Drucker 1952:Plate 54) with incised bird head. From Coe (1965:754, Figure 30). (c) Incised jade celt from Tlatenco, Distrito Federal, Mexico, with incised iconography. From Joralemon (1971:Figure 34).

Figure 1.11. Manner of suspension or wearing of jade plaques and celts. (a) Figure from Shook Altar with celts strapped to upper arms and wrists, and a jade spoon horizontally suspended above chest. Drawing from Taube (1995:Figure 10c). (b) Figure from Izapa Stela 3 with jade plaques strapped to forearms and legs. Drawing from Taube (1995:Figure 10f). (c) Figure from La Venta Stela 2 shown with jade plaque vertically suspended from his belt. Drawing from Taube (1995:Figure 14b). (d) Reconstruction of

Early Classic Mayan burial from Tomb 1, below Room 6, Structure III, at Calakmul, showing an individual with jade plaques suspended vertically from a pectoral jade head and a belt jade head. From Folan et al. (1995:Figure 11).

Figure 1.12. Olmec-style celts illustrating the pars-pro-toto, left-facing orientation, and vertical linear format representational conventions. (a) Celt from unknown provenance showing a full-figure portrait of a person dressed as a ruler and with the major status symbols (e.g., royal headband with jade jewels). The top of the headdress shows an emerging maize sprout motif. Drawing by this author based on photograph. (b). Celt showing a segmented head and hand of a deity with a maize tree emerging from the top of the head. Drawing by this author based on photograph.

Figure 1.13. Vertical linear format in two Middle Preclassic texts. (a) Oxtotitlan Cave Painting A-1, ca. 900-700 B.C. From Grove (1970:25, Figure 25). At least four separate signs, possibly as many as six, are arranged in a vertical column (A1-A4). (b) Ahuelican Greenstone Tablet, Dallas Museum of Art. At least five, possibly as many as eight separate signs, are arranged in a vertical column. Drawing by this author based on photograph in Rosenbaum (1995).

Figure 1.14. The Humboldt Celt, unknown provenance. It shows a vertical linear format. It also shows two possible pictorially-segmented event logographs: a crossed-arms gesture and a scattering gesture. Drawing from Joralemon (1971:25, Figure 32).

Figure 1.15. Possible 3/6-ALLIGATOR day count from Oxtotitlan Cave Painting 3, ca. 900-700 B.C. From Grove (1970:19, Figure 15).

Figure 1.16. Olmec celts bearing the World Axis theme. (a)-(b) Celts from heartland site of Arroyo Pesquero. The ruler is shown dressed with a Maize God headdress, a buccal mask, a ceremonial bar or bundle in his arms, and four maize ears, possibly in the form of jade celts, arranged along the four world directions around him. From Taube (1995:Figures 6e,f). (c) (d) Unprovenanced Olmec celts incised with abbreviated World Axis theme. From Fields (1991:Figure 4).

Figure 1.17. Jade celts as maize ears. (a) Glyph J: Zapotec depiction of maize ear emerging from seed. From Taube (1995:Figure 4d). (b) Detail from seated figurine, Monte Alban: Zapotec depiction of belt head ornament with three dangling jade celts. The celts are shown as maize ears. From Taube (1995:Figure 4e). (c) Back of Olmec-style jade figurine at Dumbarton Oaks showing maize seeds developing into sprouts and into maize ears. From Taube (1995:Figure 4a). (d) Olmec-style celt-shaped stela showing maize ears in four corners of a portrayed deity. Drawing by James Porter in Taube (1995:Figure 2c).

Figure 1.18. Three jade celts with MAIZE.GOD and MAIZE.EAR motifs. (a) El Sitio celt showing Olmec Maize God with realistic maize ear headdress. Drawing by this author after Navarrete (1971:Figure 5). (b) Unprovenanced Olmec-style celt with Maize God wearing a more stylized maize ear headdress. From Joralemon (1971:58). (c) Celt from La Venta Offering 1942-c (Drucker 1952:Figure 47-a), with incised MAIZE.EAR motif. Here the MAIZE.EAR motif may function as a label for the celt itself, and may constitute, in this way, an early MAIZE.EAR logograph. Drawing from Joralemon (1971:60, Figure 173).

Figure 1.19. Two early texts from Mesoamerica. (a) San Jose Mogote Monument 3, Zapotec, dated to ca. 600-500 B.C. by Marcus (1976), and to ca. 500-300 B.C. by Cahn and Winter (1993). The monument shows a sacrificed individual and below him at least two glyph blocks, each made up of a single sign, arranged into a vertical column. The top glyph is the day sign EARTHQUAKE, and the bottom glyph is the numeral ONE, rendering EARTHQUAKE-ONE or 'One Earthquake', a ritual calendar notation probably referring to the sacrificed individual's name. From Flannery and Marcus (1983:58). (b) La Venta Monument 13, Olmec, dated to ca. 600-500 B.C. based on radiocarbon evidence by Drucker, Heizer, and Squier (1959:267). It shows at least four glyphs: a right-pointing FOOTPRINT glyph, a weathered oval sign, a weathered trilobed sign, and a right-facing BIRD.HEAD sign. It is possible, given the position of the pictorial figure

in between the FOOTPRINT glyph and the oval sign, that the portrayed figure functions as a hieroglyph, probably as a proper name for the individual. If so, the text then consists of five hieroglyphs, three of which are arranged into a single vertical column. The fact that they all face right, rather left as one would expect, is probably due to the orientation of the portrayed figure (cf., La Mojarra Stela 1). Drawing from Marcus (1976:Figure 4).

Figure 1.20. La Mojarra Stela 1. The text contains two Long Count dates (A.D. 157), various distance numbers, and according to Justeson and Kaufman (1992, 1993, 1997) and Kaufman and Justeson (2001) it may represent pre-proto-Zoquean. Drawing by George Stuart (Winfield Capitaine 1988:7).

Figure 1.21. El Sitio Celt. It shows thirteen signs, arranged into nine glyphs (A1-A9). Some resemble Epi-Olmec signs very closely (e.g., A1a, A1b, A2, A3, A6a, A7), while some resemble Mayan signs (e.g., A1a, A2, A5b, A6a, A7, A8). Given its proximity to Izapa, and the possible presence of iconographically-embedded Epi-Olmec glyphs in the stelae at that site (Kappelman 1997; Kaufman and Justeson 2001), it is not implausible that this may be a form of Epi-Olmec writing too, or at least its closest relative (Kaufman and Justeson 2001). It is possible that the text may not be coeval with the incised figure on the front: the former may be Late Preclassic, while the latter may be Middle Preclassic (Taube 1995). Drawing by this author after Navarrete (1971:Figure 5).

Figure 1.22. (a) El Porton Monument 1 (ca. 450-350 B.C.). The topmost glyph was destroyed by looters: it consisted of a FLAT.HAND sign visible still in a polaroid photograph from the time of discovery. (b) Justeson and Mathews (1990) have pointed out possible presence of a predecessor of the Classic T644 SIT glyph in what is now the topmost surviving glyph. From Sharer and Sedat (1973:Figure 3).

Figure 1.23. Monuments from Late Preclassic Kaminaljuyu. (a) Stela 10, with two glyphic panels, each headed by an oversized day sign with an elaborate cartouche and pedestal. It may date to ca. 400-200 B.C., based on associated Verbena phase (400-200 B.C.) sherds. (b) Stela 11, with no glyphic panels but with possible iconographically

embedded glyphs, and with iconographic motifs related to glyphs attested on Stela 10 and in other Late Preclassic texts. It was associated with Verbena (400-200 B.C.) and Arenal (200 B.C.-A.D. 100) sherds, and could thus date to ca. 200 B.C. Drawing by James Porter. (c) Stela 21, fragmented monument with two surviving hieroglyphs. It dates to the late Arenal phase, ca. A.D. 100. Drawing by James Porter (Taube 1995:Figure 12a).

Figure 1.24. Day signs from Kaminaljuyu and Izapa. (a) Possible 7-MULUK notation on Kaminaljuyu Stela 10. Drawing by James Porter. (b) Possible 8-IX or 8-OK notation on Kaminaljuyu Stela 10. Drawing by James Porter. (c) Possible 10-[DAY.NAME] notation on Izapa Stela 27. Drawing from Norman (1976b:139). (d) Possible 7-DEATH notation on Izapa Miscellaneous Monument 60. It may date to the Guillen phase (300-50 B.C.). Drawing by this author based on photograph in Lowe, Lee, and Martínez (1982:194).

Figure 1.25. Texts from El Mirador, El Peten, Guatemala. (a) El Mirador Stela 2, dated to ca. A.D. 1-100, and 94 cm in height. From Hansen (1991:Figure 6). The drawing is incomplete, since until very recently the upper portion of the text (glyphs A1-A6) was thought to be uncarved. Richard Hansen (personal communication 2000) has shown, however, that there are in fact a few additional glyphs at A1-B2 that may be recoverable. Drawing from Hansen (1991). (b) El Mirador Chicanel potsherd, dated to ca. 200-100 B.C. I argue in this dissertation that the glyph, while iconically related to T533 7AJAW 'lord, ruler', is probably read in this case as NIK 'flower', a reading that T533 also had in the Classic period. Drawing by author based on photograph in Matheny (1987:338).

Figure 1.26. Polol Altar 1, Peten, Guatemala. The remains of a Long Count date which may fall within the range of 176 B.C.-A.D. 35 can be seen in the center. Drawing from Pahl (1982:24, Figure 1a).

Figure 1.27. Texts from Abaj Takalik, Pacific Coast of Guatemala. (a) Abaj Takalik Stela 2, with an incomplete Long Count date placing it between ca. 235-18 B.C. Drawing by unknown author after drawing by James Porter. (b) Abaj Takalik Stela 5, with two

Long Count dates, the later one placed at A.D. 125. Drawing by James Porter, courtesy of John Graham.

Figure 1.28. Texts from the Pacific Coast of Guatemala and El Salvador. (a) El Baul Stela 1, dated to A.D. 36. Drawing by this author based on photograph. (b) Chalchuapa Monument 1, in archaeological context dated to no later than ca. A.D. 200-400. Drawing from Anderson (1978:155).

Figure 1.29. Three stelae of about a meter in height. (a) Plain Stela from Cuello, 80 cm in height, dated to ca. A.D. 50-100. Drawing from Hammond (1982:Figure 4). (b) Antwerp Stela, unprovenanced, 90.5 cm in height but incomplete (one-fourth missing from bottom perhaps). Drawing by Erik Boot (1999:Figure 2). (c) Hauberg Stela, with date placing it at A.D. 197, 83.3 cm in height. Drawing by Linda Schele.

Figure 1.30. Three inscribed portable objects from Belize with noncalendrical texts. (a) Kichpanha Inscribed Bone, dating to ca. A.D. 150. It was recovered from a burial of a possible scribe, and may have been used as a stylus. The text opens with **K'UHUL K'INICH-B'ALAM** '(He is a) Divine Sun-faced Jaguar'. The glyph at A5 may be a conflation of two glyphs: **BAK-le** for b'ak-el and **WAY(AL)** for wäy(-al), a term for a type of sorcerer. The glyph at A7, finally, may be the **BEHEADED.JAGUAR** glyph, the name of a type of wäy 'animal spirit; shapeshifter'. I discuss this text further in Chapters VI and VII. Drawing by Peter Mathews. (b) Kendal jadeite bivalve shell effigy, Protoclassic context (70 B.C.-A.D. 400). All the glyphs in this text are either deity heads or personified glyphs. The first and third glyphs may be verbs, the glyph at A6 may be a third person ergative/possessive prefix, and the glyph at A7 may be a possessed noun with a nominal -VI suffix. Drawing by Linda Schele (Schele and Miller 1986:79, Plate 10a). (c) Kendal jadeite axe, Protoclassic context (70 B.C.-A.D. 400). The glyph at A4 is a form of the **JESTER.GOD** motif, read **HUN** 'paper, book, headband'. A4-A5, at least, may comprise a proper name of a person. Drawing by this author from photograph in Schele and Miller (1986:Plate 90a).

Figure 1.31. Pomona jade earflare, from Belize. It is dated to ca. A.D. 1-250 given its archaeological context according to Justeson, Norman, and Hammond (1988). Like the texts from Kichpanha and Kendal, this one also lacks calendrical information. Drawing by this author.

Figure 1.32. Relief from Loltun Cave in northern Yucatan. The first glyph is a ritual calendar day count, possibly **3-CHUWEN** or **3-7AJAW**. The glyph at A4a appears to be T1 **7u**, possibly functioning as a third person ergative or possessive prefix. The glyph at A6 may be an example of T17 **yi**. The glyph at A3 resembles that at A3 from El Porton Monument 1. It could spell a verbal suffix, since in both texts it follows a sign that could be a verb: in El Porton Monument 1 it follows a possible form of T644 **SIT**, while in the Loltun relief it follows the first noncalendrical glyph of the text, which might be a verb given the verb-initial word order of Mayan. The pose of the figure and the overall composition resemble Stela 11 from Kaminaljuyu. Drawing by this author after rubbing in Sharer (1995:Figure 3.23).

Figure 1.33. Scribal titles. Examples from Xcalumkin Panel 4. (a) A1: **7AJ-K'IN(-ni)** for 7aj-k'in 'priest' and **7AJ-tz'i-b'(a)** for 7aj-tz'ihb' 'scribe'. (b) A3: **NA77IX-7AJ-K'IN(-ni) 7ix-7aj-k'in** 'priestess'. Drawings from Corpus of Maya Hieroglyphic Inscriptions. The text actually states that the person carrying the **7AJ-K'IN(-ni)** and **7AJ-tz'i-b'(a)** titles was the son of the woman carrying the **NA77IX-7a-K'IN(-ni)** title.

Figure 1.34. Stela 63 from Copan. Drawing by Barbara Fash in Fash (1991:82, Figure 37).

Figure 1.35. Inscribed preciousness owned by ancestor. (a) Inscribed bivalve shell beginning with phrase (A1-A2) **yu-ha MAM** for y-uh(-al) mäm '(It is) the bead of a(a)/the ancestor/grandfather(/grandson/nephew)'. The text follows with **7u-SHELL** '(It is) the shell of' at A3, and **k'u^{2X} 7u-KAB' CHAK-?-na** 'Quetzal...', the ancestor's proper name. On the other side of the shell the portrait of the ancestor is shown, and his glyphic name **7u-KAB'** is placed on his headdress. Photograph in Coe and Kerr

(1998:Plate 39). (b) Panel from Chichen Itza showing God N, the prototypical ancestor, wearing the same type of shell as part of a necklace. Drawing from Taube (1992).

Figure 1.36. Gift and Tribute Presentation Themes. (a) Scene from a painted pottery vessel from Tikal Burial 116 showing a group of men wearing tribute mantles and presenting gifts to a seated lord. Drawing from Culbert (1993:Figure 68A). (b) Panel from Palenque showing three persons handling possible tribute mantles. From Stuart (1995:Figure 10.17).

Figure 1.37. Slate disk reportedly from Bagaces, northern Costa Rica, on display at the Jade Museum in San Jose (INS 6528). It contains, at A7-B8, a possible reference to a gift (7u-si for 7u-sih 'his gift') given to a lord from Uaxactun, Sihyaj Chan-7ahk K'uhul-Chan-7ajaw, by a lord from El Peru, K'inich B'ahläm Wak-7ajaw. The gift may have been the slate disk itself. Dated to ca. A.D. 300-400 based on style of glyphs and the references to historical personages. Drawing by this author.

Figure 1.38. Evidence suggesting scribes crafted and blessed preciosities, and were thus artisans and priests the same time. (a) Glyphic verb for wrapping: k'a-la-j(a) 'it was wrapped'. It was used as a dedicatory verb referring to the wrapping of monuments and portable objects, as well as of time periods in a more metaphorical sense. (b) Wrapped-up tribute mantles and other goods, such as pottery containers. (c) Wrapped-up gods. Diego de Landa describes how the priest that supervised the crafting of wooden gods wrapped them up in cloth before presenting them to the person who commissioned them. (d) Scene showing a scribe with a codex and paint brush tied to his head with a headband presenting a wrapped-up vessel to a seated lord.

Figure 1.1.

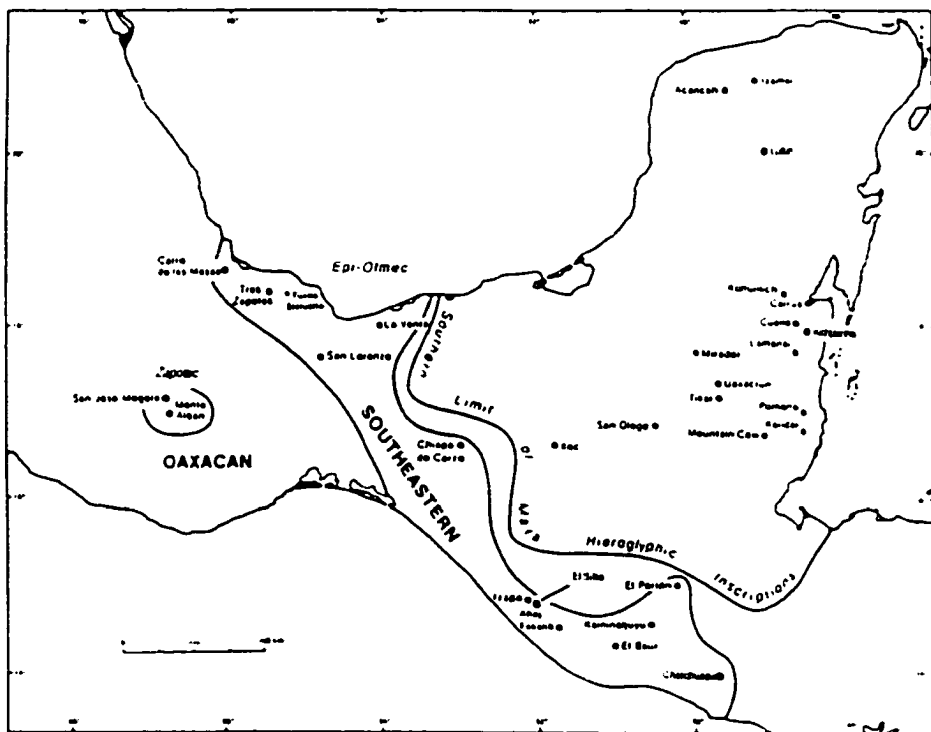


Figure 1.2.



a.



b.



c.



d.

Figure 1.3.

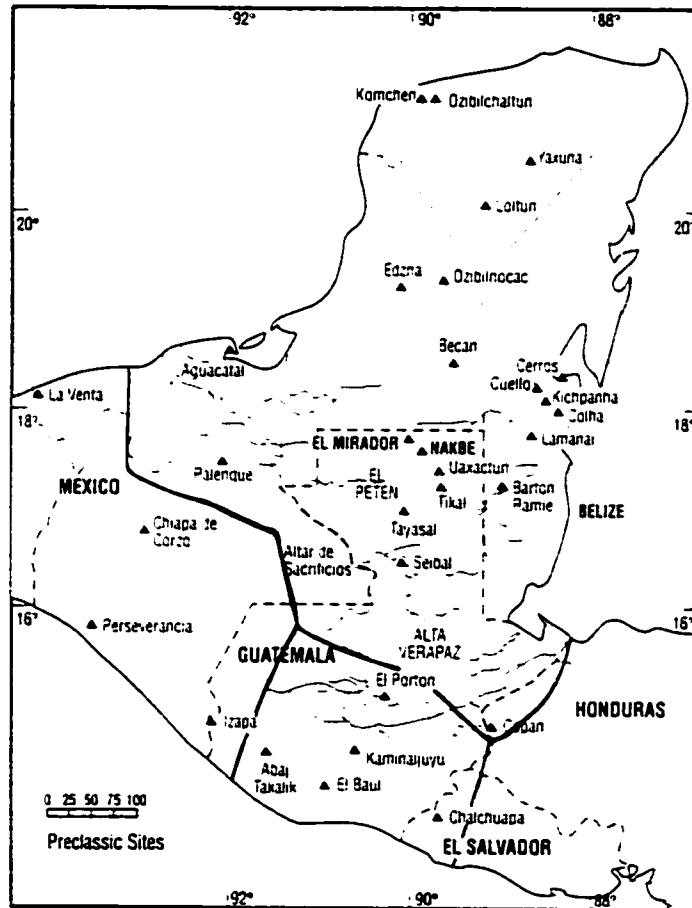
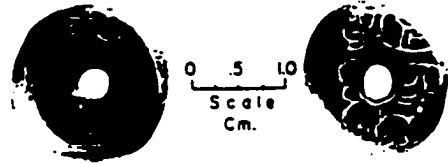


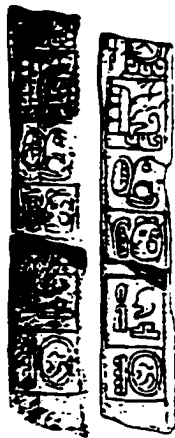
Figure 1.5.



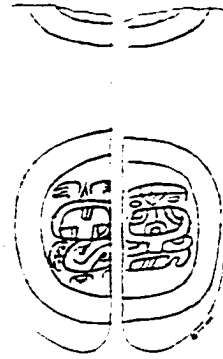
a.



b.



c.



d.

Figure 1.6.

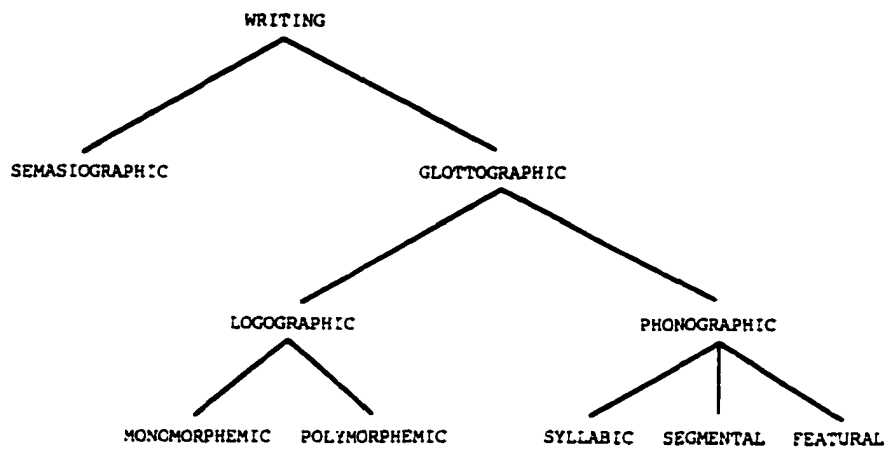
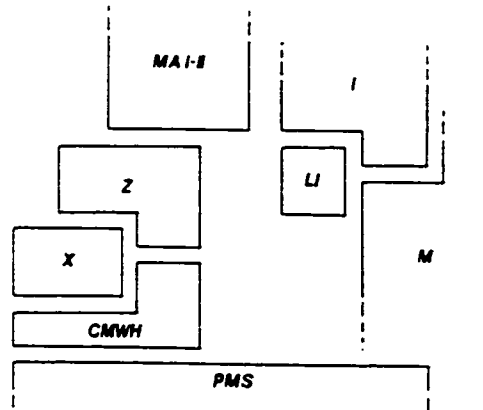
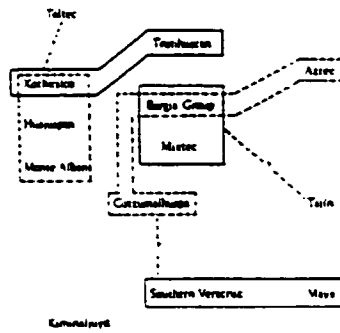


Figure 1.7.



- MA-I-I Monte Albán Writing
- Z Zapotec Writing
- I Intermediate Writing
- LI Late Isthmian Writing
- CMWH Central Mexican Writing Horizon
- X Xochicalco branch of the Central Mexican Writing Horizon
- PMS Post-Classic Manuscript Style
- M Classic Maya Writing

a.



b.

Figure 1.8.

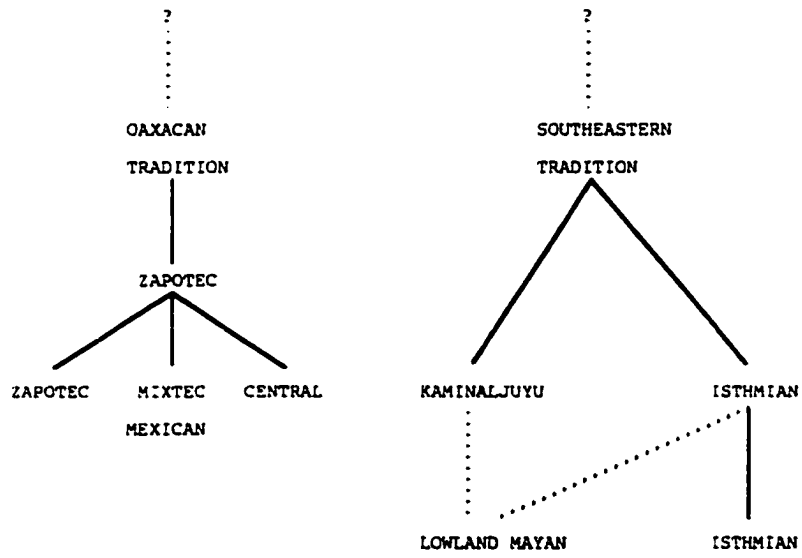


Figure 1.9.

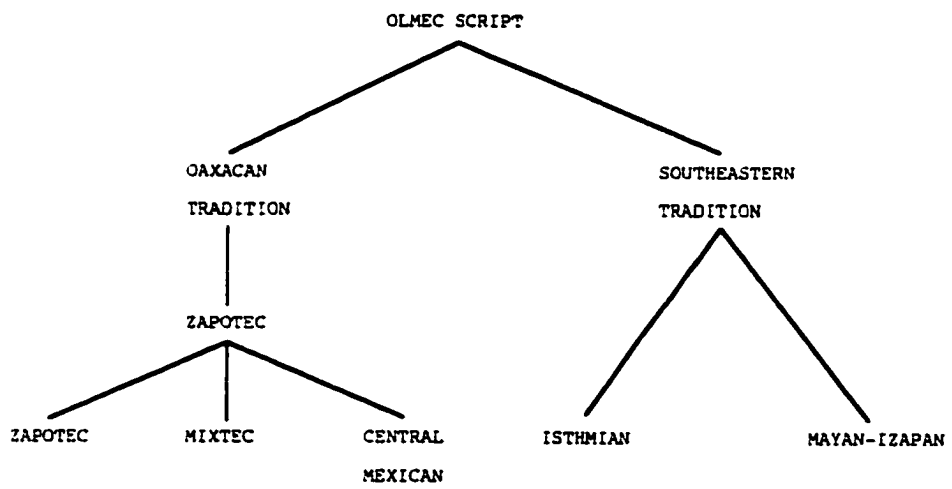
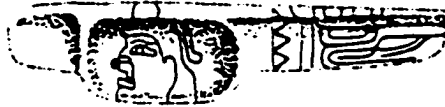
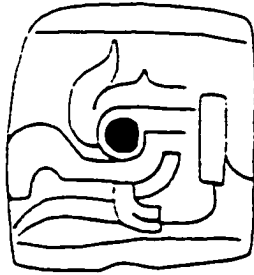


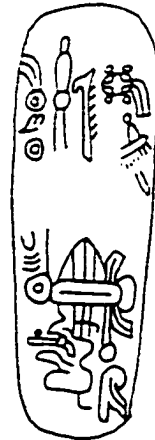
Figure 1.10.



a.



b.

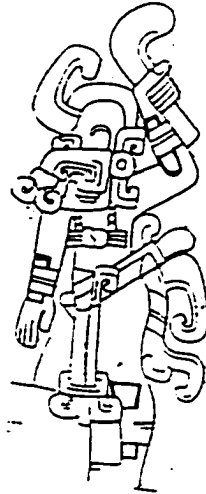


c.

Figure 1.11.



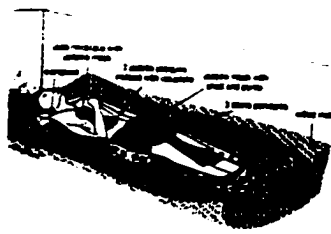
a.



b.



c.



d.

Figure 1.12.

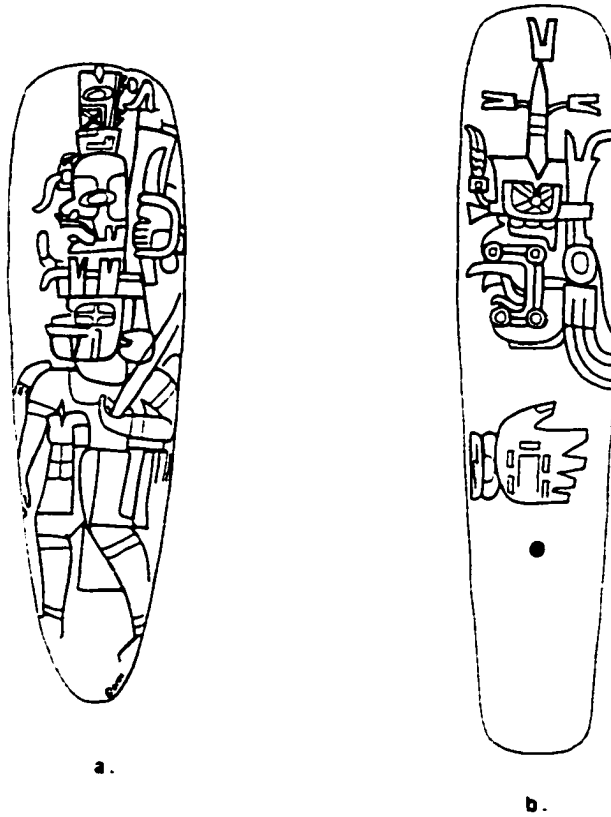
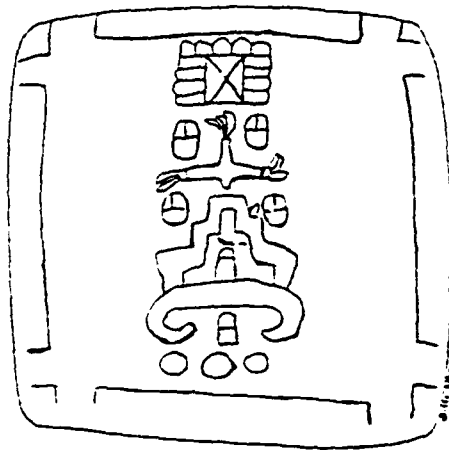


Figure I.13.

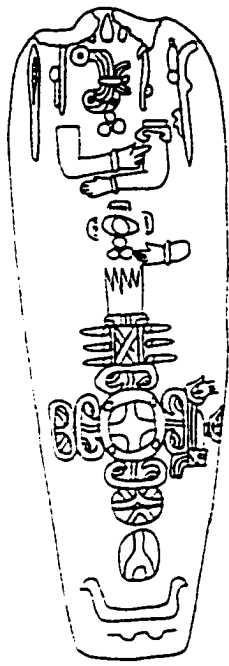


a.

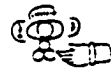


b.

Figure 1.14.



a.



b.

Figure I.15.

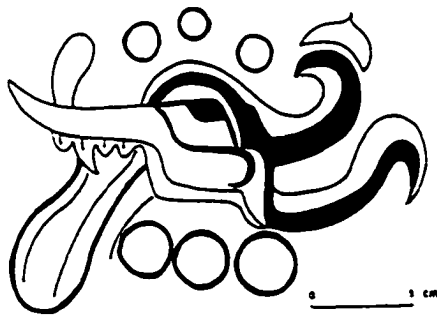
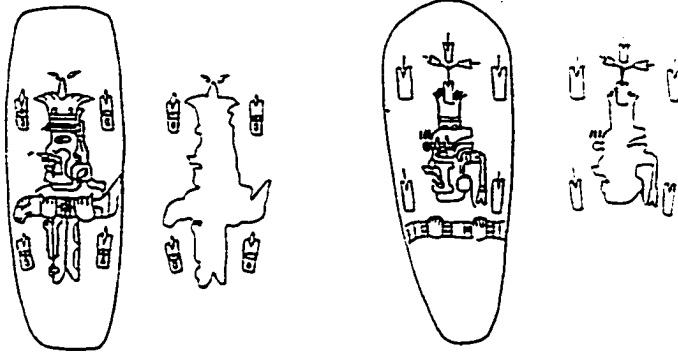
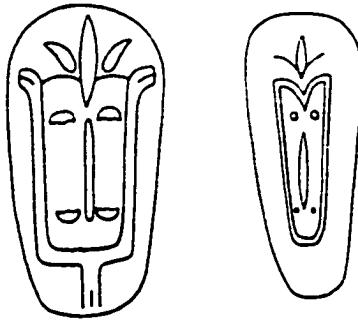


Figure I.16.



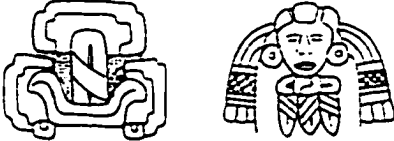
a.

b.

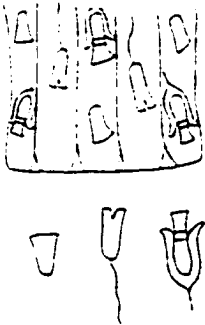


c.

Figure I.17.



a.



b.



c.

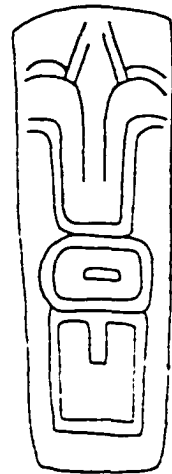
Figure 1.18.



a.

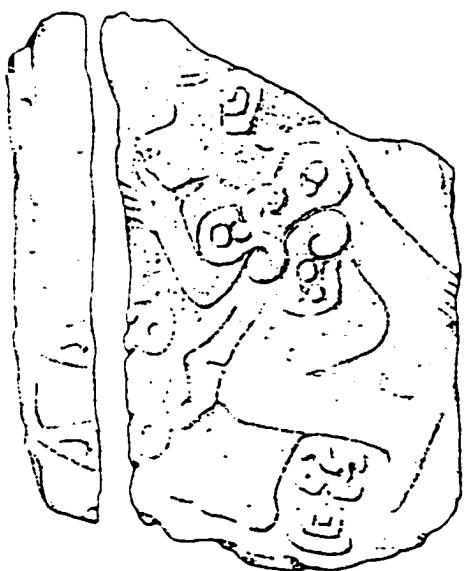


b.



c.

Figure 1.19.



a.



b.

Figure 1.20.

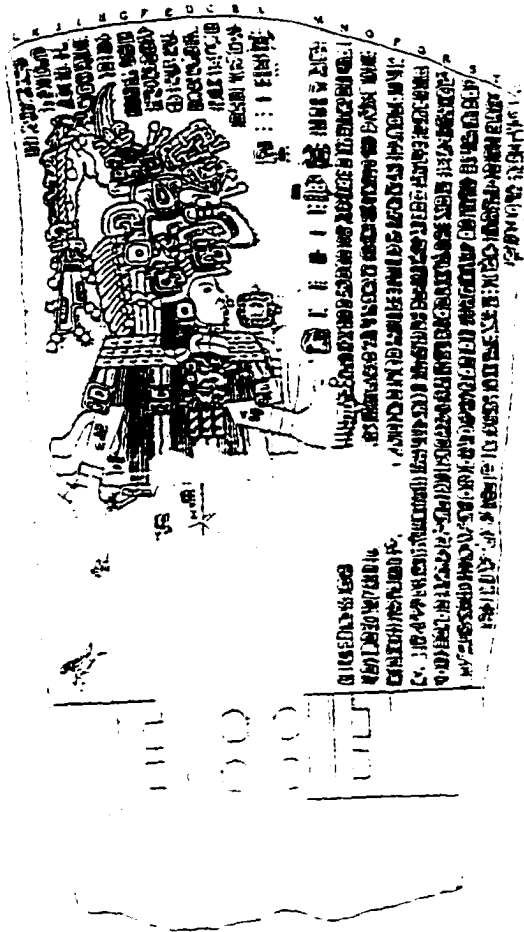


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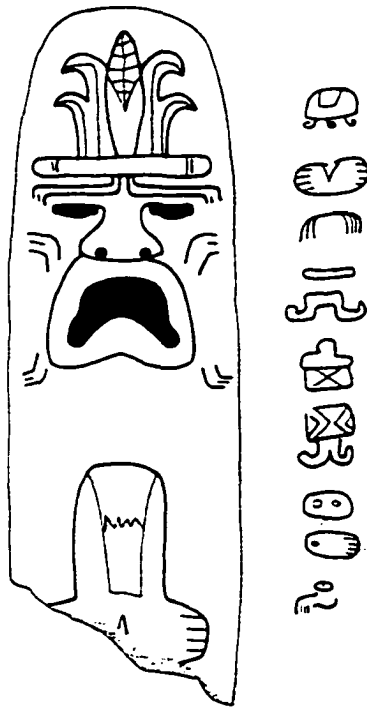
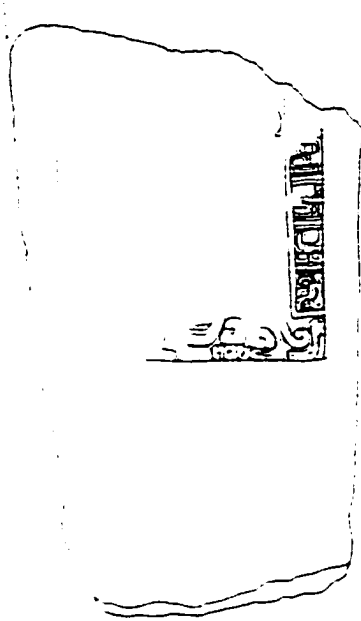


Figure 1.22.



a.



b.

Figure 1.23.

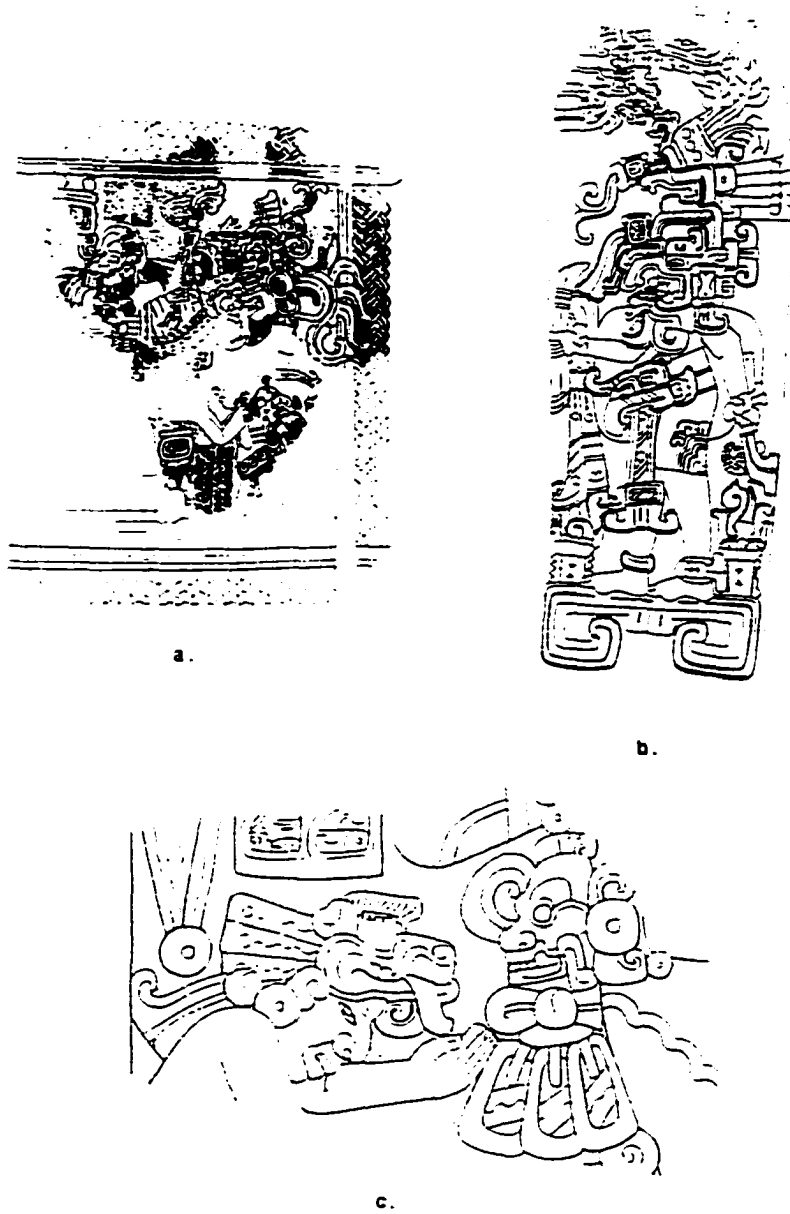


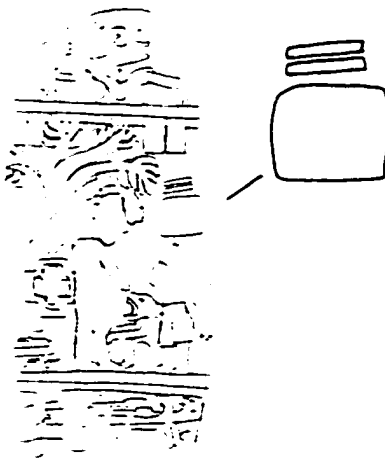
Figure 1.24.



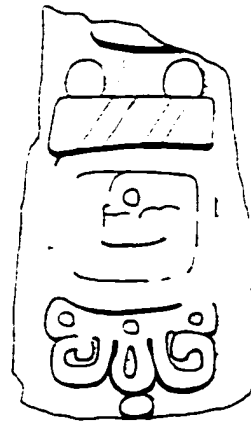
a.



b.

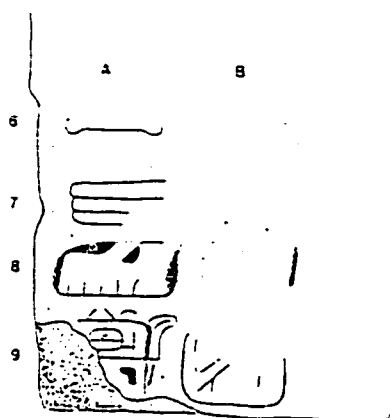


c.

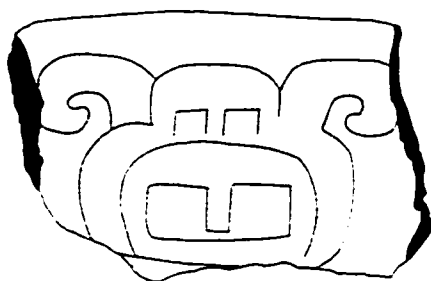


d.

Figure I.25.



a.



b.

Figure 1.26.

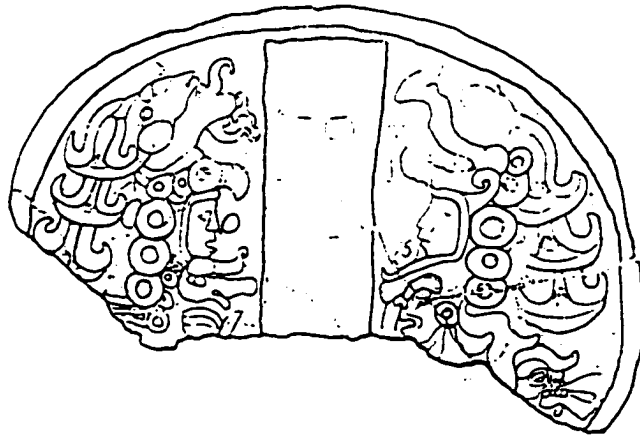
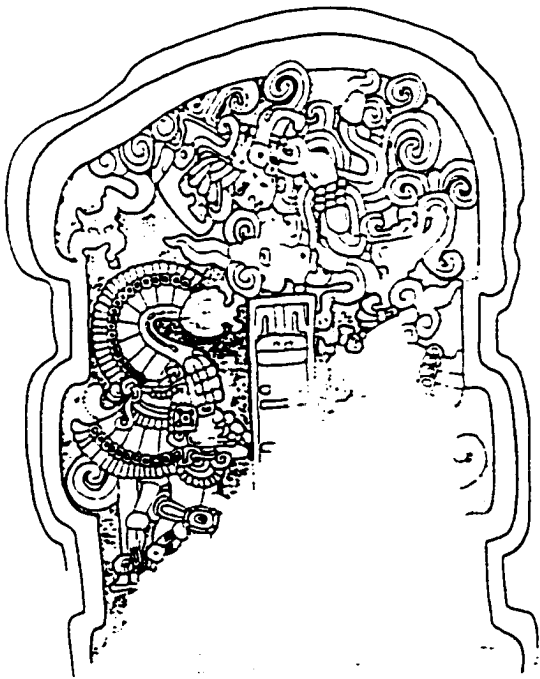
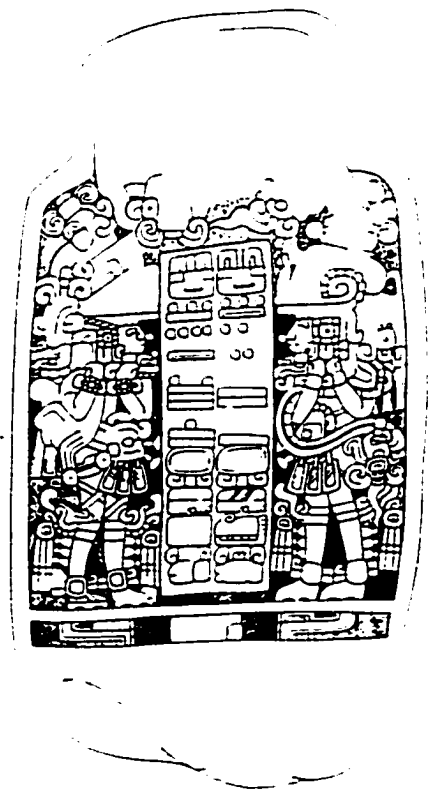


Figure I.27.

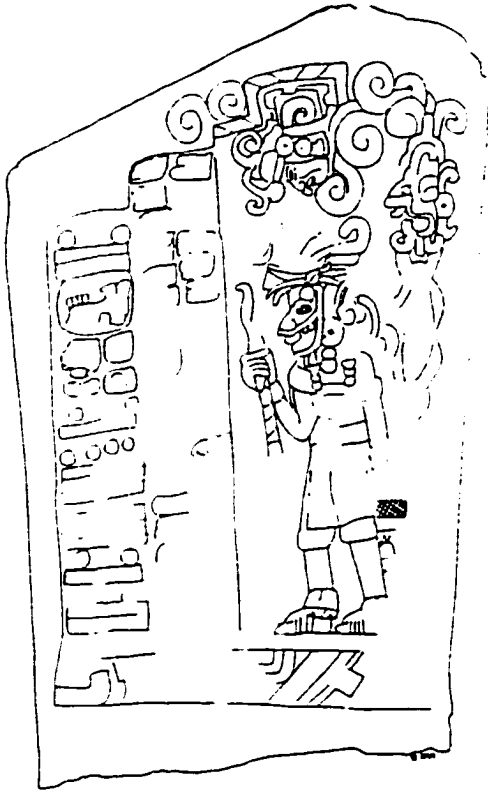


a.

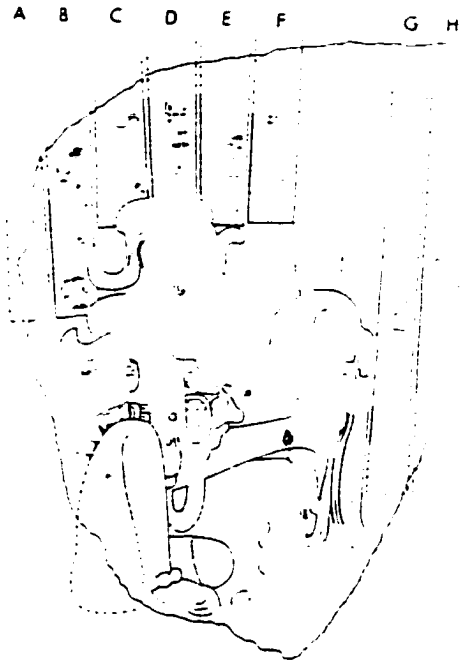


b.

Figure I.28.



a.



b.

Figure 1.29.

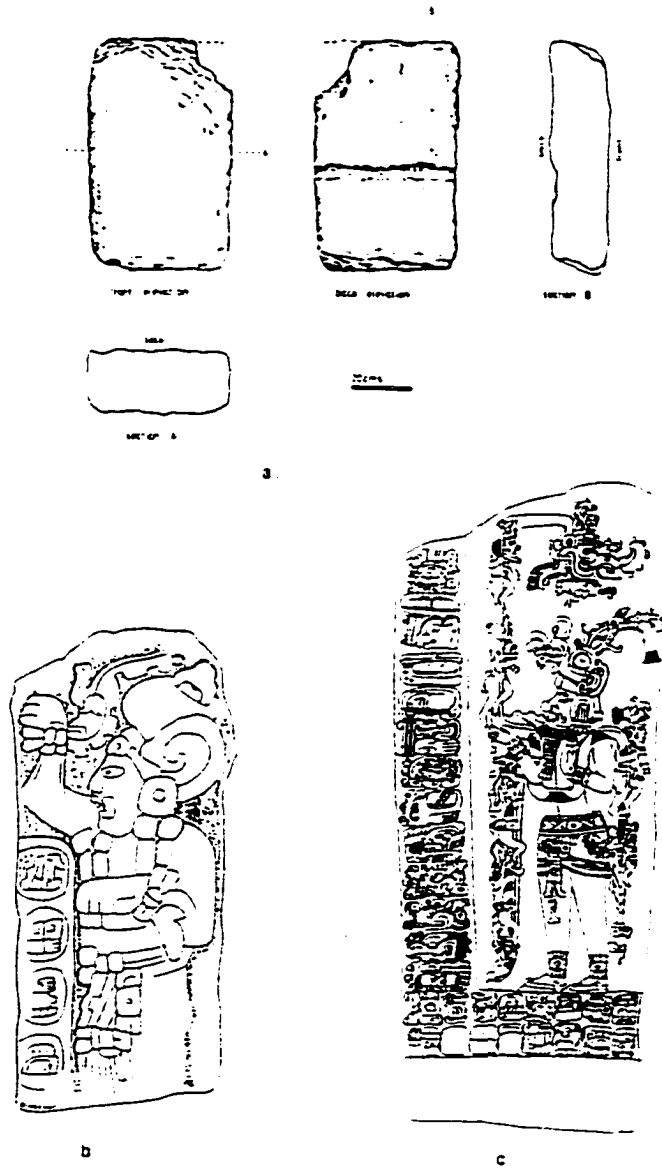


Figure I.31.

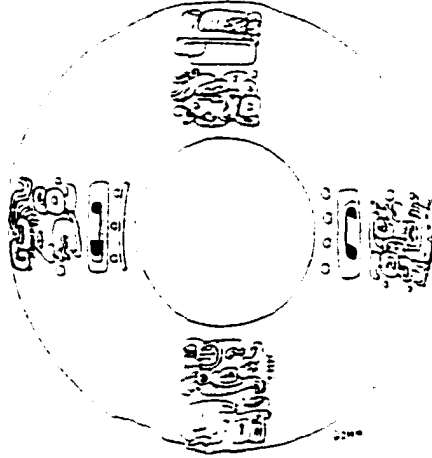


Figure 1.32.



Figure I.33.



a.

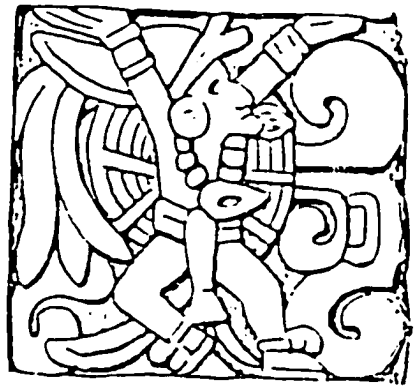


b.

Figure I.35.



a.

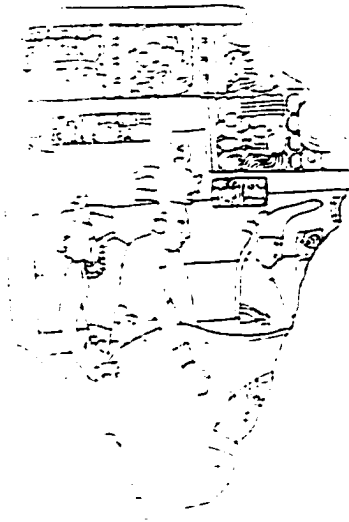


b.

Figure I.36.



a.



b.

Figure I.37.

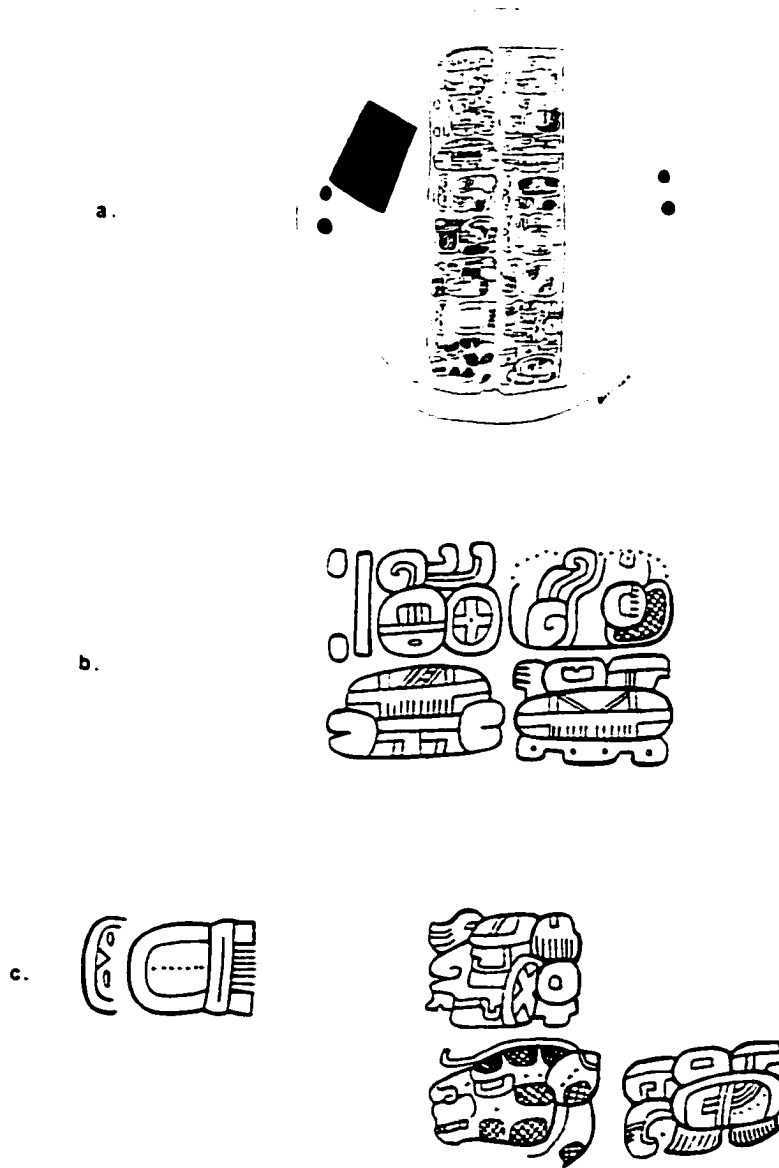
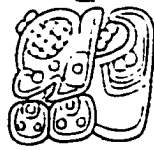


Figure I.38.



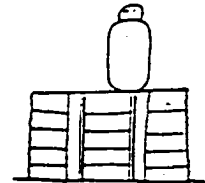
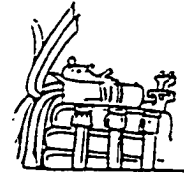
a.



b.



c.



d.

CHAPTER II: LIST OF FIGURES

Figure 2.1. Map of distribution of Mayan languages. After Campbell (1997:363).

Figure 2.2. Genetic classification of Mayan language family. After Kaufman (1976, 1989) but with alternative reconstructions by other authors as well. (J et al. = Justeson et al., K = Kaufman, K&N = Kaufman and Norman, R = Robertson.)

Figure 2.1.

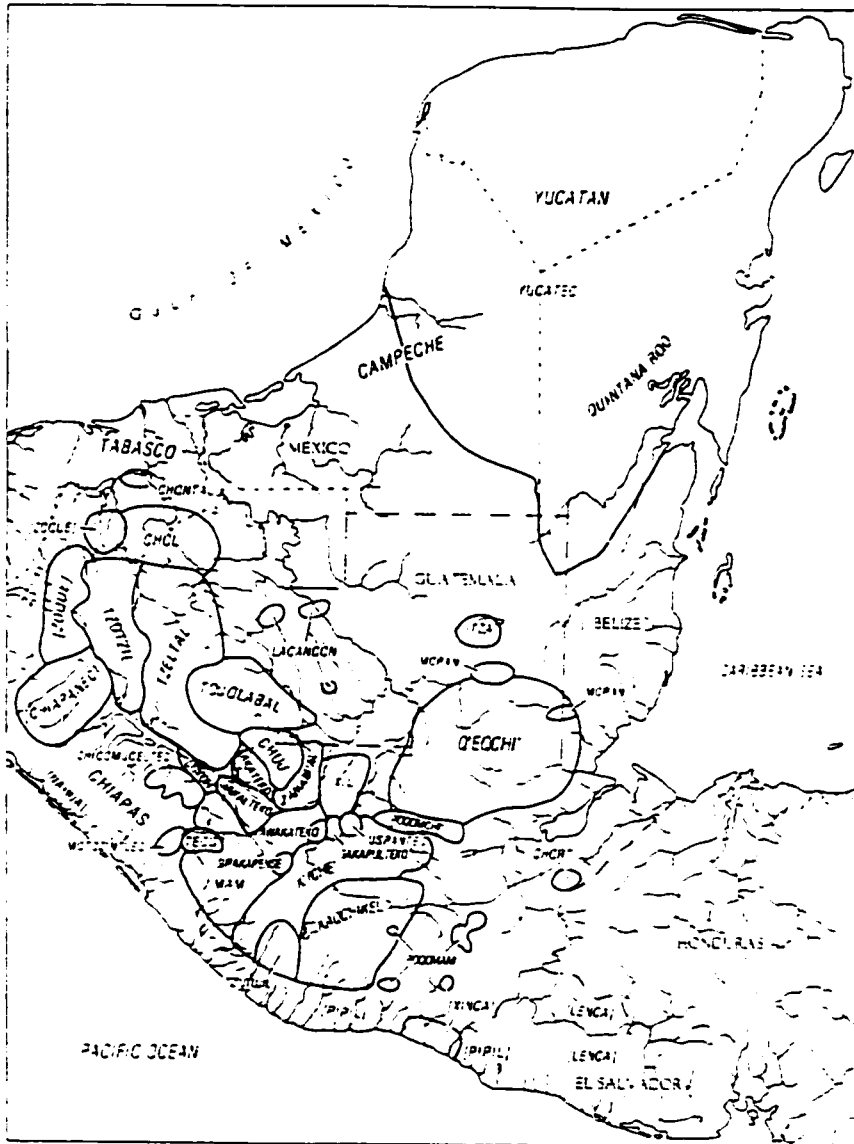
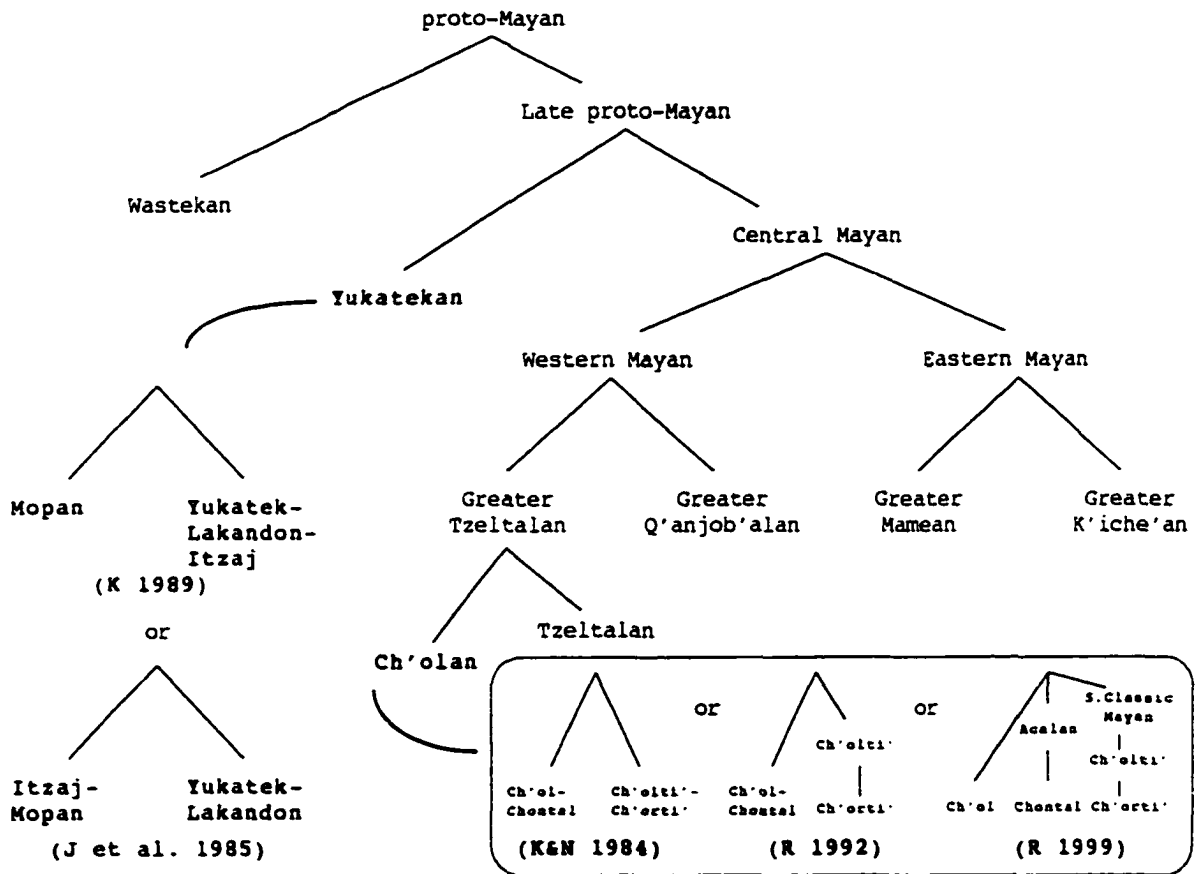


Figure 2.2



CHAPTER III: LIST OF FIGURES

Figure 3.1. Examples of variable formats in Mayan texts. (a) Single-column format from inscribed pot. Read: A1, B1, C1, D1, D2, D3. From K1398 in Kerr (1989:81). (b) Double-column format from pot. Read: A1, B1, A2, B2, etc. From K1398 in Kerr (1989:81). (c) Triple-column format from Nim Li Punit. Read: A1, B1, C1, A2, B2, C2, etc. Drawing by Nikolai Grube in Grube, MacLeod, and Wanyerka (1999:Figure 6).

Figure 3.2. Glyph Blocks. (a) Glyph block delineating personal name at F1. (b) Glyph block delineating verb at C4. Drawing by Linda Schele.

Figure 3.3. Reading order within glyph blocks. Drawing by Linda Schele.

Figure 3.4. Graphic “Main Signs” and “Affixes”: Prefix-Superfix-Main Sign arrangements. Drawings by Linda Schele.

Figure 3.5. Pars-pro-toto convention of Mayan signs. (a) T203/738 FISH (syllabic **ka**). From Delataille pot, after Berjonneau and Sonnery (1985). (b) T25 FISH.FIN (syllabic **ka**). Based on K1383 in Kerr (1989:78). (c) T236 BIRD (proposed **k'i**). After Grube (1990:Figure 1a). (d) T77 WING (proposed **k'i**). From K504 in Kerr (1997:729).

Figure 3.6. Four basic spelling compositional strategies. (a) Graphic phrase: **CHUM-(m)u + TUN(-ni)** for chum-u(l)-Ø tun ‘The stone/year is/was seated’: each glyph is rendered as its own glyph block. (b) Graphic compound: **CHUM-(m)u-TUN(-ni)**; a two-glyph collocation or compound. (c) Graphic infixation: **CHUM[TUN(-ni)]**. In this case the glyph **TUN(-ni)** is graphically infixed. (d) Graphic conflation: **CHUM:TUN**. The two main glyphs (without phonetic complements) are conflated with one another. All drawings by Linda Schele.

Figure 3.7. More examples of infixation, compounding, and conflation. (a) Infixation: **NA(HA)L[TE7]**. Incised tripod pottery bowl. From Coe (1973:110). (b) Conflation: **NA(HA)L:TE7**. Incised tripod pottery bowl. From Coe (1973:110). (c) Compounding: **ma-cha-ye-la**. Rio Azul jade plaque. Drawing by unknown artist. (d) Conflation: **ma-**

cha:ye. Rio Azul jade plaque. Drawing by unknown artist. (d) Logographic: **K'AB'A7** *k'aab'aa7 'name'. Drawing by this author based on photograph in Coe (1982:123). (e) Logograph with infixed phonetic complements: **K'AB'A7[-k'a-b'a]** *k'aab'aa7 'name'. Drawing after Grube (1994:Figure 2, 180).

Figure 3.8. Animation. (a) T501 **b'a**. (b) Animated T501 **b'a**. (c) Full-figure T501 **b'a**. Drawings by Linda Schele.

Figure 3.9. Generic heads. (a) T36 **K'UH/K'UHUL** 'god/divine'. (b) T36.1016 **K'UH/K'UHUL** 'god/divine'. Here T1016 GOD.C is just a generic 'god' head as a semantic determiner. (c) T36.SPOTTED.CHEEK.HEAD **K'UH/K'UHUL** 'god/divine'. Here the SPOTTED.CHEEK.HEAD sign substitutes for the T1016 GOD.C without any apparent change in meaning or reading. Drawings by Linda Schele.

Figure 3.10. Overlaying of signs. (a) T168:518 **7AJAW** 'lord, ruler'. (b) Emblem Glyph: **K'UHUL-MAN-7AJAW**. These examples show how **MAN** is overlaying T518, but T168 is still visible and provides the reading **7AJAW**. Drawings by this author.

Figure 3.11. Types of signs. (a) Logograph: **B'ALAM** for b'ahlām 'jaguar'. (b) Syllabograph: T563 **tz'i**. (c) Semantic determiner: **ROYAL.HEADBAND** sign, indicates **7AJAW** reading when placed on top of a generic man's or vulture's head. (d) Diacritic: **REDUPLICATION.DOTS**.

Figure 3.12. Polymorphemic logographs. (a) T740:561.365 **SIJ(YAJ)-CHAN-K'INICH**. (b) **SIJ(YAJ)-CHAN-K'AWIL**. (c) **SIJ(YAJ)-ja-CHAN-K'AWIL**.

Figure 3.13. Semantic determiners. (a) T1000 **7AJAW** 'lord, ruler'. The head of the person with the spot on the cheek is a generic head. The reading **7AJAW** is assigned to the sign only when the so-called ahau (Jester God) headband is placed on top of the generic head. (b) T747 **7AJAW** 'lord, ruler'. The head of the vulture appears to be another generic head; it is given a specific reading by placing a semantic determiner on its head: a royal headband will give it the reading **7AJAW**, a T59 **TORCH** sign will give it the reading **ti**. Drawings from Schele and Freidel (1990:54, Figure 1:4).

Figure 3.14. Use of diacritic for ‘read twice’. (a) ^{2X}ka-wa for *käkāw ‘chocolate’. From Delataille pot, after Berjonneau and Sonnery (1985). (b) 7u-^{2X}ne for 7unen ‘child’.

Drawing by Marc Zender. (c) yu-ne^{2X} for y-unen ‘his child’. Drawing by Marc Zender.

Figure 3.15. Logographic signs. (a) Different spellings of the word *b’ahlām ‘jaguar’:

B’ALAM, b’a-B’ALAM, B’ALAM-ma, b’a-B’ALAM-ma, b’a-la-ma. Drawings from

Schele and Freidel (1990:52, Figure 1:2). (b) **ma-MAN-na.** Drawing by Linda Schele

(www.famsi.org). (c) **MAN-ma-na.** Drawing by Linda Schele (www.famsi.org). (d)

wa-WAY for *wāy ‘animal spirit’. (e) **WAY-ya.** (f) **wa-ya-WAY.** (g) **WAY-wa-ya.**

(d)-(g) are from Stuart and Houston (1991:3, Figure 1).

Figure 3.16. Use of CVC logographs as purely phonetic signs. (a) **7u-K’UHUL-hu-lu**

tza-ku for 7u-k’uhul-tzak ‘his divine conjuring’. Yaxchilan Lintel 25. Drawing by Ian

Graham. (b) T918 **JUL** as a phonetic sign **hul: 7u-K’UHUL-hul-TZAK** for 7u-k’uhul-

tza(:)k ‘his divine conjuring’. Seibal. Drawing by James Porter. (c) Pot K1837: **ta-yu-**

ta-la for tā-y-ut-al (PREP+3sERG-finish-PARTC) ‘for his finished [...]’. From Kerr

(1989:116). (d) Pot K791: T573 **TAL** as a phonetic sign **tal: ta-yu-TAL** for tā-y-ut-al

‘for his finished [...]’. From Kerr (1989:49). (e) **wi-WINIK** for *winik ‘man, person’.

Piedras Negras Stela 15, fourth glyphic panel. Drawing by John Montgomery. (f) T533

NIK ‘flower’ as **nik: wi-nik-ki.** Xcalumkin Miscellaneous 5:Q1. Drawing by Ian

Graham.

Figure 3.17. Conventions involving purely phonetic spellings. Consonant insertion: (a)-

(d). (a) **ti-CHAN-na-li** for ti+chan-al ‘in the sky’. (b) **7u-K’IN-ni-le** for 7u-k’in-il

‘his/her/its day’. Drawings (a) and (b) from Bricker (1989:Figure 4.3). Vowel insertion:

examples (c) and (d). (c) **chu-ku-ja/AJ** for chu[h]k-aj-Ø-Ø ‘s/he/it was captured’.

Drawing by Linda Schele in Houston, Robertson, and Stuart (2001:23). (d) **yo-ko-b’i-li**

for y-ok-b’-il ‘his doorway’. Drawing by David Stuart in Houston, Robertson, and Stuart

(2001:22). Consonant deletion: examples (e)-(k). (e) **K’UK’-mo-7o-7AJAW** for

k’uk’=mo7 7ajaw ‘Quetzal-Macaw Lord’. (f) **k’u-mo-7o** for k’uk’=mo7 ‘Quetzal-

Macaw'. Only one **k'u** sign is used. Drawing from Bricker (1989:Figure 4.11). (g) **ka-tze/se-wa** for kasew 'month name', full spelling. Drawing from Bricker (1989:Figure 4.14). (h) **ka-tze/se** for kasew, spelling with final consonant deleted. Drawing from Bricker (1989:Figure 4.14). (i) Pot K1837: **ka-ka-wa** for *kākāw 'chocolate', full spelling. From Kerr (1989:116). (j) Pot BOD 185: **ka-ka** for *kākāw 'chocolate', spelling with final consonant deleted. From Robicsek and Hales (1981:200). (k) Pot K532: **ka** for *kākāw 'chocolate', spelling with deletion of CVC sequence. From Kerr (1989:18).

Figure 3.18. Possible evidence for commutativity rule. (a) **HUN-NAL-ye**. (b) **HUN-NAL-7e-ye**. In this examples it appears that **ye** and **7e-ye** are in free substitution, suggesting that **ye**, a CV phonetic sign, could be read as though it were a (7)VC sign. Drawings by this author.

Figure 3.19. Additional evidence for commutativity rule. (a) **K'INICH** for k'in-ich 'Sun-faced (Sun God)'. (b) Simojovel Shell, C1: **K'IN-ni-chi** for k'in=ich 'Sun-faced (Sun God)'. From Mathews (1994:Figure 7). (c) Unprovenanced carved human femur, at A3, A7, C1: **K'IN-chi** for k'in=chi 'sun-face (Sun God)', inscribed on bone rattle. From Coe (1973:146). (d) **K'IN-chi** for k'in=chi 'sun-face (Sun God)', inscribed on Early Classic conch shell trumpet. From Schele and Miller (1986). (e) **TUN-chi** presumably for tun-ich 'stone', inscribed on jade belt plaque from Costa Rica. Drawing by this author.

Figure 3.20. Some spellings of inflected verbs. Inflection of root transitive *chok 'throw down': (a) **7u-CHOK-wa** and **7u-cho-ko-wa**, possibly both 7u-chok-ow-Ø(+a) (3sERG-throw.down-CMP-3sABS(+ENCL)) 's/he threw it down (here)'. (b) **7u-CHOK**, possibly 7u-chok-o-Ø (3sERG-throw.down-CMP-3sABS(+ENCL)) 's/he threw it down'. (c) **CHOK-wa**, possibly chok-(o)w-Ø-Ø(+a) (throw.down-AP-CMP-3sABS(+ENCL)) 's/he threw (down) here'. (d) **CHOK**, possibly cho[h]k-Ø-Ø (throw.down[MPASS]-CMP-3sABS) 'it was thrown down'. (e) **CHOK-(k)a-ja**, possibly cho([h])k-aj-Ø-Ø(+a)

(throw.down([MPASS])-PASS-CMP-3sABS) 'it was thrown down (here)'. (f) **ti-CHOK-(k)o**, possibly ti+chok-o(l) (PREP+throw.down-PARTC) 'throwing (down)'. Inflection of root intransitive *hul 'to arrive (here)': (g) **hu-li**, possibly for hul-i-Ø (arrive.here-CMP-3sABS) 's/he/it arrived here'. (h) **hu-li-ya**, possibly for hul-iy-Ø(+a) (arrive.here-CMP-3sABS(+ENCL)) 's/he/it arrived here'. (i) **hul-(l)i-ya**, spelled with a CVC sign. (j) **(hu-)hul-ya**, possibly for hul-(i)y-Ø(+a), underlyingly /hul-i-Ø(+a)/. (k) **7AK'-ta-ja**, possibly for 7ahk't-aj-Ø-Ø, underlyingly /7ahk'ot-aj-Ø-Ø/ (dance-IVZR-CMP-3sABS) 's/he danced'. (l) **7AK'-ta**, possibly for 7ahk't-a(j)-Ø-Ø 's/he danced', underlyingly same as previous example. Drawing of Dos Pilas Stela 2 by Stephen Houston.

Figure 3.21. Positional verbs. (a) **CHUM-wa-ni**, possibly for chum-wan-i-Ø 's/he sat', on Tortuguero Monument 6. Monument 6. Both drawings by Ian Graham.

Figure 3.22. Typology of antipassive constructions based on Lacadena (1998) and Mora-Marín (1998, 2001). Incorporative antipassive clauses: (a)-(b). Absolutive antipassive clauses: (c)-(e). Agentive antipassive clauses: (f)-(g). Antipassive nominalization: (h).

(a) **YUWAL CHOK-wa-ch'a-ji** for yuwal chok-(o)w-Ø-Ø(+a)=ch'aj (CONJ throw.down-AP-CMP-3sABS(+ENCL)=incense.drops) 'and then he incense-threw'. (b) **CHOK-wa-ch'a-CH'AJ CHAK-b'i-? 7a-ku** for chok-(o)w-Ø-Ø(+a)=ch'aj chak-? 7ahk (throw.down-AP-CMP-3sABS(+ENCL)=incense.drops great/red-? turtle) 'Great-? Turtle incense-threw'. (c) **YAX-ch'a-T712-wi SAK-K'AN-WITZ** for yäx+T712-w-i-Ø sak-k'an-witz for (first+T712-APASS-CMP-3sABS white-precious-mountain) 'White Precious Mountain T712ed for the first time'. (d) Copan Altar 157: **7u-CHOK-no-ma** for 7u-chok-n-om(+a) (3sERG-throw.down-APASS-POT) 's/he would throw.down'. Drawing from Schele and Grube (1988:Figure 1). (e) Oblique patient: **7u-7UK'-ni ti-ka-la-ka^{2X}-wa PAWATUN K'IN-7AJAW** for 7uk'-n-i-Ø ti+kal-a(l)=käkäw Pawahtun K'in 7ajaw (drink-APASS-CMP-3sABS PREP+shake-PARTC=chocolate Pawahtun K'in 7ajaw) 'Pawahtun K'in 7ajaw(Agent) drank of/from the alcoholic chocolate(Patient)'. (f)

ha-7i TZAK-wi-ya for ha7-Ø-i tzak-(a)w-iy-Ø(+a) (PRO-3sABS+ENCL conjure-APASS-CMP-3sABS(+ENCL)) ‘He (is the one who) conjured (it)’. (g) **ha-7i TZAK-wi-ya** [War Serpent] for ha7-Ø-i tzak-(a)w-iy-Ø(+a) [War Serpent] (PRO-3sABS+ENCL conjure-APASS-CMP-3sABS(+ENCL) [War Serpent]) ‘He (is the one who) conjured the War Serpent’. (h) **7u-CHOK-wi 7AJ-wo-sa** for 7u-chok-(o)w-i(l) 7aj+wos(-a) (3sERG-throw.down-APASS-POSS PROCL+Wos(a)) ‘the throwing of Mr. Wos(a)’ (i.e., ‘the throwing’ that he performed).

Figure 3.23. Independent and possessed absolutive antipassives. (a) Independent, Copan Monument 157: **7u-to-ma 10-7AJAW 8-SAK 7u-CHOK-no-ma** for 7u[h]t-om-Ø 10-7ajaw 8-sak 7u-chok-(o)n-om(+a) (finish[MPASS]-POT-3sABS 10-7ajaw 8-ch’en 3sERG-throw.down-APASS-POT(+ENCL)) ‘It would be finished on 10-Ahau 8-Chen. He would throw down’. (b) Possessed and nominalized antipassive clause (functions as subject of verb 7uht-om), Naranjo Altar 1:J9-J11: **7u-to-ma 7u-CHOK-wi 7AJ-wo-sa 5-7AJAW 3-CH’EN** for 7u[h]t-om-Ø 7u-chok-(o)w-i(l) 7aj+wos(-a) (finish[MPASS]-POT-3sABS 3sERG-throw.down-APASS-POSS PROCL+Wos(a)) ‘Mr. Wos(a)’s throwing would be finished on 5-7ajaw 3-Ch’en’.

Figure 3.24. Possible absolute/generic and possessed forms of nouns, according to Zender (2001). The epigraphic transcription and linguistic transliteration for each form is my own based on Zender’s analysis. (I do not think that disharmonic spellings signal a preceding complex vowel). (a) Absolute form: **7u-ha-ja** for 7uh-aj ‘bead’ (Zender’s 7uh-aj). (b) Possessed form: **yu-(7)UH-li** for y-uh-VI ‘bead’. (It is not clear what is the vowel of the -VI suffix. The glyph always takes li, but modern Ch’olan languages have -aj ~ -äl for this word.) (c) Absolute form: **tu-pa-ja** for tup-aj ‘earring’ (Zender’s tup-aj). (d) Possessed form: **7u-tu-pa** for 7u-tup ‘his/her/its earring’. (e) Absolute form: **TI7-si** for ti7-is(?) ‘mouth’. (Zender’s **TI7-IS ti7-is**). (f) Possessed form: **7u-TI7** for 7u-ti7 ‘its mouth’. (g) Absolute form: **7o-la-si** for 7ol-as ‘heart’ (Zender’s **7o-l(a)-IS** for 7ol-is). (h) **yo-(7)OL-la** for y-ol(-VI) ‘his/her/its heart’. All the drawings are from Zender

(2001).

Figure 3.25. Expression of oblique roles as complements to preposition ti(7). (a)

Oblique addressee noun phrase: **ya-la-hi/ji-ya hu-b'i ti-chi-hi/ji** for y-äl-a-Ø+hiv(+a) hub' ti+chij (3sERG-say-CMP-3sABS+ENCL(+ENCL) conch.trumpet PREP+deer) 'The Conch Trumpet(Speaker) said to Deer(Addressee)'. Drawing by Linda Schele from Schele and Miller (1986:159, Plate 59a). (b) Oblique patient noun phrase: **7u-7UK'-ni ti-ka-la-ka^{2X}-wa PAWATUN K'IN-7AJAW** for 7uk'-n-i-Ø ti+kal-a(l)=käkäw Pawahtun K'in 7ajaw (drink-APASS-CMP-3sABS PREP+shake-PARTC=chocolate Pawahtun K'in 7ajaw) 'Pawahtun K'in 7ajaw(Agent) drank of/from the alcoholic chocolate(Patient)'. (c) Expression of Causer: **chu-ku-ja b'a-wa-WAY-b'i 7u-KAJ-hi/ji-ya 7AJ-CHAK-ma-xi** for chu[h]k-aj-Ø-Ø(+a) b'ah=wäyab' 7u-kaj-iy(-Ø)(+a) 7aj+chak-mäx (seize[MPASS]-PASS-CMP-3sABS(+ENCL) top/first=sorcerer 3sERG-do/cause-CMP/ENCL(-3sABS)(+ENCL) PROCL+red-spider.monkey) 'The Top Sorcerer(Patient) was captured. It was done/the.doing by/of Mr. Red Spider Monkey(Causer)'. (d) **na-wa-ja 7u-B'AK-ki ti-ya-(7)AJAW** for na[h]w-aj-Ø-Ø(+a) 7u-b'ak-i(l) ti+y-ajaw (adorn[MPASS]-PASS-CMP-3sABS(+ENCL) 3sERG-prisoner-POSS PREP+3sERG-lord) 'His prisoner(Patient) was adorned for/by his.lord/the.captain(Benefactive/Agent)'. (e) **7u-CHOK-wa ch'a-hi** [Copan Lord] (7u-chok-(o)w-Ø(+a) ch'aj [Copan Lord]) '[Copan Lord] threw down incense'. (f) **7u-CHOK-wa ch'a-hi** ([Copan Lord] 7u-chok-(o)w-Ø(+a) ch'aj) '(It was) [Copan Lord] (who/that) threw down incense'. (g) **CHOK-wa ch'a-hi** [Copan Lord] (chok-(V)w-Ø(+a)=ch'aj [Copan Lord]) '[Copan Lord] incense-threw'. (h) **ha-7i 7u-b'u-t'u-wa** [Palenque Lord] (ha7-Ø_i(+i) 7u-b'ut'-uw-Ø_i(+a) [Palenque Lord]) 'As for him_i, [Palenque Lord] buried him_i'. (i) **ha-7o-b'a pa-sa-no-ma wa-ya** (ha7-ob'(+a)

Figure 3.26. Word orders attested in CLM texts. (a) VS: **CHAM-ya 7ix-TUN(-ni)-ka-ya-ka-wa** (chäm-(a)y-Ø(+a) 7ix+tun kay-kaw) 'Lady Tun Kaya-kawa died'. (b) VOA: **7u-CHOK-wa ch'a-hi** [Copan Lord] (7u-chok-(o)w-Ø(+a) ch'aj [Copan Lord]) '[Copan Lord] threw down incense'. (c) AVO: [Copan Lord] **7u-CHOK-wa ch'a-hi** ([Copan Lord] 7u-chok-(o)w-Ø(+a) ch'aj) '(It was) [Copan Lord] (who/that) threw down incense'. (d) V=OS (Antipassive clause): **CHOK-wa ch'a-hi** [Copan Lord] (chok-(V)w-Ø(+a)=ch'aj [Copan Lord]) '[Copan Lord] incense-threw'. (e) OVA: **ha-7i 7u-b'u-t'u-wa** [Palenque Lord] (ha7-Ø_i(+i) 7u-b'ut'-uw-Ø_i(+a) [Palenque Lord]) 'As for him_i, [Palenque Lord] buried him_i'. (f) AVO: **ha-7o-b'a pa-sa-no-ma wa-ya** (ha7-ob'(+a)

(d) V=OS (Antipassive clause): **CHOK-wa ch'a-hi** [Copan Lord] (chok-(V)w-
 Ø(+a)=ch'aj [Copan Lord]) '[Copan Lord] incense-threw'. (e) OVA: **ha-7i 7u-b'u-t'u-
 wa** [Palenque Lord] (ha7-Ø_i(+i) 7u-b'ut'-uw-Ø_i(+a) [Palenque Lord]) 'As for him_i,
 [Palenque Lord] buried him_i'. (f) AVO: **ha-7o-b'a pa-sa-no-ma wa-ya** (ha7-ob'(+a)
 pas-(a)n-om-Ø(+a) wäy) 'It was they/(these.ones) who would open the wäy'.

Figure 3.1.

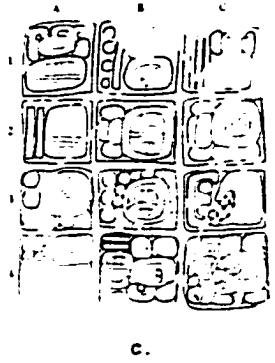
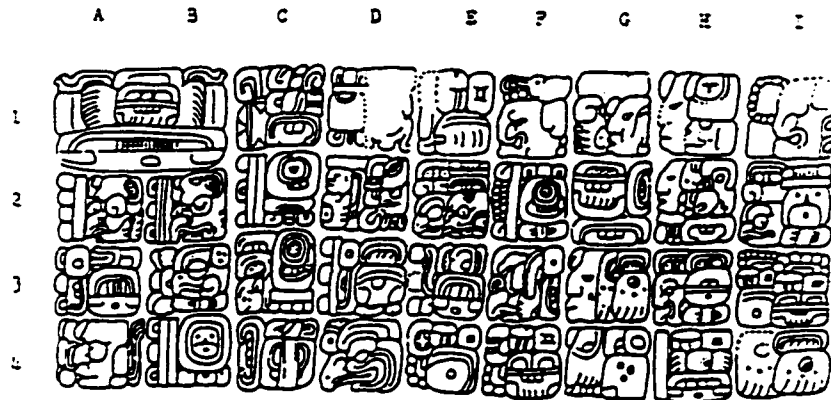


Figure 3.2.



Yaxchilan Stela 11, main text (drawing by Linda Schele);

below, a diagram of the same text, showing its reading order

	A	B	C	D	E	F	G	H	I
1		1	8	9	16	17	24	25	32
2	2	3	10	11	18	19	26	27	33
3	4	5	12	13	20	21	28	29	34
4	6	7	14	15	22	23	30	31	35

Figure 3.3.

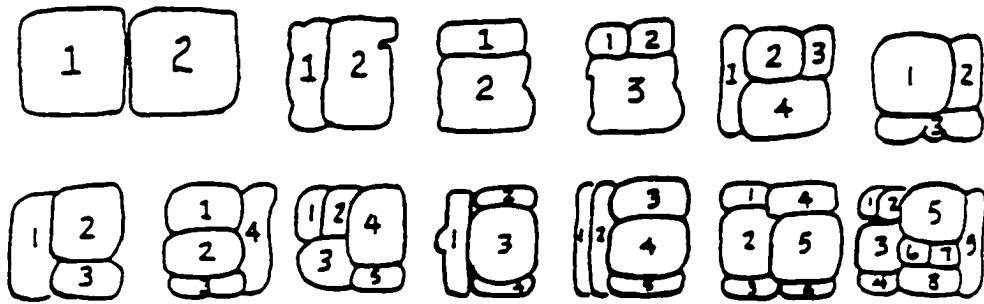
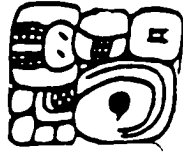


Figure 3.4.



a.



b.

Figure 3.5.



a.



b.



c.



d.

Figure 3.6.



a.



b.

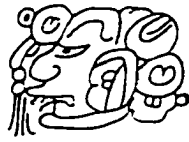


c.



d.

Figure 3.7.



a.



b.



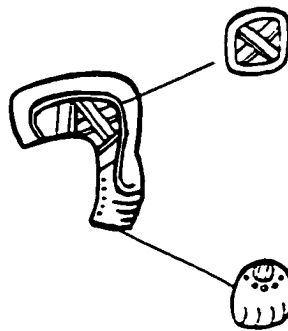
c.



d.



e.



f.

k'a

b'a

Figure 3.8.



a



b



c

Figure 3.9.



a.



b.



c.

Figure 3.10.

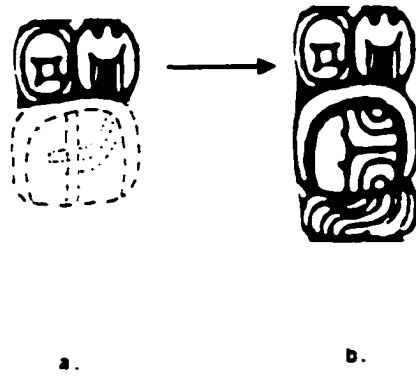


Figure 3.11.



a.



b.



c.



d.

Figure 3.12.

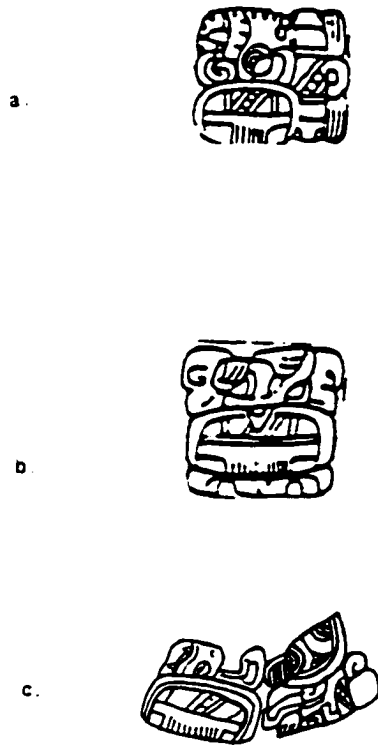


Figure 3.13.

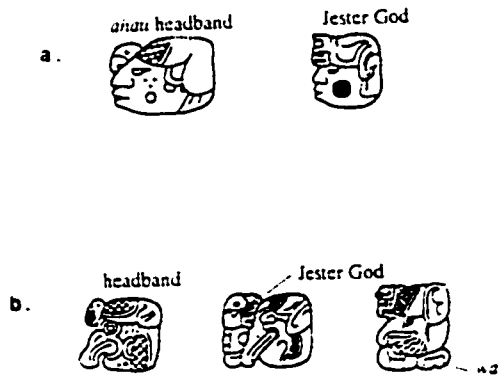


Figure 3.14.



a.



b.



c.

Figure 3.15.



bala-m



b.



c.



ba-m - m2



d.



e.



ba-m - m2

a.

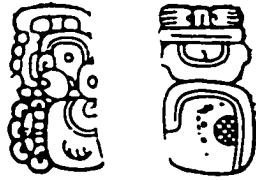


f.



g.

Figure 3.16.



a.



b.



c.



d.



e.



f.

Figure 3.17.



a.



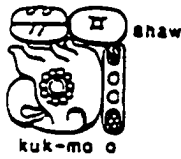
b.



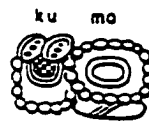
c.



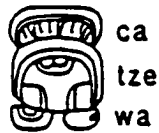
d.



e.



f.



g.



h.



i.



j.



k.

Figure 3.18.



a.



b.

Figure 3.19.



a.



b.



c.



d.



e.

Figure 3.20.

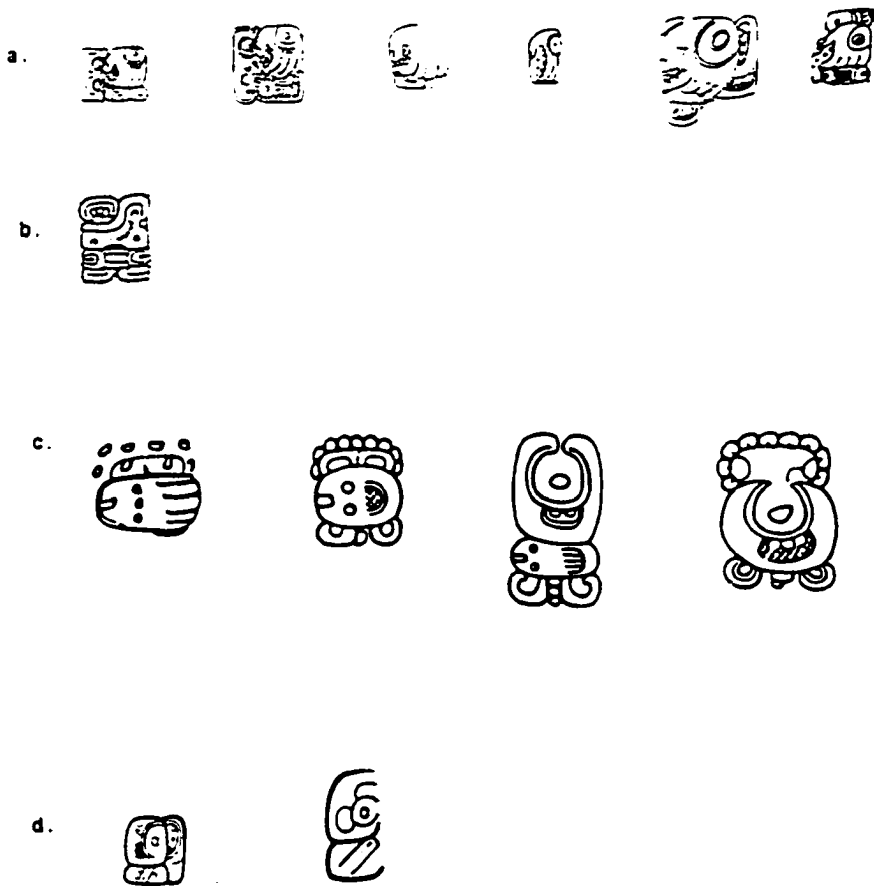


Figure 3.21.



a.



b.

Figure 3.22.

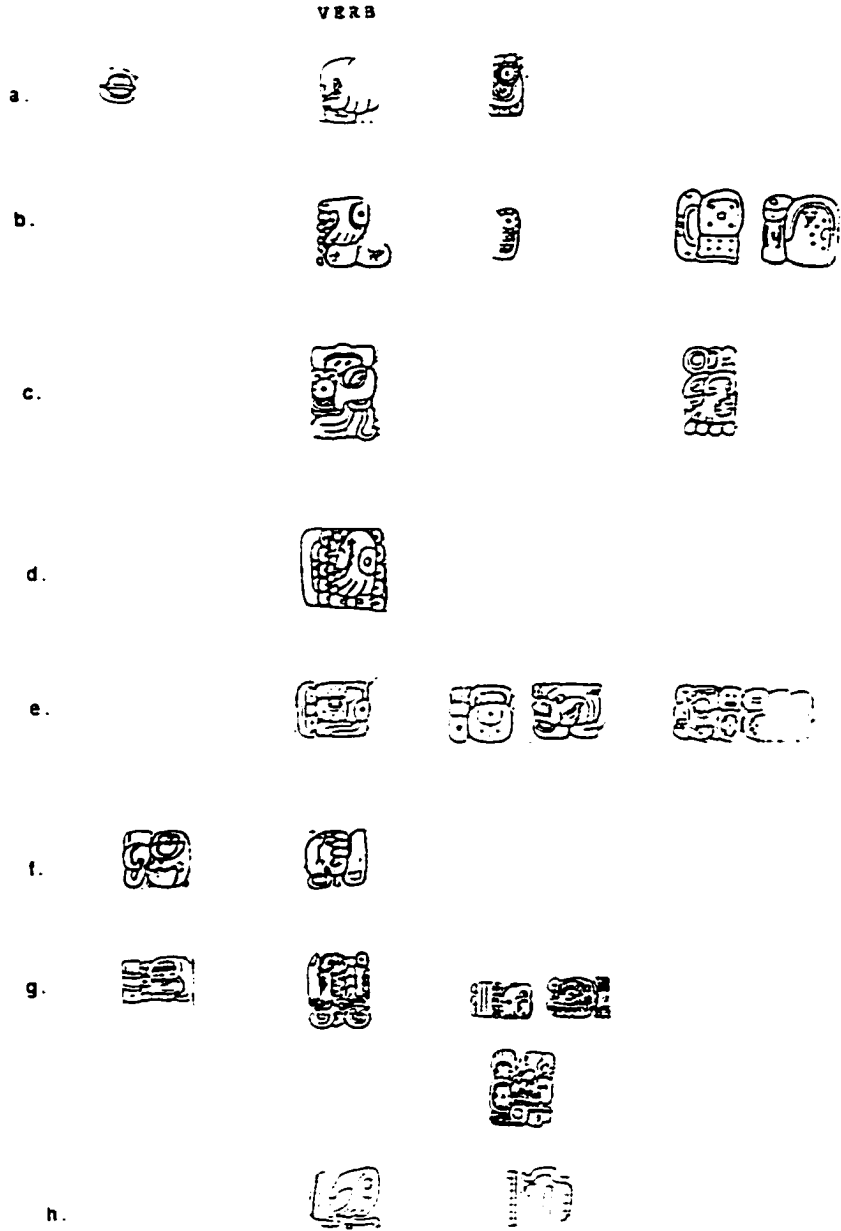


Figure 3.23.

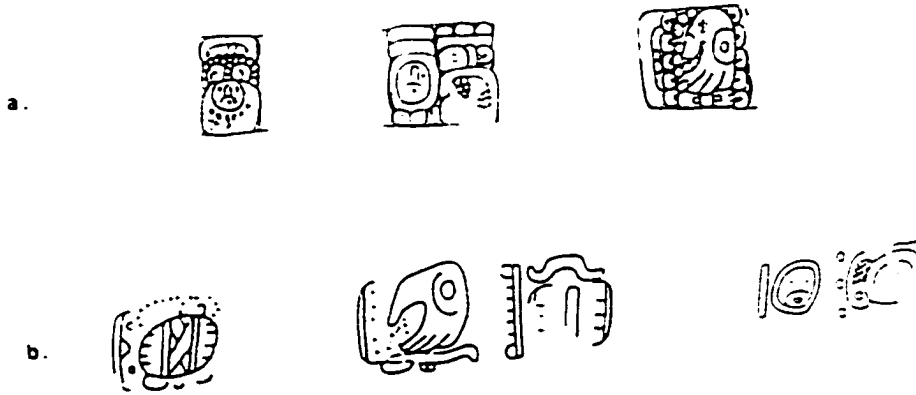


Figure 3.24.



a.



b.



c.



d.



e.



f.



g.



h.

Figure 3.25.

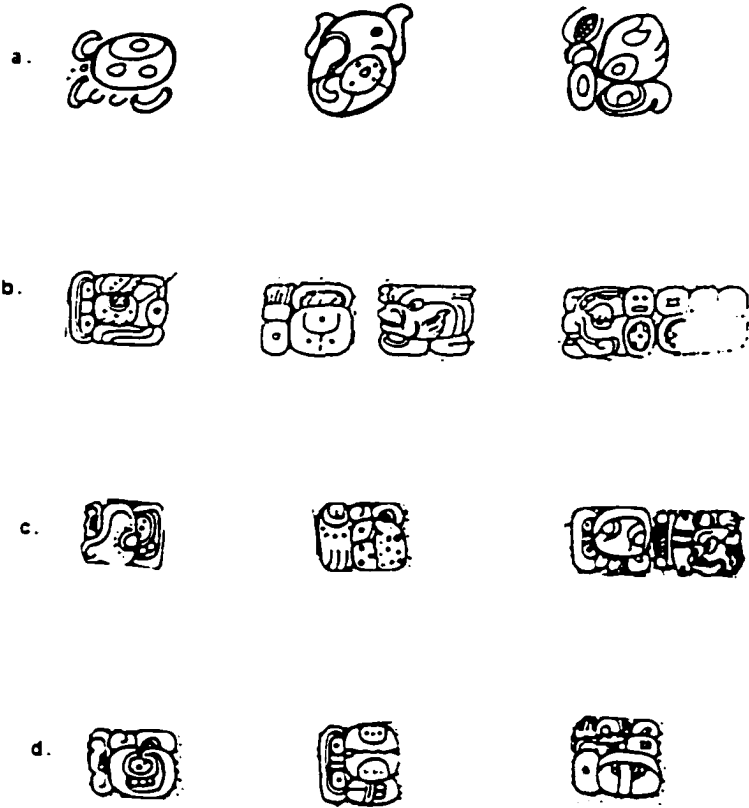
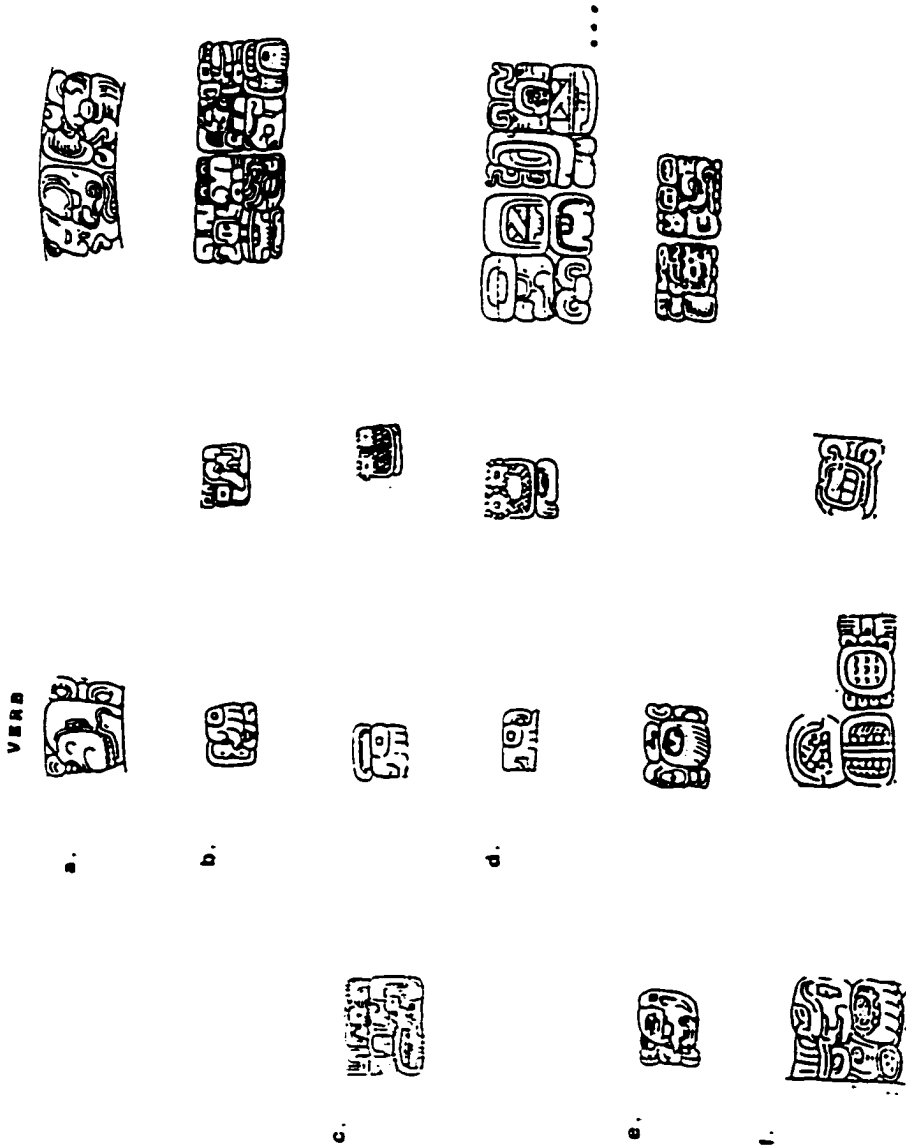


Figure 3.26.



CHAPTER IV: LIST OF FIGURES

Figure 4.1. The PSS. From Houston, Stuart, and Taube (1989:Figure 1).

Figure 4.2. Inscribed Early Classic obsidian earrings from Altun Ha, Belize. Glyph A is read **7u-tu-pa**, for **7u-tup** ‘his earring’, and is followed by the owner’s name (B-C), rendering ‘(It is) the earring of [B-C]’. Glyphs D-F may show the same structure. Glyph D may be a possessed noun as well, and glyphs E-F may refer to its possessor.

Figure 4.3. Four-way emic nomenclature of pottery containers according to Houston, Stuart, and Taube (1989). (a) **(7u-)la-ka** for **(7u-)lak** ‘(his/her) dish’. (b) **(7u-)ja-wa-TE7** for **(7u-)jawan=te7** ‘(his/her) tripod plate’. (c) **yu-k’i-b’i** for **(y-)uk’-ib’** ‘(his/her) cup’. From Houston, Stuart, and Taube (1989:2).

Figure 4.4. The Initial Sign of the dedicatory formula. **Chahk** and FISH variants: (a)-(e). MAW.OF.UNDERWORLD variant: (f)-(g). TAMALE variant: (h)-(i). T617 variant: (j)-(o). (a) Pot K1183: **7a-IS**. From Kerr (1989:65). (b) Pot K2695: **7a-IS**. From Kerr (1990:255). (c) Pot K4689: **7a-IS-ya**. From Kerr (1994:592). (d) Pot K3844: **7a-ya-IS**. From Kerr (1992:443). (e) Tikal Stela 26, zB1: **7a-ya-IS**. From Jones and Satterthwaite (1982:Figure 44). (f) Pot K5722: **7a-IS-ya**. From Kerr (1997:819). (g) Pot K1440: **7IK’-WAY(-ya)**. From Kerr (1997:83). (h) Pot K1398: **7a-IS-ya**. From Kerr (1989:81). (i) Pot K1440: **7IK’-WAY(-ya)**. From Kerr (1989:83). (j) Balakbal Stela 5: **IS-ya**. Drawing from Justeson and Mathews (1990). (k) Chichen Itza Cenote tubular bead: **IS-la**. After photograph in Proskouriakoff (1974:110-111, Plate 45-3) and visit to the Peabody Museum. (l) Tikal Stela 31: **IS-ya-la**. Drawing in Jones and Satterthwaite (1982). (m) Tikal Stela 31: **7a-IS-ya-la**. Drawing in Jones and Satterthwaite (1982). (n) Tikal bowl: **la-IS-ya**. From Culbert (1993). (o) Pot: **7a-la-IS-ya**.

Figure 4.5. Contexts where the IS, if representing Ch’olan-Tzeltalan ***7ay** ‘existential particle’, could be used for predicative possession. (a) Xcalumkin Jamb 6: **7a-IS-ya 7u-wo-jo-li** [PERSONAL.NAME] ‘[PERSONAL.NAME] has glyphs’. Drawing by Ian

Graham. (b) Xcalumkin Capital 5, A-B: **7a-IS-ya 7u-wo-jo-li** ‘S/he/it has glyphs’.

Drawing by Eric von Euw. (c) Vessel 55: **7a-IS-ya yu-(7)UH-li ti-WINIK-ki HUN-b’a-ka-b’a** ‘Winik Hun B’akab’ has a bead/necklace’. From Robicsek and Hales (1981:34).

Figure 4.6. Three different readings of the GOD.N glyph, the Old God glyph.

PAWATUN, with obligatory net hat, optional infixed **K’AN** sign, and

TURTLE.CARAPACE substitution: (a)-(b). From MacLeod (1990:Figures 4.6d,g).

HO7 ‘five’, with a **HAB’/TUN** sign worn as a headdress: (c). From MacLeod

(1990:Figure 4.6h). **MAM** ‘grandson, grandfather, ancestor’: (d)-(e). (d) From Delataille pot, after Berjonneau and Sonnery (1985). (e) Pomona Tablet 8, drawing by I. Graham.

Figure 4.7. GOD.N glyph as dedicatory verb. GOD.N verb with netted hat: (a)-(f).

GOD.N verb with fishlike attributes: (a)-(c). GOD.N verb with bird in hat: (b), (d).

GOD.N verb identical to **MAM** glyph: (g)-(i). (a) Carved bowl from Berjonneau and

Sonnery (1985:351, 355). (b) Carved bowl from Berjonneau and Sonnery (1985:351,

355). (c) Pot K623 from Kerr (1989:25). (d) Unprovenanced mace head drawn by J.

Montgomery. (e) Pot K1398 from Kerr (1989:81). (f) Jauncy Vase, drawing by J.

Taschek, from Kerr (1992:504). (g) Yaxchilan Lintel 25 from Graham (1979:56). (h)

Tikal pot from Culbert (1993:Figure 19b). (i) Pot K1383 from Kerr (1989:78).

Figure 4.8. Spellings and inflections of GOD.N and STEP dedicatory verbs. (a) Pot

K1837: **hu-GOD.N[yi]**. From Kerr (1989:116). (b) **hu-STEP[yi]**. (c) **hu-GOD.N[yi]-yi**.

(d) **hu-STEP[yi]-yi**. (e) Dos Pilas West Stairs:A5b. **hu-li** ‘s/he arrived here’. Drawing

by Stephen Houston. (f) Dos Pilas West Stairs B3a. **hu-STEP**. Drawing by Stephen

Houston. (g) Late Classic spelling of STEP glyph as **hu-STEP-ya**. (h) **7u-GOD.N-yi**.

From MacLeod (1990:Figure 4.6a). (i) **7u-7u-yi**. (j) SKULL variant of the GOD.N verb:

7u-SKULL. Both (i) and (j) from MacLeod (1990:Figure 4.6b). (k) **7u-GOD.N**.

Figure 4.9. GOD.N verb spelled as GOD.N-yi or GOD.N. (a) Copan 9N-8 Bench:

GOD.N-yi yo-(7)OTOT [PERSONAL.NAME]. (b) Yaxchilan Lintel 26: **GOD.N-yi yu-**

BAT.HEAD [PERSONAL.NAME]. (c) Pot K6997: **7a-IS GOD.N 7u-k’i-b’a**. From

Kerr (1997:836).

Figure 4.10. Clauses with GOD.N verb spelled as **7u-GOD.N** or **7u-GOD.N-?**. (a) Copan 9N-8 Bench: **7u-GOD.N 7UH/7u** [PROPER.NAME]. (b) Comacalco Brick: **7u-GOD.N-? 7u-la-ka** [PERSONAL.NAME].

Figure 4.11. Evidence for T'AB' reading of the verbal GOD.N and STEP glyphs. (a) **?-b'a-yi**. Ikil. (b) Painted Capstone from Chichen Itza: **?-b'a**. Drawing from Schele and Grube (1995:197). (c) Pot K4958: FOOTPRINT-STEP. From Kerr (1992:624).

Figure 4.12. SPOTTED.BAT.HEAD glyph in the 'carving/incising' context. (a) Xcalumkin Panel 5:A2-B2: **7u-ti-ya 7u-SPOTTED.BAT.HEAD-li**. Drawing by E. v. Euw. (b) Xcalumkin Panel 3:A1-A3. **yu-SPOTTED.BAT.HEAD-li** [PERSONAL.NAME]. Drawing by E. v. Euw. (c) Yaxchilan Lintel 4.13:H2: **GOD.N-li yu-lu-SPOTTED.BAT.HEAD** [PERSONAL.NAME]. Drawing by Ian Graham.

Figure 4.13. Examples of SPOTTED.BAT.HEAD suggestive of logographic value. (a) Piedras Negras Stela 15: **7AJ-7u-SPOTTED.BAT.HEAD-lu**. Drawing by John Montgomery. (b) Unprovenanced pot: **7AJ-7u-SPOTTED.BAT.HEAD-lu**. Drawing by unknown artist. (c) Xcalumkin Column 2: **7AJ-SPOTTED.BAT.HEAD-la**. Drawing by Ian Graham. (d) Usumacinta Looted Glyphic Panel: **YUWAL-7u-SPOTTED.BAT.HEAD-lu-yi**. Drawing by D. Stuart. (e) Site Q incised panel: **7u-SPOTTED.BAT.HEAD-lu-ja/AJ**. Drawing from MacLeod (1990:Figure 6.7).

Figure 4.14. Drinking cup glyph with **b'i** and **b'a** to spell the consonant of the instrumental suffix **-ib'**. (a) **yu-T77-b'i** on Early Classic inscribed bowl. (b) **yu-T77-b'a** on same Early Classic inscribed bowl. Both drawn after photograph in Coe (1973:110).

Figure 4.15. Spelling variation for the drinking cup glyph, underlying /y-DRINK-ib'/, where DRINK is either Yukatekan ***7uk'** or Ch'olan ***7uch'**. (a) T61.77:585 **yu-T77-b'i** (K 504). (b) T61.236:585 **yu-T236-b'i**. After Grube (1990:Figure 1a). (c) T61.128:501 **yu-T128-b'a** (K 1728). (d) T61.128:501.585 **yu-T128-b'a-b'i** (K 1226). (e) T1.77:585 **7u-T77-b'i** (K 4379). (f) T1.77:585 **7u-T77-b'a** (K 6997). (g) T1.128:501 **7u-T128-b'a**.

After Robicsek and Hales (1981:170, Vessel 140).

Figure 4.16. PSS structure types 1-4. (a) Type 1: Unpossessed label: **7u-T128-b'a** '(It is a) drinking cup'. BOD 140 from Robicsek and Hales (1981). (b) Type 2: Without possessor: **7u-ja-yi yu-k'i-b'i** '(It is) his thin one, his drinking cup'. Kerr No. 5466. (c) Type 3: **yu-k'i-b'i** [POSSESSOR] '(It is) the cup of [Possessor]'. Kerr No. 4332. (d) Type 4: **NA(HA)L ja-yi 7u-K'UHUL-K'AB'A7(-b'a) yu-k'i-b'i** 'Na(ha)l jay is the divine name of his cup'. Uaxactun pot.

Figure 4.17. PSS structure type 5. Possessed label followed by complement prepositional phrase: **yu-k'i-b'i ta-NA(HA)L-la TE7-le ka-wa** '(It is) his cup for na(ha)l- and te7-el-type chocolate'. BOD 30 from Robicsek and Hales (1981:25).

Figure 4.18. PSS structure type 6. (a) **yu-k'i-b'i ta-NA(HA)L TE7-le ka-wa** [POSSESSOR] '(It is) the cup for na(ha)l- and te7-el-type chocolate of [Possessor]'. (b) **yu-k'i-b'i ta-TE7-li ka-wa** [POSSESSOR] '(It is) the cup for te7-el-type chocolate of [Possessor]'.

Figure 4.19. PSS structure type 7. PREDICATE + Type 6: **7a-7AY-ya GOD.N yu-k'i-b'i ti-yu-ta ka-wa** [POSSESSOR] 'The cup for y-ut-a(l)-type chocolate of [Possessor] was GOD.Ned'. Pot K2085 from Kerr (1989:214).

Figure 4.20. PSS structure types 8 and 9. (a) Type 8, {Type 7} {Type 3}: **7a-7AY GOD.N 7u-k'i-b'a | yu-k'i-b'i** [POSSESSOR] 'The cup was GOD.Ned | (It was) the cup of [Possessor]'. Pot K6997 from Kerr (1997). (b) Type 9, {Type 7} {Type 3}: **7AY-ya GOD.N 7u-k'i-b'i | na-ja-la yu-k'i-b'i ta-yu-ta NA(HA)L TE7-le ka-wa** [POSSESSOR] 'The cup was GOD.Ned | The cup for y-ut-a(l)-, na(ha)l-, and te7-el-type chocolate of [Possessor] was na(ha)l-ed'. Pot K4379 (Kerr 1994).

Figure 4.21. Type 10, 11, and 12 structures. (a) Type 10: **7a-7AY-ya tz'i-b'i na-ja hi-chi**. Pot K2285. (b) Type 11: **7a-7AY-ya tz'i-b'i na-ja hi-chi yu-k'i-b'i ta-yu-ta ka-wa** [POSSESSOR]. Pot K3433 from Kerr (1992). (c) Type 12: **7a-7AY-ya tz'i-b'i na-ja hi-chi | hi-chi yu-k'i-b'i ta-yu-ta ka-wa** [POSSESSOR]. Pot K3366 (Kerr 1992).

Figure 4.1.



Figure 4.2.

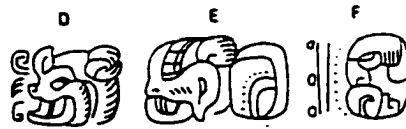
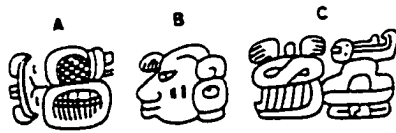
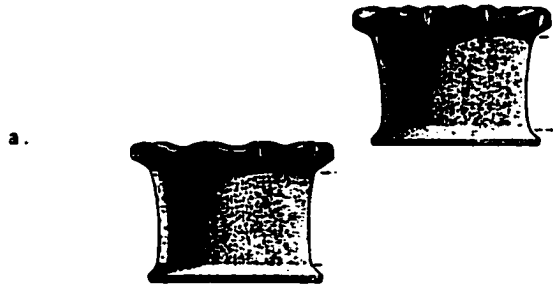


Figure 4.3.

(Not to scale)

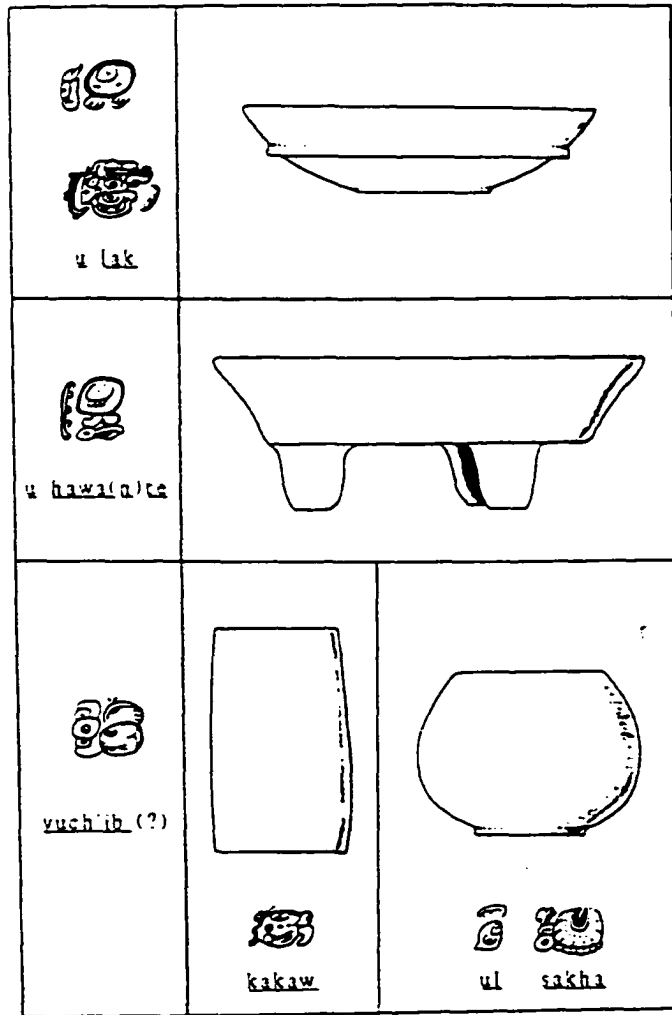


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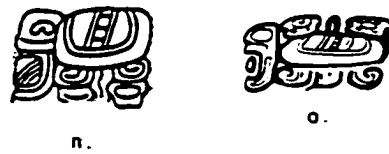
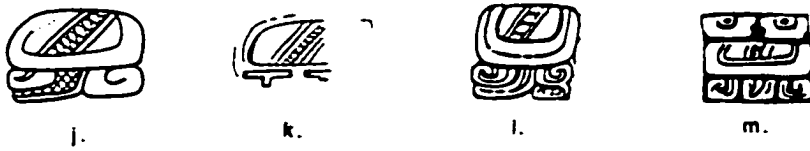
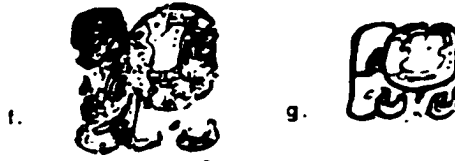
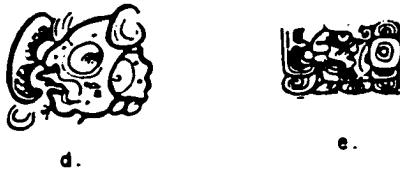
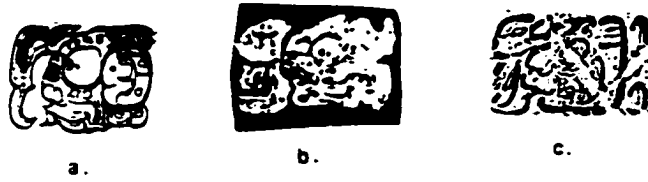


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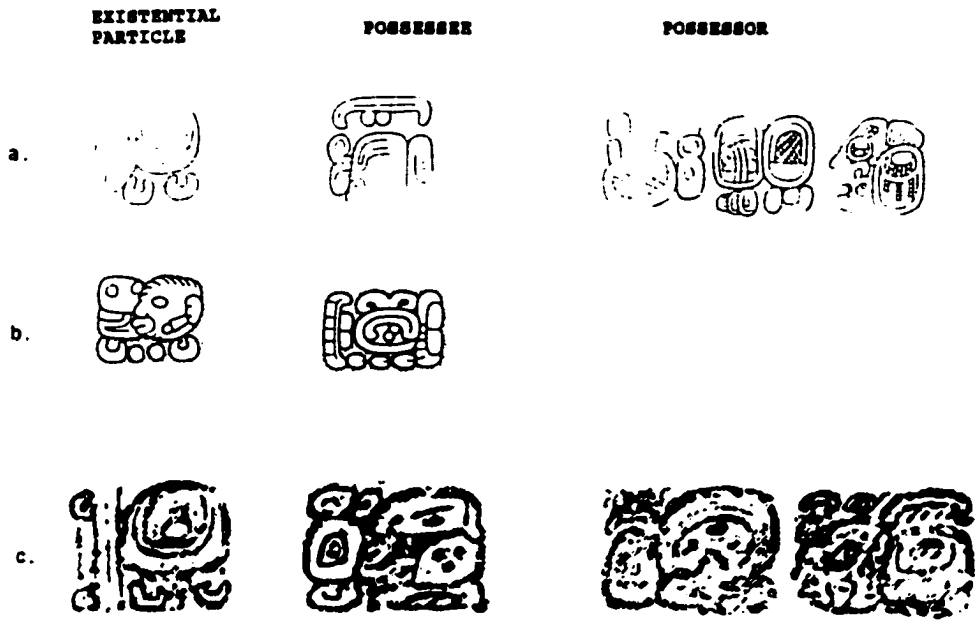
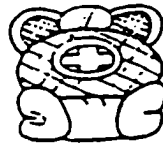


Figure 4.6.



a.



b.



c.



d.



e.

Figure 4.7.



a.



b.



c.



d.



e.



f.



g.



h.



i.

Figure 4.8.

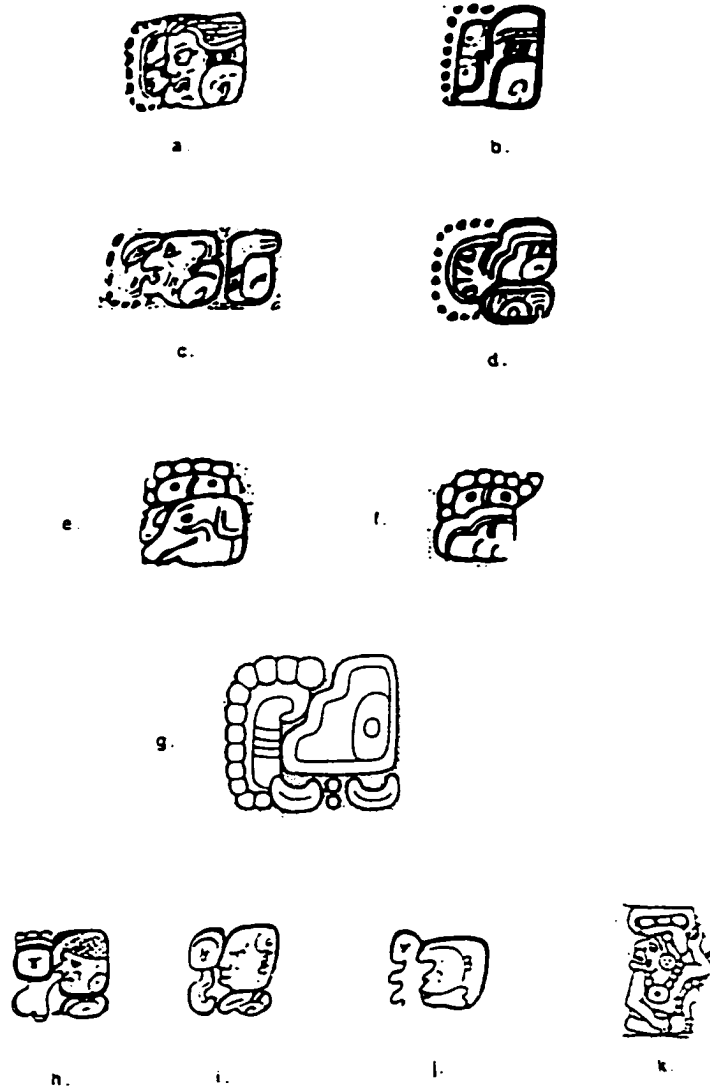


Figure 4.9.



Figure 4.10.

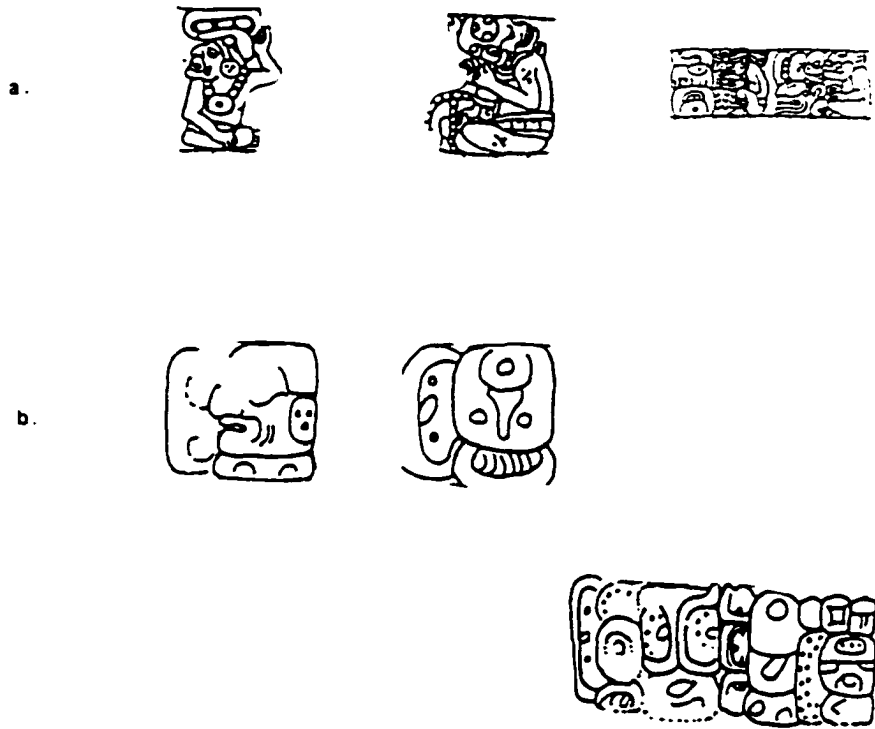


Figure 4.11.

a.



b.



c.



Figure 4.12.

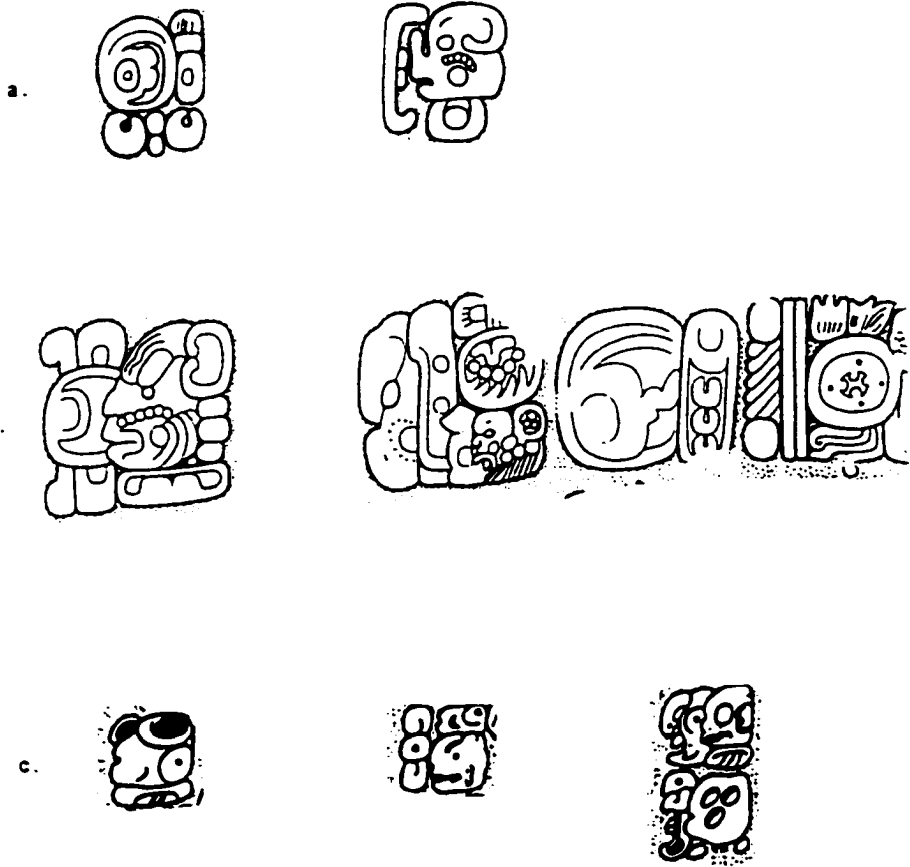


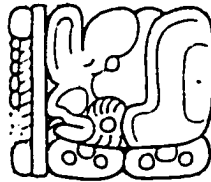
Figure 4.13.



a.



b.



c.

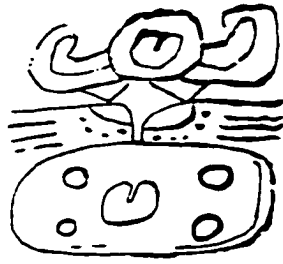


d.

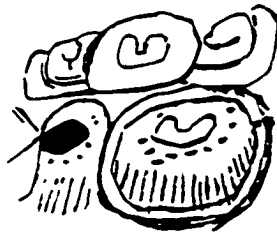


e.

Figure 4.14.



a.

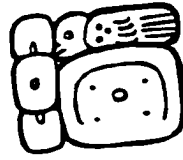


b.

Figure 4.15.



a.



b.



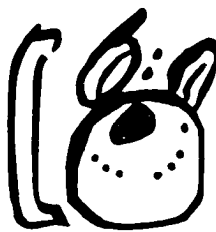
c.



d.



e.



f.

Figure 4.16.

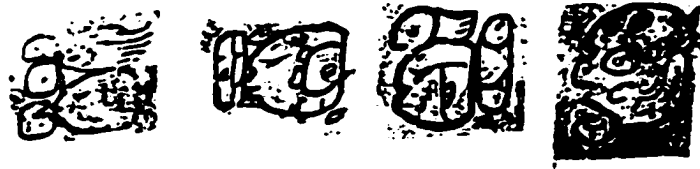


Figure 4.17.



Figure 4.18.

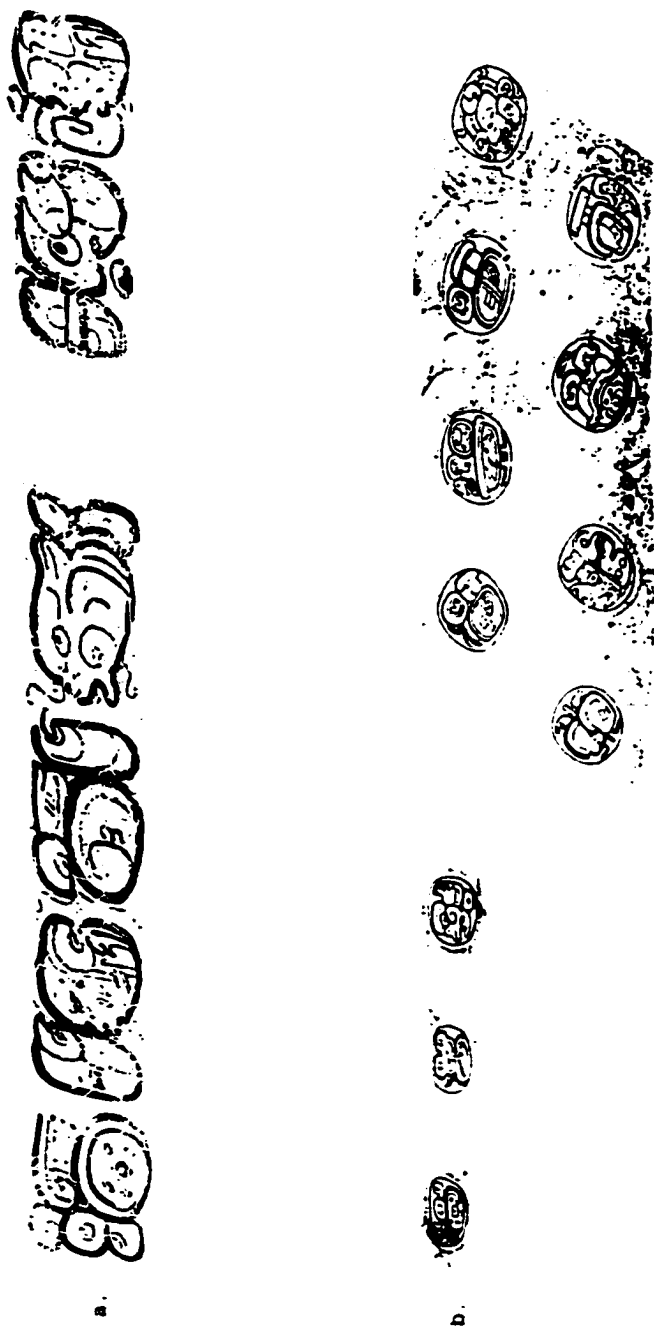


Figure 4.19.

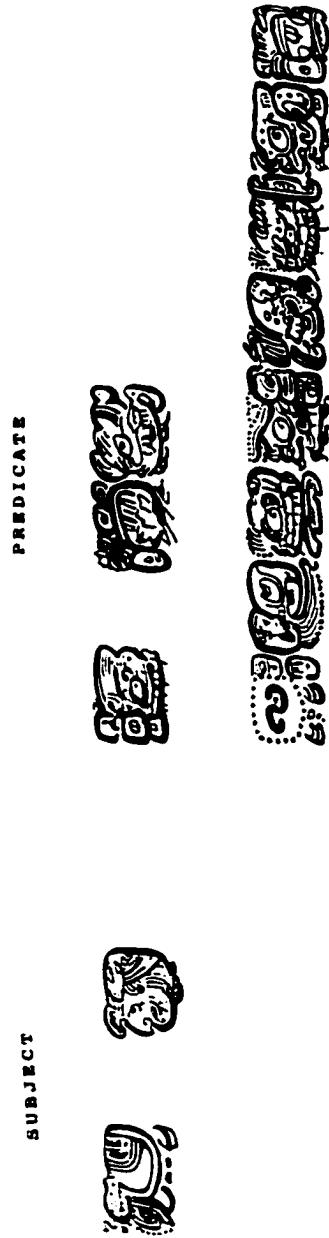


Figure 4.20.

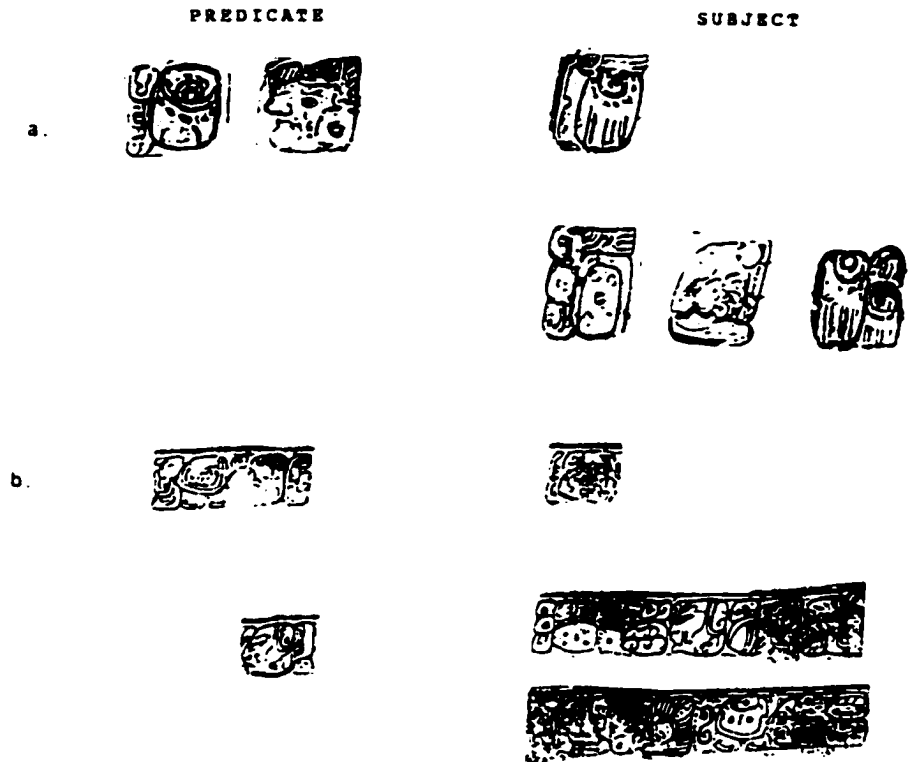
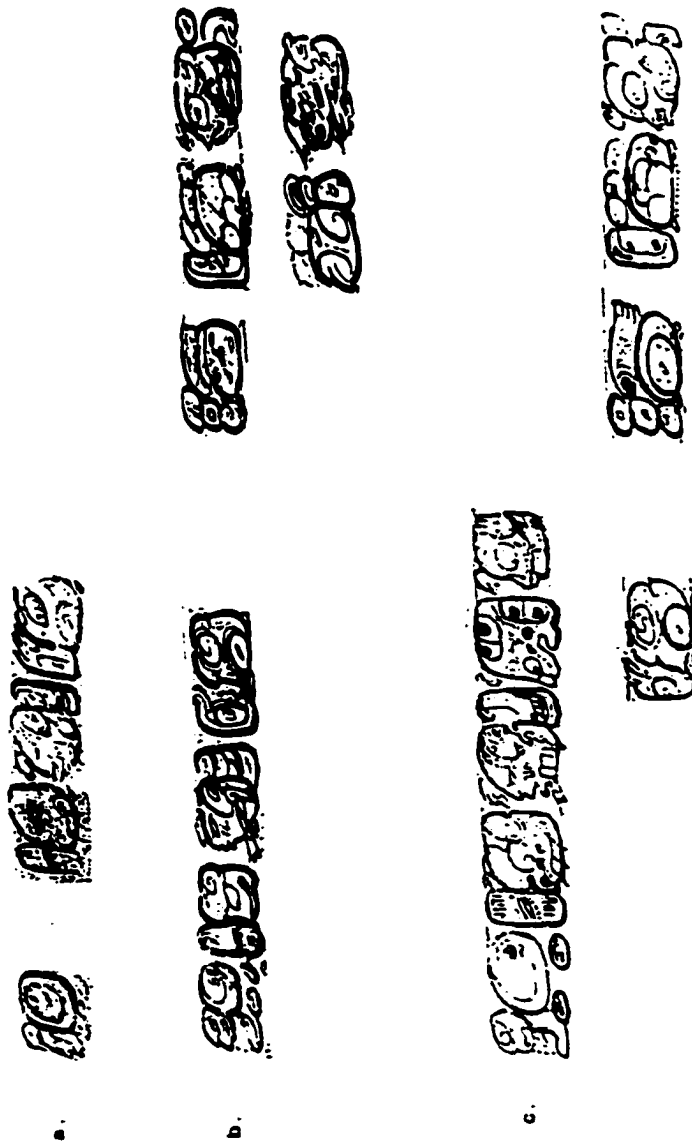


Figure 4.21.



CHAPTER V: LIST OF FIGURES

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(b) INS 4442: **7u-TZAK** for 7u-tzak-... 's/he conjure(s/d)'. Drawing by this author. (c) Rio Azul Plaque: **CHOK-wi** for chok-(o)w-i-Ø 's/he throws down'. Drawing by unknown author. (d) UNP jade plaque: **?hu-?le** for hul-e(y)-Ø. Drawing by this author. (e) INS 2007: **?-wi-ya** 's/he VERBed'. Drawing by this author. (f) INS 4440: **WAK-la-ja**. (g) **7u-CH'AM-wa** for 7u-ch'am-(a)w-Ø(+a) 's/he grabbed it (here/thusly)'. (h) UNP jade plaque: **7u-CH'AM 7u-TOK' 7u-PAKAL** for 7u-ch'am-Ø-Ø 7u-tok' 7u-pakal 's/he grabbed his/her flint, his/her shield'. Drawing by this author. (i)-(j) UNP jade plaque: **7u-KAJ-ji/hi** '(It is) his/her doing/cause' or 'S/he did/caused it'. Drawing by this author. (j) Nosara jade plaque: **tzi-ka TUN** for tzi[h]k-a-Ø-Ø tun 'a/the stone/year was recounted/counted'. (k) Rio Azul Plaque: **7OCH-HA7-ja/AJ** 'S/he water-entered'. Drawing by unknown author. (l) INS 4442: **K'AL-ja/AJ TUN/TUNICH-chi** 'The precious.stone/stone/year was wrapped'. (m) Rio Azul Plaque: **K'AL TUN** for k'a[h]l-Ø-Ø tun 'the stone/year was/got wrapped'. Drawing by unknown author.

Figure 5.12. Some possible glyphic labels for jade belt plaques. The T712

BLOODLETTER glyph: (a)-(f). (a) Jade Museum jade plaque: **7u-T712[841]-?ma**. Drawing by this author. (b) Jade Museum jade plaque: **T712...-li**. Drawing by this author. (c) Jade Museum jade plaque: **7u-T712[841]-li**. Drawing by this author. (d) Jade Museum jade plaque: **7u-T712[841]**. Drawing by this author. (e) Rio Azul plaque: **T712[841]**. This glyph is embedded in the iconography on the front side of the plaque. (f) Calakmul, Early Classic jade plaque: **ya-841-li**. Drawing by Joyce Marcus (Folan et al. 1995:325, Figure 14). (g) Jade Museum jade plaque: **na-7IK'** or **7IK'-na**. Drawing by this author. (h) Rio Azul plaque: **7u-ka-ya-ka-wa**. Drawing by unknown author. (i) Rio Azul plaque: **yu-k'e-sa**. Drawing by unknown author. (j) Jade Museum jade plaque: **ya-T840-li**. Drawing by this author. (k) Unprovenanced jade plaque reportedly from Costa Rica: **TUN/HAB'**. Drawing by this author.

Figure 5.13. Examples of T503 **7IK'(-NAL)** used as a label on jade plaques. (a) Palenque. (b) Dumbarton Oaks jadeite celt. (c) Cenote of Chichen Itza jade plaque with

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 (d) Jade Museum jade belt plaque with T-shaped element of T503 carved in center, making the whole plaque an example of T503.

Figure 5.14. Glyphic passages on bone rattle from Tikal. (a) **PUL-yi-ya 7IK'** 'Since the 7ik' was burned...'. (b) **7u-SKULL 7IK'** '... the 7ik' was VERBed'. The WIND.GOD sign, **7IK'** 'wind', probably refers to the bone rattle itself, as a musical (percussion) instrument.

Figure 5.15. Lake Güija Plaque. (a) Text showing the following: **7u-JADE.PENDANT HAND-ma-?-b'a MAM-ma ?-li-7e ?-TUN/HAB'** [proper.name]. (b) Iconographic support for the identification of **7u-SHARK.HEAD** as referring to the jade plaque pendant itself. Drawing from Houston and Amaroli (1988:Figure 4).

Figure 5.16. The **CH'AB'** reading of T712 in the parentage statement context. (a) **7u-si-hi 7u-chi-ti T712-b'a**. (b) **7u-chi-ti T712-b'a**. (c) Canberra Stela: **7u-si-hi 7u-ch'a-b'a**. Drawing by Stephen Houston from Schele and Grube (1995:146).

Figure 5.17. T712 with the possible reading **CH'ACH'AB'** 'bloodletter'. (a) Bloodletter implement from Yaxchilan with ownership statement: **7u-B'AH 7u-T712-li...** 'It is the image of the Bloodletter of...'. (b) Yaxchilan Stela 35: Statement about action performed by Lady **7IX-7UH** from Yaxchilan accompanied by scene of her letting blood from her tongue: **7u-B'AH ti-ch'a-T712 ti-T841-li 7IX-7UH CHAN-na-li 7IX-7AJ-K'UHUL-na** 'It is the image of Lady 7uh-Chan-al Lady-Priestess T712ing and T841ing (or T712ing with/from T841)'. Drawing from Schele (1991:127).

Figure 5.18. Use of T712 as a derived verb. (a) Tikal Stela 10, D11-D12: **YAX-T712-ja/AJ [PERSONAL.NAME] [PERSONAL.NAME] T712ed for the first time/once**. From Jones and Satterthwaite (1982:Figure 14). (b) Caracol: **YAX-ch'a-T712-wi SAK-K'AN-WITZ** 'Sak K'an Witz T712ed for the first time'.

Figure 5.19. Use of T712[841] as an instrument role. (a) **7o-chi-ya tu-T712 ti-T841 7och-iy-Ø(+a) t-u-T712 ti+T841** 'S/he entered with his/her T712 with/at T841'.

Emiliano Zapata Panel. Drawing by Nikolai Grube. (b) **7IL-hi tu-T712 ti-T841** 'S/he/it was seen with T712 with/at T841'. (c) **7u-TZAK-K'UH nu-CHAN ya-(7)AJAW 7ITZ'AT tu-7u-T712[841]** 'Nun-Chan Y-ajaw 7itz'at conjured a/the god with his T712 (and) T841'.

Figure 5.20. Water jug with infixed T841, possibly referring to its contents as **7AK'** 'water, moist'. Dumbarton Oaks Panel. Drawing by Linda Schele.

Figure 5.1.

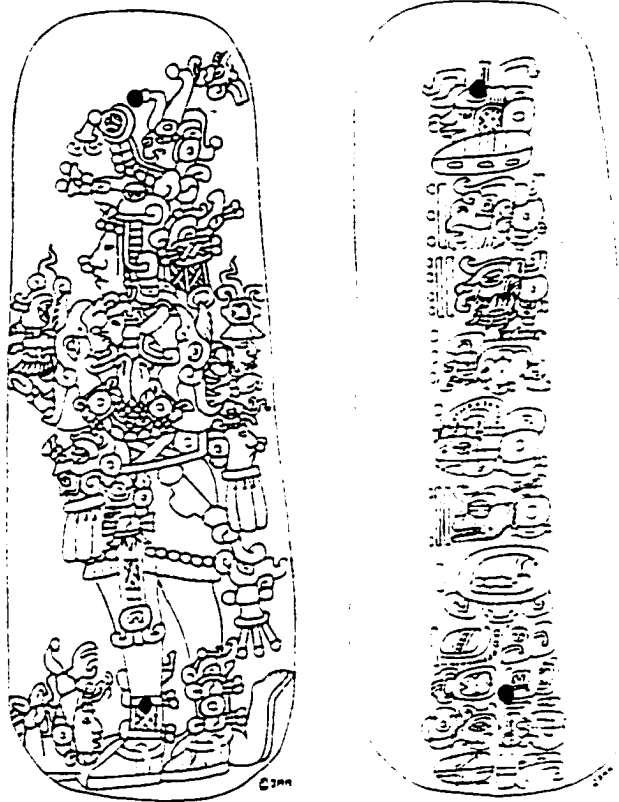


Figure 5.2.

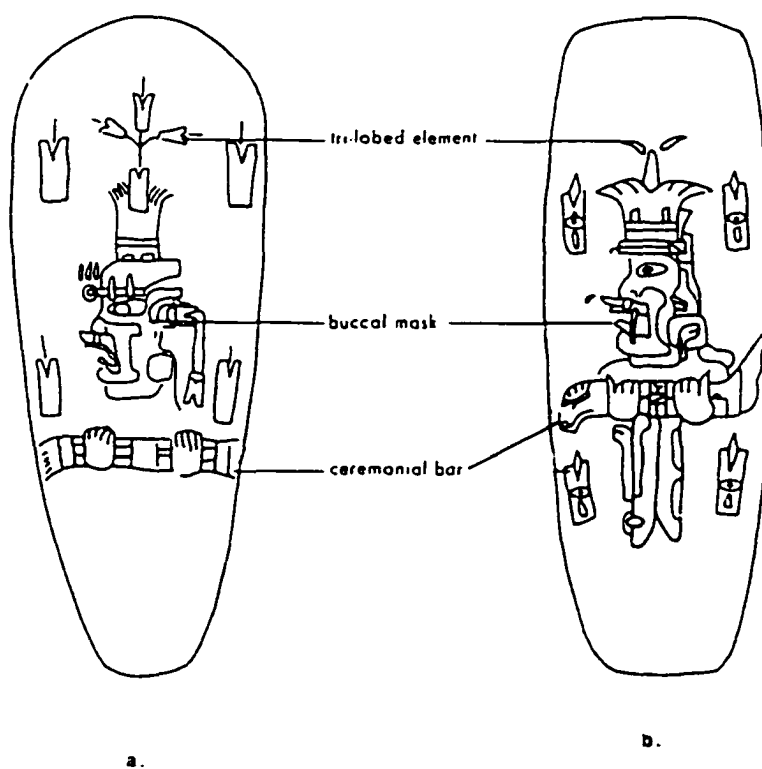
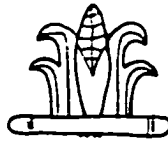


Figure 5.3.



a.



b.



c.



d.

Figure 5.4.

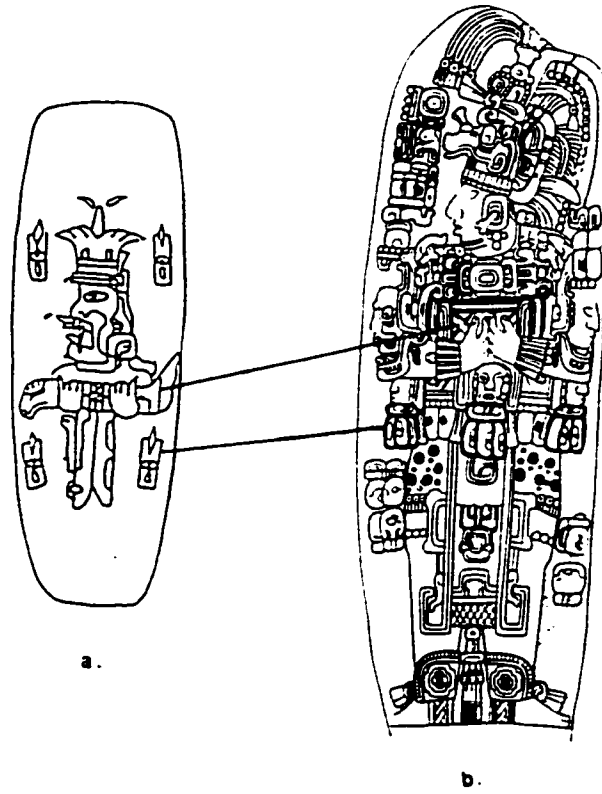


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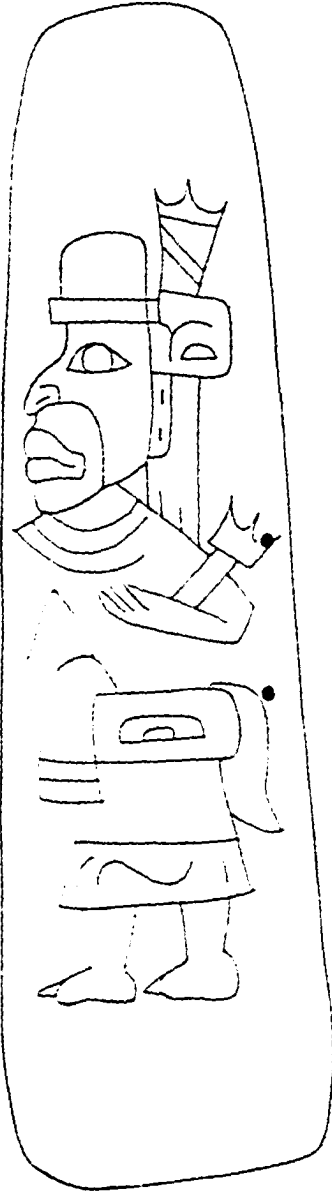


Figure 5.6.



a.



b.



c.

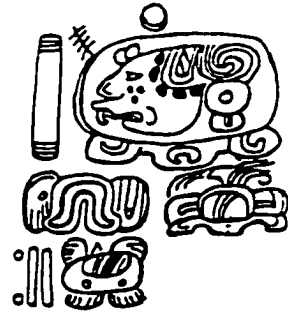
Figure 5.7.



a.



b.



c.



d.



e.



f.



g.



h.

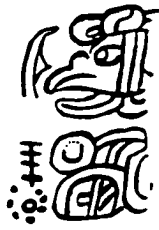
Figure 5.8.



a.



b.



c.



d.



e.

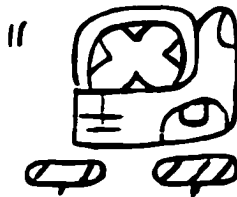
Figure 5.9.



a.



b.



c.

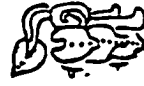
Figure 5.10.



a.



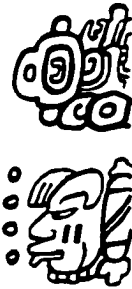
b.



c.



d.



e.



f.



g.



h.

Figure 5.11.



a.



b.



c.



d.



e.



f.



g.



h.



i.



j.



k.



l.



m.



n.

Figure 5.12.



a.



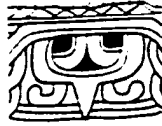
b.



c.



d.



e.



f.



g.



h.



i.



j.



k.

Figure 5.13.



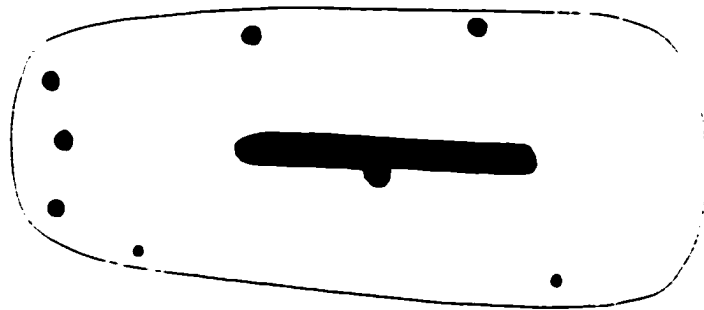
a.



b.



c.



d.

Figure 5.14.



a.



b.

Figure 5.15.

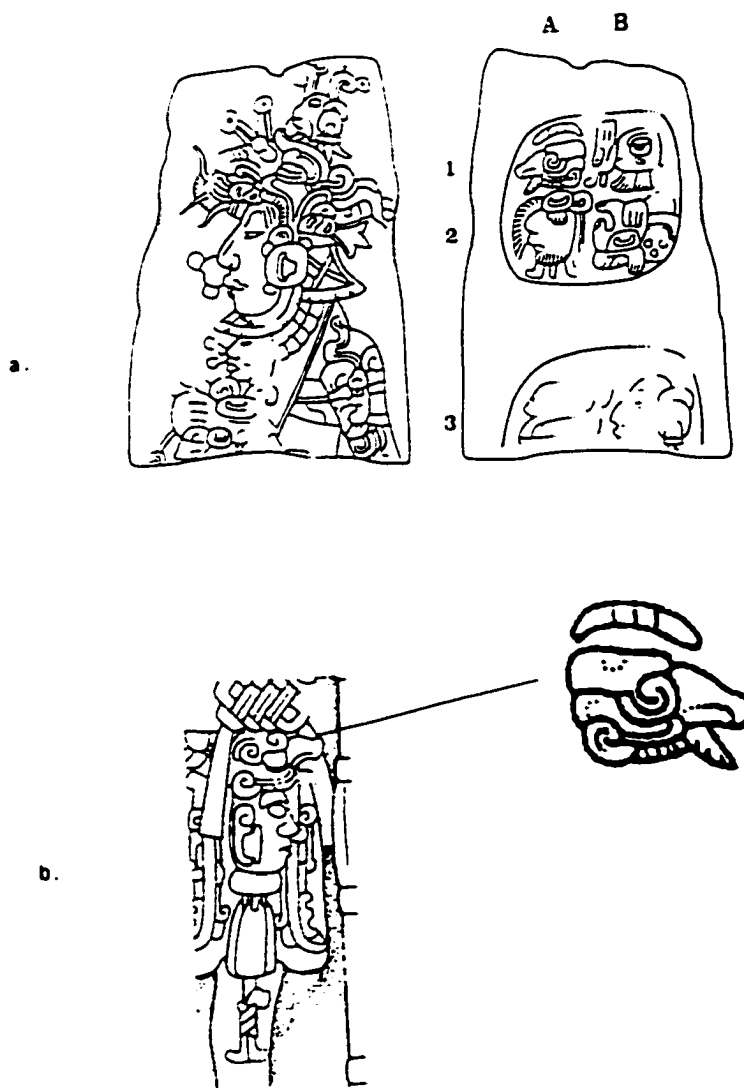


Figure 5.16.

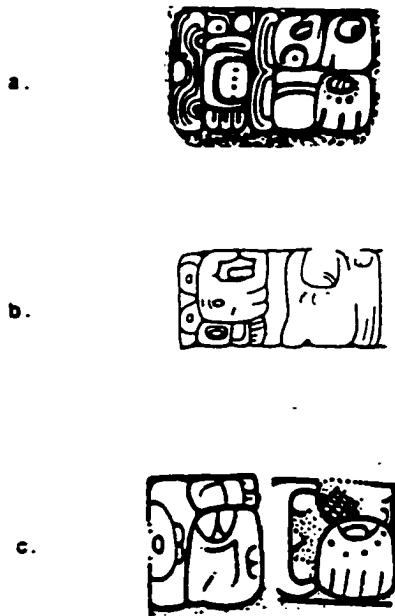


Figure 5.17.

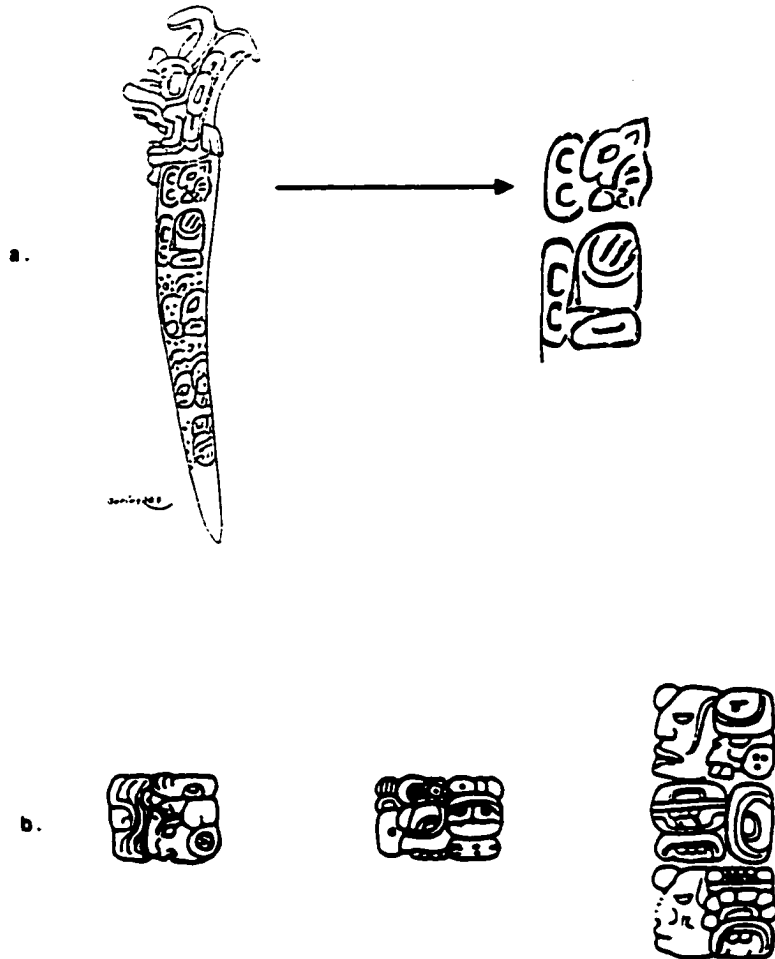


Figure 5.18.

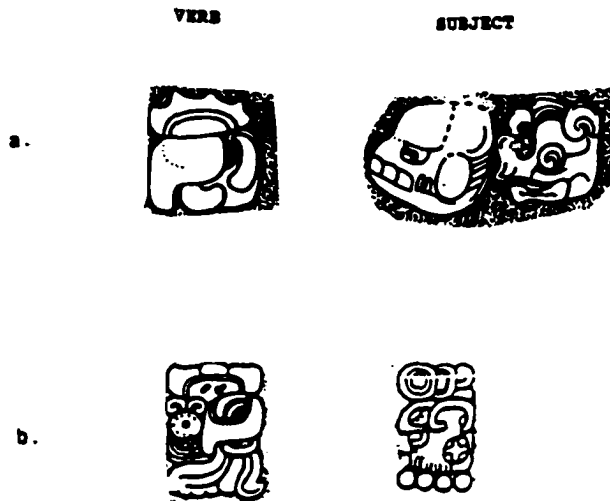


Figure 5.19.

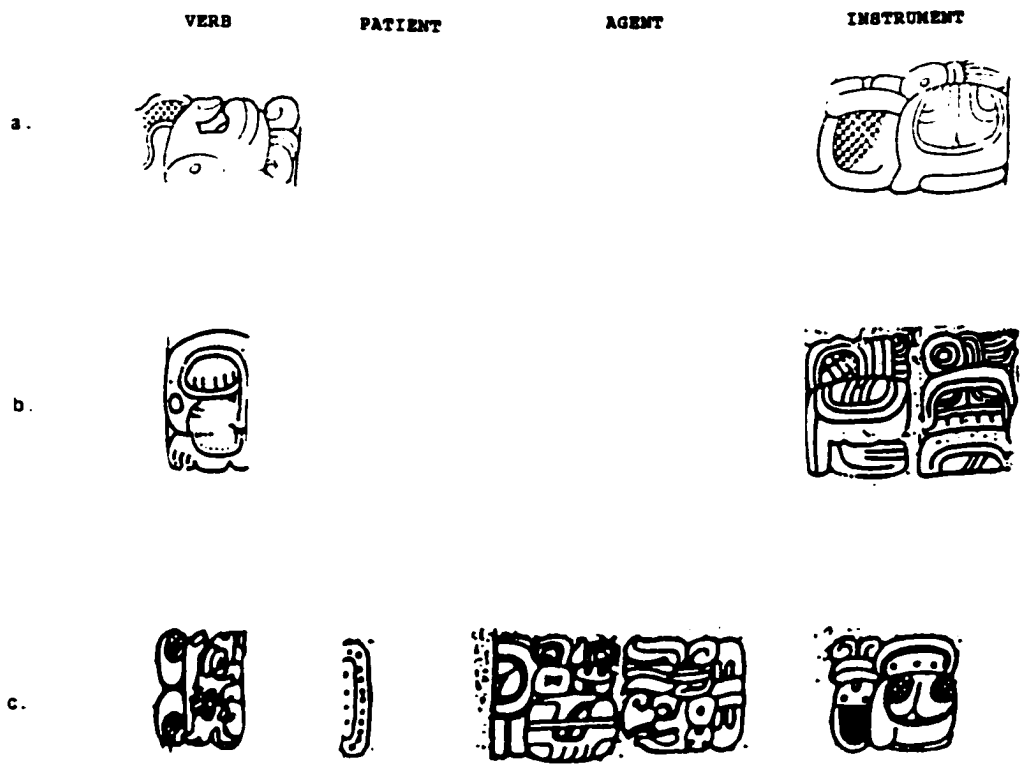
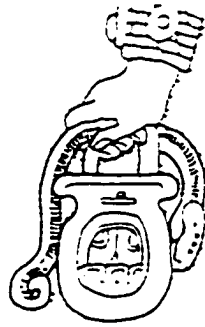


Figure 5.20.



CHAPTER VI: LIST OF FIGURES

Figure 6.1. Photograph of front side of DO pectoral. From Dumbarton Oaks file on the DO pectoral.

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Figure 6.13. Drawing of text on BMA mask after photograph in Soustelle (1979:Plates 60 and 61) and personal examination of the piece on one occasion.

Figure 6.14. Drawing of text on PMA flare after photograph in Kidder and Ekholm (1951).

Figure 6.15. Signary of DO subset of texts: Human heads. (1) BEARDED.GOD.N.

Attributes: Beard, shark's tooth, tuft of hair over forehead, square nose, earflare.

Frequency: 5x. (2) FOREHEAD. Attributes: T-shaped element projecting from forehead, otherwise generic head with or without earflare ornament. Frequency: 3x. (3) Human head with possible tuft of hair and earflare, otherwise generic-looking.

Frequency: 1x. (4) Human or godlike head with tuft of hair over forehead and in back of the head, absence of eye and presence of rectangular outline over forehead, shark's tooth. Possibly early form of T1013. Frequency: 1x. (5) GENERIC.HEAD. Attribute: spot on the cheek.

Figure 6.16. Signary: Animals. (31) HAWK. Probably hawk or eagle species.

Attributes: feather horns like harpy eagle's (especially clear in version to the right of seated personage), long curved beak, feather beard (cf. Classic MUWAN 'hawk' and avian form of CHAN 'sky'). Frequency: 2x. One iconographic occurrence. (32)

BIRD.HEAD. Attributes: Curved beak, nostril, eyebrow surrounds eye. Frequency: 1x.

(33) SPOTTED.BAT.HEAD. Attributes: Bat nose and ear, spot on the cheek.

Frequency: 1x. (34) MONKEY.HEAD. Attributes: Wears earflare and has hair in the

back of the head. Frequency: 1x. (35) Unknown. Possibly two signs: a superfix on top of a GOPHER head. Possible third sign present: two circles may correspond to phonetic

T1 7u. Frequency: 1x. (36) BEHEADED.JAGUAR. Attributes: headless jaguar body,

with infixed cartouche containing two stub elements, and with a tail. Unclear whether H-element to the right is a separate sign or a stylistically appropriate iconic element with no

orthographic value. Frequency: 1x. (37) GOPHER. Attributes: outline of T757

GOPHER, with tongue sticking out. (38) IGUANA. Attributes: depicts an upended

iguana head with two of its legs below. Frequency: 1x. (39) Possible SHARK sign.

Attributes: curved element on back of head, earflare. Frequency: 1x.

Figure 6.17. Signary: Body parts. (51) Precursor to T671. Attributes: thumb touching index finger with tip, infixed cartouche with or without an infixed double-stub element.

Frequency: 2x. (52) Precursor to T713 or T670. Attributes: open hand, infixed cartouche with or without an infixed double-stub element. Frequency: 1x. (53) Precursor to T644.

Attributes: lower torso and left thigh of person, no U-shaped infix, no cartouche infix.

Frequency: 1x. (54) SKULL. Attributes: headband ornament on forehead, enclosing eye-socket element, teeth rendered with one horizontal line and three vertical lines.

Frequency: 1x.

Figure 6.18. Signary: Other main signs. (71) T503 **7IK'** 'wind'. Attributes: T-shaped element inside of horizontally-oriented T-shaped cartouche. Frequency: 1x. (72) T504

7AK'AB'/7AK'B'AL'/7AK'. Attributes: Rounded outline, symmetrical abstract design.

Frequency: 1x. (73) T505 **7AK'AB'/7AK'B'AL'/MAN**. Attributes: T504 rotated ninety degrees to the right. Frequency: 2x. (74) T617. Attributes: Oval cartouche with diagonal band inside. Frequency: 1x. (75) **CROSSED.BANDS.JESTER.GOD** headband.

Attributes: two plant elements on top. Frequency: 2x. (76) T517 with plant elements on top, iconically equivalent to pear-shaped T533 and to T535. Attributes: oval outline with U-shaped element inside an infixed cartouche and two hooked elements as superfixes.

Frequency: 1x. (77) **REED** sign. Attributes: tripointed reed tassel with diagonal bands suggesting a shiny surface (i.e., a jade tassel effigy jewel). T60 sign below may be phonetic complement **hi/ji** for **7AJ** 'reed'. The sign could be the basis for T518, and it in fact may be read **7AJ(AW)**. Frequency: 1x. (78) Double cartouche with diagonal band. Attribute: one of the two components of T518. (79) T518. T60 suffix may be optional (see discussion in dissertation). Frequency: 2x. (80) Possible T188 **le**. Attributes: elongated sign with slit surrounded by quarter-circles. Frequency: 1x. (81) **MOUNTAIN** sign. Attributes: sprouting vegetation on top, diagonal bands, striations at the bottom, or

if animated, long snout, curving elements coming out of the mouth, and a shark's tooth. Frequency: 2x. (82) T17 **yi**. Attributes: rounded hook-shaped outline with a small hook element inside a cartouche. Frequency: 1x. (83) STAR sign. Attributes: characteristic star sign. Frequency: 1x. (84) T843 STEP sign. Attributes: shows a staircase with either a FOOTPRINT or RUBBER.BALL element on one of the steps. Frequency: 1x. (85) T712 BLOODLETTER sign. Attributes: depicts an obsidian bloodletter, as indicated by the diagonal reflection sign. Frequency: 1x. (86) Possible instance of 134[595] **no**. Attributes: three horizontally-arranged rectangular elements on each side, an oval-shaped main sign with vertically-arranged rectangular elements. Frequency: 1x. (87) unclear: possibly a MOUNTAIN sign graphically cognate with the Epi-Olmec MOUNTAIN sign, or perhaps a sign with a similar shape as **chu**. Frequency: 1x.

Figure 6.19. Signary: Signs with unclear iconic motivation or composition. (110)

Unknown. Attribute: generally oval shape with rectangular edge on top right, with inner details mostly eroded. (111) Uncertain. Attribute: resembles STEP sign, shows two diagonal bands, and may be subfixed with a form of T88 **hi/ji** or a conflation of T60:88, both **hi/ji**. Frequency: 1x (if different from glyph 83). (112) Uncertain. Attribute: diamond shape, with vegetation-like motifs on top sides, and oval-shaped motifs, one of which has diagonal bands possibly indicating a reflective surface (and hence a hard surface), on the bottom sides. Frequency: 1x. (114) Uncertain. Possible T761 PENIS sign, **7AT** 'penis'. Attributes: U-shaped element rotated ninety degrees to the left and resembling the head of the penis, a somewhat rounded bottom part possibly representing testicles, and two striations possibly representing scars from bloodletting sacrifice. Frequency: 1x. (115) Uncertain. Possibly two separate signs. Top sign resembles Glyph 155. Frequency: 1x. (116) Uncertain. Frequency: 1x. (117) Uncertain. Coe (1966) suggests a SHARK sign. Frequency: 1x. (118) Possible T504 **7AK'AB'7AK'B'AL/7AK'**, T683 MOON/**ja**, T774, T769 WAY. Frequency: 1x. (119) Uncertain. Resembles T178/534 **la**, but also T510a STAR and T544 **K'IN**. Has a

possible **ni** suffix attached and possible **chi** sign following, perhaps for **K'IN-ni-chi** spelling. Frequency: 1x.

Figure 6.20. Signary: Graphic affixes. (141) T1 **7u**. Frequency: 1x. (142)

DOUBLE.MERLON and FLAME.EYEBROW motifs. Frequency: 3x. (143)

T147/165/194. Possibly **la** or **nal/NAL**. Attributes: consists of a circular bead with another bead attached to it. Frequency: 1x. (144) Possibly T89/90/91 **tu** or T57 **si**.

Frequency: 1x. (145) LEAF/SPROUT. Frequency: 1x. (146) T126 **ya**. Frequency: 2x.

(147) T124 **tzi/TZIK**. Frequency: 1x. (148) NOSE/CLEFT/FINGER.TIPS sign.

Attributes: this sign may actually be two or three separate signs, the NOSE sign, the CLEFT sign (Classic **SIJ(YAJ)**), and the FINGER.TIPS sign. Frequency: 1x. (149)

EARFLARE sign. Attributes: sign depicts an earflare ornament, and is characterized by a broken diagonal band. Frequency: 1x. (150) T23 **na**. Frequency: 1x. (151) Possible

precursor to T139 **la**. Attributes: pair of triangular signs pointing downward. Frequency:

4x. (152) T24 **li**. Attributes: hook-shaped outline with an inner cartouche which may or

may not contain one diagonal band or more. Frequency: 2x. (153) T60 **hi/ji**. Attribute: this sign may be iconically related to a reed tassel, rather than functioning

orthographically as **hi/ji**. Frequency: 2x. (154) T116 **ni**. Frequency: 4x. (155) T130 **wa** or T168 **7AJAW**. Attributes: this sign may actually be simply phonetic T130 **wa**.

Frequency: 1x. (156) T517.130 **7AJAW**. Attributes: Composed of T517, the U-shaped element, and T130 **wa**. This is the true predecessor to T168 **7AJAW**. (157) Possibly a

conflation of T60:88; Lachlan Duncan (personal communication, 2000) suggested to me that it could correspond to T88. If correctly identified as a form of T60:88 it could

function phonetically as a verbal suffix **-hi** for **-(V)h-i**, a suffix of intransitives. (158)

Possibly a form of T116 **ni**, partly eroded. Frequency: 1x. (159) T568 **pa**. Frequency:

2x. (160) POLISHED.SURFACE sign, a semantic determiner or classifier ('polished object'). Attributes: shows a pointed outline suggesting intense glare, and a diagonal

band that commonly denotes reflection of light. Frequency: 1x.

Figure 6.21. Name of seated personage on DO pectoral identified by Coe (1966). (a) Glyphic name embedded in pictorial representation of seated figure. Drawing by this author. (b) Glyphic name at B6: FLOWER-HAWK. (c) The same glyphic name at C2-D2. (d) Example of MUWAN(-na) or CHAN(-na) glyph in jade earring from Palenque, Late Classic. Drawing from Ruz Lhuiller (1973:203). The HAWK glyphs in the DO pectoral corresponds iconically either to the Classic period MUWAN ‘hawk’ glyph or the bird form of the SKY glyph. The beak is rendered in the same way, the example at D2 and the Palenque example both have a prominent eyebrow, all three glyphic examples exhibit a beard-like set of lines, and both D2 and the Palenque example show two feather horns, although in different locations (the DO pectoral example shows both horns in the back, the Palenque example shows one in the front and the other in the back).

Figure 6.22. REED signs. (a) B3 in DO pectoral: REED-hi. Drawing by this author. (b) REED day signs from Monte Alban Tablet 14 and Chiapa de Corzo Stela 2. Drawing from Justeson et al. (1985:Figure 8). (c) REED-hi glyph as part of name phrase in Early Classic looted jadeite turtle shell effigy pectoral. After drawing in Schele and Grube (1994:82). (d) Uaxactun Early Classic mural: Day sign Ben depicting a REED. (e) T517.130:518:60 form of 7AJAW in UNP clamshell text at A7. Drawing by this author. (f) Manik I (ca. A.D. 200-300) pottery plate from Tikal with possible use of REED sign as 7AJ in the spelling of NA7/7IX-7AJ-K’IN ‘priestess’. Note the T60 sign held in common by B3 in DO pectoral, A7 in UNP clamshell, and the looted turtle shell example. Note also the diagonal lines in B3 of the DO pectoral and the turtle shell example and their close similarity to those in T518. These examples suggest that T518 is a REED sign, and that its full form is in fact T518:60. This also suggests a reading 7AJ-wa for (e), rendering **7ajaw*, based on proto-Mayan **7aaj* ‘reed’.

Figure 6.23. Iconographic use of tripointed REED tassel as a symbol of rulership. (a) Headband on stucco architectural mask at Cerros. (b) JESTER.GOD centerpiece on ruler’s headband in Dumbarton Oaks pectoral. (c) Tikal Burial 85 mask.

Figure 6.24. Titles. (a) DO pectoral: B5. Possible **7AJ-wa** or **7AJAW** title, precursor of T168:518 **7AJAW**. The top sign, equivalent to the T168 sign, corresponds to a likely early form of T130 **wa**. The second sign corresponds to the right half of T518, possibly **7AJ**. (b) Example from Early Classic Xukpi stone: P1. It reads **STAR/T687-wa-T518**, but the T518 form is only half of the normal T518, just as in the DO pectoral example. Another example in the same text at E2, this time showing T168:518 also shows T518's second half only. After Schele, Grube, and Fahren (1994:1). (c) JM spoon: A8. The glyph is made up of four signs: Glyph 142 as a prefix, the T168 equivalent, made up of T517 (U-shaped element) followed by half of T130 **wa**, T505 **7AK'AB'/7AK'B'AL//MAN**, and Glyph 152 **?li**. Glyph 142 takes the place of T36 **K'UH/K'UHUL** in Classic period Emblem Glyphs. (d) PMY jaguar: B4. It shows three signs: Glyph 142, presumably the T168 equivalent, now mostly eroded, and the remains of T518. (e) DO celt: A6. It shows the same composition as B4 in the PMY jaguar. The components of T518 are shown as separate entities, rather than as one as in the Classic T518. (f) UNP clamshell: A7. It shows the same form of the T168 equivalent as in (b)-(d), and it shows too a T60 sign beneath the T518 equivalent, as a possible phonetic complement or iconic compound. The T518 form is also divided as though made up of two separate signs. (g) Early Classic-period example of T168:518 from Tikal Stela 31:J2 showing T518 already rendered as a though made up of a single sign. This was the case already by A.D. 416 in the Tikal Ballcourt Marker. (h) INS 4442 possibly dating to A.D. 270: at A6 it shows a form of T518 still split into two parts. The Hauberg Stela also has the split version of T518, consonant with its early date of A.D. 197. (i) Title from Piedras Negras Stela 3: **7IX//NA7-na-MAN-ni-7AJAW** 'Lady of Man'. Drawing by John Montgomery. (j) Kaminaljuyu Stela 10: E9. It shows a sign equivalent to the T168 precursor in the Dumbarton Oaks pectoral, and two signs below that, one of which corresponds to the half T518 that also occurs in the Dumbarton Oaks pectoral as a graphic main sign. (k) Kaminaljuyu Stela 10: H3. It shows T518, with its two disjointed halves,

followed by T533. This is a likely spelling of **7AJAW** possibly as **(7AJ-)7AJAW**. (l) Kaminaljuyu Stela 10: H8. Possible title: it shows the second half of T518.

Figure 6.25. BEARDED.GOD.N forms. (a) UNP clamshell: A1. It shows tuft of hair, shark's tooth, earflare, long and narrow nose, long and narrow eye. Drawing by this author. (b) JM spoon: A4. It shows tuft of hair, full beard, earflare and curling hair, long and narrow nose, long and narrow eye. Drawing by this author. (c) DO pectoral: B2/C1. It shows in both cases a tuft of hair over forehead, full beard, long and narrow nose, and long and narrow eye. Drawing by this author. (d) PMY jaguar: A1. It has a tuft of hair over forehead with added dots, a full beard with the hairs ending in dots, a long and narrow nose, a long and narrow eye with an iris, a pair of teeth, and a upward-curling hair in the back. Below the upward-curving hair is the sign T116 **ni**, showing what may be hairs ending in dots. Drawing by this author. (e) KND bivalve: A3. It shows a tuft of hair with a single circle, a more normal-looking nose, a spherical bead in front of the nose with three lines underneath as though indicating movement or vibration, a shark's tooth, a beard, a pair of fish barbels, a prominent eyebrow, a more normal-looking eye with an iris. The back shows a T116 **ni** sign. Drawing by Linda Schele. (f) Bellote stone effigy bowl: Glyph F. It shows a tuft of hair, a polished diagonal band on forehead, a curling eyebrow, a long and narrow nose, a long snout, a sharp tooth, a fish barbel, a beard, an earflare, hair or reeds sticking up from earflare, and a T178 **la** sign infixed in his eye. Drawing from Easby and Scott (1971:Figure 76).

Figure 6.26. Olmec predecessors of DO pectoral's **CROSSED.BANDS** sign. (a) Tripointed crossed-banded jewel as centerpiece of royal headband on Teopantecuanitlan sculpture. After (b) Tripointed cross-banded and clefted motif in Olmec celt. (c) Tripointed cross-banded motif in Olmec-style Shook Altar. Drawing from Shook and Heizer (1976:Figure 2). (d) Tripointed cross-banded motif from Dumbarton Oaks pectoral. Drawing by this author based on photograph in Coe (1966:Figure 2).

Figure 6.27. JESTER.GOD with early T533 **7AJAW** pear-shaped outline. (a)

JESTER.GOD headband from Rio Azul Plaque. Drawing by this author. (b) Glyph at A4 on KND axe: It corresponds to the tripointed JESTER.GOD motif. As such, it probably reads **HUN** ‘paper, book, headband’. (c) Glyph at A2 on Kaminaljuyu jade earflare: It corresponds to the JESTER.GOD headband with one of the points omitted. As such, it probably reads **NIK/NICH** ‘flower’. From Kidder, Jennings, and Shook (1946:Figure 41). (d) Iconographic example of JESTER.GOD-JAGUAR on Abaj Takalik Stela 5. The JESTER.GOD motif shows three points and an early form of pear-shaped T533. The three points suggest the reading **HUN**. (e) El Mirador Chicanel Sherd: It shows the early form of T533 with one of the points omitted, suggesting also the reading **NIK/NICH** ‘flower’. Otherwise, the form of the early T533 is very similar to that in the Abaj Takalik example with three points. (f) Possible iconographic spelling of **HUN-B’ALAM** with JESTER.GOD motif showing an oval rather than pear-shaped outline and only two points rather than three. (g) PMY jaguar: Form equivalent to the JESTER.GOD motif rendered on Tikal Stela. It shows an infixed U-shaped element infixed inside a cartouche, which is itself infixed inside the oval element of the JESTER.GOD motif. This form is equivalent to the JESTER.GOD motif in the Leyden Plaque. The jaguar figurine glyph may therefore read **NIK/NICH** flower.

Figure 6.28. Possible FLOWER glyphs with two-pointed tops. (a) DO pectoral at B6a. (b) Kaminaljuyu earflare. (c) HTZ axe at A5. (d) El Mirador Chicanel Sherd. (e) PMY jaguar. (f) PRL conch: **NIK[TE7]**. The T646 **TE7** sign is infixed within what would otherwise be identical to the glyph from the PMY jaguar: an oval sign with an U-shaped element.

Figure 6.29. Forms and readings of the basic T533 **7AJAW** ‘lord, ruler’ glyph. (a) T533 **7AJAW** ‘lord, ruler’ and **NIK/NICH** ‘flower’. (b) T535 **NIK/NICH** ‘flower’. (a) substitutes freely for (b), but (b) is never used with the reading **7AJAW** in the Classic period. (c) **HUN** ‘paper, book, headband’. (d) T534 **la**. Drawings by this author.

Figure 6.30. JESTER.GOD motif in iconography and script. (a) Nosara jade plaque:

HUN-B'ALAM. It uses pear-shaped form of T533 with O-shaped element rather than U-shaped or ||-shaped element. Drawing by this author. (b) Copan Peccary Bone text: **HUN.** It shows transitional form between pear-shaped and circular-shaped form of T533 also. Drawing by unknown author. (c) Copan Stela 6: **K'INICH-ya-HUN-na.** **JESTER.GOD** sign uses Late Classic form of T533. Drawing by Barbara Fash. (d) DO celt: **HUN-na.** Iconographic use of **JESTER.GOD** sign with phonetic complement **na.** Drawing by Linda Schele. (e) INS 4442: **HUN-na.** Iconographic usage of **JESTER.GOD** sign with phonetic complement **na.** Drawing by this author. (f) INS 4442: Phonetic sign T23 **na** used as a complement to glyph **TAN** in same jade plaque. It is identical to the sign used in the **JESTER.GOD** sign in the DO celt and the front side of INS 4442. Drawing by this author. (g) Verbal phrase from Tikal whose subject is the **JESTER.GOD** sign: **K'AL-ja/AJ 3-HUN ta-7u-B'AH** 'Three **JESTER.GODS** were wrapped on his head'.

Figure 6.31. Possible phonetic **7u** sign in DO pectoral at C5a. (a) C5: **?7u-T712.** Drawing by this author. (b) INS 2007: **7u-T712[841].** Drawing by this author. (c) Earflare assemblage on K3863. The centerpiece is iconically identical to the sign at C5a in the Dumbarton Oaks pectoral. Drawing by this author.

Figure 6.32. Early forms of T757 **GOPHER**, phonetic **b'a**, logographic **B'AH** for homophonous ***b'ah** 'self/head/top/image' and ***b'ah** 'gopher'. (a) DO pectoral: D5. It shows a tongue. Drawing by this author. (b) HTZ axe: A6. Drawn by this author based on photograph in Thompson (1931). (c) CNT 6125: A3b. Drawn by this author based on Proskouriakoff (1974:110-111, Plate 45) and first-hand examination at the Peabody Museum at Harvard. (d) BMA mask: A1b. Drawing by this author based on photograph in Soustelle (1971:Plates 60 and 61) and first-hand examination of the piece. (e) National Museum of Costa Rica La Fortuna slate disk: B1c. Drawing by this author based on photograph and personal examination of the piece. (f) INS 6528: B1b. Drawing by this author based on photograph and personal examination of the piece. (g) **JAGUAR** sign

from La Mojarra Stela 1 showing tongue rendered in similar fashion as that in (a).

Drawing by this author after rubbing by John Justeson.

Figure 6.33. T24 li. (a) DO pectoral: D6. (b) DO celt: A7c. (c) INS 4444: B1c. (d) INS 4440: B2. (e) INS 6528: A5c. (g) Dumbarton Oaks jadeite celt: B4c. All drawings by this author.

Figure 6.34. Signs from dedicatory formula or PSS identified by Coe (1966), Ayala (1983), and Freidel and Schele (1989) in the Dumbarton Oaks pectoral. (a) Initial Sign. (b) STEP sign.

Figure 6.35. T740 IGUANA signs. (a) Possible T740 IGUANA glyph at A2b in DO pectoral. (b) T740 IGUANA glyph from Yaxchilan Lintel 35:B6. Note possible correspondence in legs. Drawing by Ian Graham. (c) Immediate context of T740, as a possible logograph **SIJ** for *sihj* 'to be born', from Yaxchilan Lintel 35:B6.: **7AJ-si-SIJ-NAH** 'He of the Birth House'. Note possible correspondence between T57 **si** in Yaxchilan example and A2a in DO pectoral. (d) Placename in Hombre de Tikal text at E6. Note possible correspondence between T91 **tu**, the first sign, and A2a in Dumbarton Oaks pectoral. Drawing from Fahsen (1988a).

Figure 6.36. MOUNTAIN/PLATFORM-LORD epithets. (a) Kaminaljuyu Stela 10:G3-H3. The first glyph is a MOUNTAIN glyph showing the following traits: sprouting vegetation on the top, a diagonal band, a base with striations and a cave. The second is composed of T518 (vertically-oriented) and T533, and might spell either **(7AJ-)7AJAW** or more simply **7AJAW** 'lord, ruler'. Drawing by this author. (b) PMY jaguar: A4-B4. The first sign is the MOUNTAIN sign showing sprouting vegetation on the top, two diagonal bands, striations at the base, and a likely phonetic sign **la**. The second shows three elements: EYEBROW:DOUBLE.MERLON-T168-T518. It probably reads **DIVINE-7AJAW**. Drawing by this author. (c) JM spoon: A2-A3. The first sign is an animated version of the MOUNTAIN sign in the PMY jaguar text. The second sign appears to be a full-blown Emblem Glyph: **DIVINE-MAN-7AJAW-?la** 'Divine Man

Lord'. Drawing by this author.

Figure 6.37. MOUNTAIN/PLATFORM glyph across Mesoamerica. (a) PMY jaguar:A4. (b) Kaminaljuyu Stela 10:G3. (c) Sacatepequez Stela (MNAEG 2081). This carving shows pyramidal temple on top with ray-like elements emanating from it and sprouts on the corners, a stepped structure, and a personified mountain head with a cave underneath. Drawing by author based on photograph in Schmidt, de la Garza, and Nalda (1998:611, Plate 369). (d) Unprovenanced ceramic sherd from Oaxaca. Drawing from Urcid (1993). (e) Building J Tablet, Monte Alban. Drawing by Alfonso Caso.

Figure 6.38. Animated versions of MOUNTAIN signs: Classic and Late Preclassic. (a) Copan Stela B: **7u-B'AH MO7-WITZ 7AJAW** '(It is) the image of Macaw-Mountain Lord'. Here the regular logographic form of T529 **WITZ** 'mountain, hill' is used. Drawing by Barbara Fash in Fash (1991:31). (b) **MO7-WITZ** 'Macaw Mountain'. Here the animated version of T529 **WITZ** 'mountain, hill' is used: it shows a long snout, an eye, an earflare, and two entangled strands. Drawing by Linda Schele. (c) PMY jaguar:A4. Late Preclassic MOUNTAIN glyph. Drawing by this author. (d) Animated MOUNTAIN/PLATFORM glyph from Jade Museum jadeite spoon. It shows long snout, shark's tooth, and two long curving strands. Drawing by this author.

Figure 6.39. BIRD.HEAD sign. (a) JM spoon:A7. The BIRD.HEAD sign appears to take two graphic subfixes that might read together **la**. Drawing by this author. (b) Kaminaljuyu Esperanza phase (A.D. 400-600) jade earplug. Drawing Kidder, Jennings, and Shook (1946:Figure 41). (c) Late Classic painted pot K1398. From Kerr (1989:89).

Figure 6.40. BEHEADED.JAGUAR sign. (a) PMY jaguar:A3. BEHEADED.JAGUAR sign. Drawing by this author. (b) Possible expression of **B'AKEL:WAYAL + B'OLAY** in KCH bone at A5-A6. Drawing by Peter Mathews. (c) Tablet of the Sun at Palenque: **B'AKEL(-le) WAYAL**. Drawing by this author based on drawing by Linda Schele.

Figure 6.41. BEHEADED.JAGUAR sign in Classic and Late Preclassic texts. (a) PMY jaguar:A3. Drawing by this author. (b) KCH bone:A6. Drawing by Peter Mathews. (c)

Yaxchilan Stela 18 at C1-B2: **K'IN(-ni) TAN(-na) B'OLAY-la-yu**. Drawing by Ian Graham. (d) Yaxchilan Lintel 47 at C3-D3: **CHAK-TAN-na B'OLAY-yu[b'u]**. Drawing by Ian Graham. (e) Tikal Stela 3 at C3-D3: **CHAK-TAN-na b'o/B'OLAY-yu[b'u]**. Drawing from Jones and Satterthwaite (1982). (f) Unprovenanced pot: **K'IN-TAN-la B'OLAY-TE7**. Drawing from Grube and Nahm (1994).

Figure 6.42. Comparison of two seated jaguar sculptures. (a) PMY jaguar. From Coe (1973:Figure 1). (b) El Baul Monument 14. Squatting jaguar. From Parsons (1986:Figure 138).

Figure 6.43. A compositional orthographic convention: generic heads. (a) PMY jaguar at B1: **SPROUT-GENERIC.HEAD**. (b) Palenque: **TZAK-wa-K'UH**, with T35 spelling **K'UH** 'god'. Drawing by Linda Schele. (c) Palenque: **7u-TZAK-K'UH**, with T35 spelling **K'UH** 'god'. Drawing by Linda Schele. (d) Palenque: **7u-TZAK-K'UH**, with T35:GENERIC.HEAD spelling **K'UH** 'god'. Drawing by Linda Schele.

Figure 6.44. Jaguar-like animal spirit named **B'UTZ'(-tz'i) HIX** 'Smoke(y)-Jaguar'. Note sprout on jaguar's head; it is identical to sprout at B1a in basalt jaguar figurine text. Drawing from Grube and Nahm (1994:Figure 1).

Figure 6.45. T671 **chi** sign. (a) Dumbarton Oaks quartzite pectoral: B1b. The sign appears as a graphic suffix to T843 STEP, which may represent a dedicatory verb. (b) Peabody Museum at Yale basalt jaguar figurine: B8. The sign is preceded, at A8a by what could be an unusually-rendered T544 **K'IN**, and at A8b by what could be an eroded version of T116 **ni**. If so, A8-B8 could spell **K'IN-ni-chi**. (c) Tikal Stela 7:A7: **YUWAL-TZUTZ-yi[chi] ta-2-7AJAW** possibly for yuwal tzutz-ch-iy-Ø(+i) tä+2-7ajaw '(and.then/when) it became completed on 2-Ahau'. Drawing from Jones and Satterthwaite (1982). (d) INS 4442: **K'AL-ja/AJ TUN-chi**. **TUN-chi** or **TUNICH(-chi)** presumably for tun-ich 'stone', inscribed on jade belt plaque from Costa Rica. Drawing by this author. More common Classic period form of T671: (e)-(g). (e) **chi-THRONE**. (f) **chi-THRONE ya-(7)AJAW-TE7**. (g) **chi-THRONE ya-(7)AJAW-TE7**. (e)-(g)

drawings from Villela (1993:Figures 2 and 3).

Figure 6.46. Possible phonetic **la** signs precursors of T139 **la**. (a) JM spoon:A8d. (b) PMY jaguar:A4b. (c) PRL conch shell:D1b. All drawings by this author after photograph in Coe (1982).

Figure 6.47. T124 in DO pectoral. (a) Possible T124:134[595] **TZIK-no** compound in Dumbarton Oaks pectoral: C4. (b) Example of **TZIK-no** from Chinikiha Throne 1. Drawing from Morley (1937-1938). (c) Side of Chinikiha Throne 1. The **TZIK-no** glyph follows the statement of a ruler's death expressed as follows: '(It was) 8 days, 7 months, and 8 years since K'inich B'atal sat as lord, (when) he entered the road (i.e., died)'. The immediately following **TZIK-no** glyph could represent tzik-n-Ø-o7b' (count/recount/honor/read-AP-CMP-3pABS) '(And) they counted/recounted/honored/read', or tzik-n-om-Ø (recount-AP-POT-3sABS) 'S/He/They would count/recount/honor/read'. Either interpretation seems appealing as a verb closing a passage. It is possible that instead of closing the passage from A1-D1, that it opens the passage from D2-H2, which narrates the seating in office of the successor of K'inich B'atal. (d) Copan: **ha-7o-b'o ko--ko-no-ma 3-wi-ti-ki** for ha7-ob'-Ø kok-(o)n-om-Ø 3-witik 'They (are the ones who) would watch/guard the 3-Witik'. Phonetic sign **no** used to spell both an antipassive marker and a potential/future suffix. Drawing from Stuart, Houston, and Robertson (1999a:II-24).

Figure 6.48. Passage from Copan showing an example of a word-final m being underspelled. (b) **7u-to 4-7AJAW 18-YAX** spelling 7uht-om-Ø 4-7ajaw 18-yäx 'It would be finished on 4-Ahau 18-Yax', without the final m of the potential suffix spelled out explicitly. (c) **TZUTZ-ho/jo-ma 7u-15-K'ATUN** spelling tzuh[htz-((a)j)-om-Ø 7u-15-k'a(l)=tun 'The 15th K'atun would be completed'. In **TZUTZ-ho/jo-ma** the h/j of **ho/jo** is either silent (used to spell phonetically the suffix -om) or representing an hypothetically possible allomorph -hom of /-om/.

Figure 6.49. Graphic variants of T1 **7u** and iconographic motivation. Common graphic

variants: (a)-(d). After Thompson (1962). (a) T1. (b) T2. (c) T3. (d) T232. (e) Iconic motivation of T1/2/3/7/11/13/211/232: Beads and bead assemblages. Note the SKULL necklace centerpiece which corresponds to T211/232. Late Preclassic forms: (f)-(h). (f) T1 7u in unprovenanced Brooklyn Museum of Art jadeite pectoral mask at A1. (g) T1 7u in Chichen Itza tubular jade bead at A3 and A4 currently at the Peabody Museum at Harvard. (h) T1 7u in Dumbarton Oaks pectoral at C6. Drawings of (f)-(h) by this author.

Figure 6.50. The FOREHEAD sign and graphic infixing. (a) DO pectoral at A3/D4: [pa]FOREHEAD. The infixed pa sign may serve as a phonetic complement, possibly for pam 'forehead/surface'. (b) UNP clamshell at A2: FOREHEAD[POLISHED.SURFACE]. (c) PRL conch at C3: TURTLE.SHELL[POLISHED.SURFACE]. Here the POLISHED.SURFACE sign is infixed inside a turtle shell sign, indicating it is a polished turtle shell. The same may be true of the FOREHEAD[POLISHED.SURFACE] sign: the POLISHED.SURFACE semantic classifier may indicate here that the referent of FOREHEAD is a polishable object/material. All drawings by this author.

Figure 6.51. Possible iconographic referent of FOREHEAD sign. (a) DO pectoral:D4. Drawing by this author. (b) Early Preclassic ceramic figurine head from Paso de la Amada showing a person of status with a polished mica mirror bound to his forehead. Photograph from Clark (1991).

Figure 6.52. Possible clauses defined by BEARDED.GOD.N glyph. (a) UNP clamshell at A1-A2: Text-initial sequence with BEARDED.GOD.N + FOREHEAD[POLISHED.SURFACE]. (b) DO pectoral at B2-B6: Sequence with BEARDED.GOD.N-ni + [pa]FOREHEAD + [B3-A6] + FLOWER-HAWK. (c) DO pectoral at C1-D2: Clause-initial sequence BEARDED.GOD.N-ni + BAT.HEAD + FLOWER-HAWK. (d) JM spoon at A4-A8: Clause-initial sequence BEARDED.GOD.N-ni + 7IK' + A6-A7 + DIVINE-MAN-7AJAW-?la. (e) PMY jaguar

at A1-B2: Text-initial sequence BEARDED.GOD.N-ni + SPROUT + FLOWER + ?PENIS/?TE7. All drawings by this author.

Figure 6.53. Structural Analysis 1 (SA1). JM spoon A4-A8: BEARDED.GOD.N-ni 7IK' + GLYPH.4-BIRD.HEAD-GLYPH.143 + DIVINE-MAN-7AJAW-?la. Assuming BEARDED.GOD.N-ni is a verb, and that T503 7IK' refers to the jade pendant itself, the structure appears to be VOA at least semantically. Drawing by this author.

Figure 6.54. Alternative to SA1. Given the fact that glyphs A6-A7 are not attested elsewhere and their function cannot be supported from external evidence, they could perhaps be a verbal or nominal predicate with A8 as its subject. If so, A4-A8 would make up two clauses: VS + PS, where P stands for predicate (verb or adjective or noun). There is nothing to support this interpretation in favor of that in 6.54. Drawing by this author.

Figure 6.55. Structural Analysis 2 (SA2). JM spoon glyphs A1-A3. (a) VERB/ADJECTIVE/NOUN-?la + SUBJECT '[A2-A3] is/was [A1]ed' or '[A2-A3] is/was a/an/the [A1]'. (b) *7u-POSSESSED.NOUN-?la + POSSESSOR '(It is) the [A1] of [A2-A3]'. The second analysis assumes that there was originally a third person ergative/possessive prefix (i.e., 7u-A1-?la) that has been eroded beyond legibility, as noted by the asterisk. Drawings by this author.

Figure 6.56. Structural Analysis 3 (SA3). Comparison of four separate passages from three different texts. (a) DO pectoral B2-B6: GOD.N-ni + [pa]FOREHEAD + [B3-A6] + FLOWER-HAWK. Possible VOA by analogy with SA1. (b) DO pectoral C1-D2 or C1-D3: GOD.N-ni + BAT.HEAD + FLOWER + HAWK (+ [C3-D3]). Possible VOA clause by analogy with SA1. (c) JM spoon A4-A8: GOD.N-ni + 7IK' + GLYPH.4-BIRD.HEAD-GLYPH.143 + DIVINE-MAN-LORD-?la. Possible VOA clause. (d) PMY jaguar A1-B2 or A1-A4: GOD.N-ni + SPROUT + FLOWER-?PENIS/?TE7 (+ [A3-B4]). All drawings by this author.

Figure 6.57. Structural Analysis 4 (SA4): implications for DO pectoral text, A1-B6. (a)

Clause 1. V_(S) + PP at A1-A2: INITIAL.SIGN + STEP-**chi** + **tu/si-SIJ//?SIH//hu** '[A2] got/was/became STEP-ed'. If A2 is a prepositional phrase, then this clause has no explicit subject phrase: 'it got/was/became STEP-ed'. (b) Clause 2. V[=O]S at B2-B6: BEARDED.GOD.N-**ni** + [**pa**]FOREHEAD + [B3-A6] + FLOWER-HAWK '[B3-A6] FLOWER-HAWK FOREHEAD-BEARDED.GOD.N-ed'.

Figure 6.58. Alternative to SA4, Part I. (a) Clause 1. VS at A1-A2: IS + STEP-**chi** + **tu/si-SIJ//?SIH//HUH/hu** for '[A2] got/was/became STEP-ed'. (b) Clause 2. V[=O]S at B2-B4: BEARDED.GOD.N-**ni** + [**pa**]FOREHEAD + REED + SKULL + MOUNTAIN for 'REED-SKULL-MOUNTAIN FOREHEAD-GOD.N-ed'.

Figure 6.59. Alternative to SA4, Part II. DO pectoral. Clause 3. PS at A5-B6: SIT/SEATED + LORD + NAME/TITLE + CROSSED.BANDS:HAWK/EAGLE for 'Lord [A6] CROSSED.BANDS HAWK is/was seated'.

Figure 6.60. Similarity of early T89 **tu** and T57 **si** phonetic signs. (a) INS 6528 at A5a: T89 **tu**. (b) INS 6528 at A7b: T57 **si**. Drawings by this author.

Figure 6.61. Structural Analysis 5 (SA5). DO pectoral. (a) Clause 4. V[=O]S at C1-D3: BEARDED.GOD.N-**ni** + BAT.HEAD + FLOWER + HAWK + [C3-D3] 'FLOWER-HAWK [C3-D3] BAT.HEAD-GOD.N-ed'. (b) Clause 5. V[=O] _ at C4-D4: **TZIK-no** + [**pa**]FOREHEAD 'He would FOREAHEAD-read/honor'. Drawings by this author.

Figure 6.62. Alternative to SA5. (a) Clause 4. V[=O]S at C1-D2: GOD.N-**ni** + BAT.HEAD + FLOWER + HAWK 'FLOWER-HAWK BAT.HEAD-GOD.N-ed'. (b) Clause 5 at C3-D3: Insufficient data to decide what type of clause, but most likely V[=O] _ (incorporative antipassive verb, with omitted S likely coreferential with S of preceding and following antipassive clauses). (c) Clause 6. V[=O] _ at C4-D4: **TZIK-no** + [**pa**]FOREHEAD 'He would FOREAHEAD-read/honor'. Drawings by this author.

Figure 6.63. Structural Analysis 6 (SA6). (a) DO pectoral at C5-D6: **?7u-CH'AB'-b'a + 7u-ya-(7)AK'/(7)AK'AB'/(7)AK'B'AL-li/IL**. (b) Active transitive: **7u-CH'AB'-(b')a 7u-y(a)-(7)AK'/(7)AK'AB'/(7)AK'B'AL-li/IL** for 7u-ch'ahb'-ä-Ø-Ø y-ak'(äb'/b'äl)-il

'He T712ed his T841'. (c) **7u-CH'AB'(-b'a) 7u-y(a)-**

(7)AK'/(7)AK'AB'/(7)AK'B'AL-li/IL 'It is/was his/its T712, it was his/its T841' or 'It is/was the T712 of his T841'.

Figure 6.64. Structural Analysis 7 (SA7). PMY jaguar text at A1-B4. (a) One clause.

V=OA: BEARDED.GOD.N-ni + SPROUT + FLOWER + ?PENIS/?TE7 +

BEHEADED.JAGUAR + [B3] + MOUNTAIN-?la + DIVINE-LORD for 'Flower [B2-

B3] Mountain Divine Lord SPROUT-GOD.N-ed'. (b) Clause 1. V[=O]S at A1-B2:

BEARDED.GOD.N-ni + SPROUT + FLOWER + ?PENIS/?TE7 for 'Flower [B2]

SPROUT-GOD.N-ed'. (c) Clause 2. PS at A3-B4: BEHEADED.JAGUAR + **7u-B'AH(-**

hi) + MOUNTAIN-?la + DIVINE-LORD for 'The image of Mountain Divine Lord is

a/the [BEHEADED.JAGUAR]'. Drawings by this author.

Figure 6.65. Structural Analysis 8 (SA8). Comparison of the BEARDED.GOD.N glyph

in all four texts. (a) DO pectoral B2-B6: BEARDED.GOD.N-ni + [pa]FOREHEAD +

[B3-A6] + FLOWER-HAWK. Possible V[=O]S clause. (b) DO pectoral C1-D2 or C1-

D3: BEARDED.GOD.N-ni + BAT.HEAD + FLOWER + HAWK (+ [C3-D3]). Possible

V[=O]S clause. (c) JM spoon A4-A8: BEARDED.GOD.N-ni + **7IK'** + GLYPH.4-

BIRD.HEAD-GLYPH.143 + DIVINE-MAN-7AJAW-?la. Possible V[=O]S clause. (d)

PMY jaguar A1-B2 or A1-A4: BEARDED.GOD.N-ni + SPROUT + FLOWER-

?PENIS/?TE7 (+ [A3-B4]). Possible V[=O]S clause. (e) UNP clamshell. A1-A2:

BEARDED.GOD.N + FOREHEAD. Possible VS clause where is underlying O.

Drawings by this author.

Figure 6.66. Structural Analysis 9 (SA9). UNP clamshell text. (a) Clause 1. VS at A1-

A2: BEARDED.GOD.N + FOREHEAD fro 'A/An/The FOREHEAD was/got GOD.N-

ed'. (b) Clause 2. VS at A3-A8: STAR-yi + **7u-[A5-A6] + 7AJAW + [NAME/TITLE]**

for 'The [A5-A6] of Lord [Name/Title] was/got STAR-ed'.

Figure 6.67. Examples of spellings and inflections of STAR(:EARTH) verb. (a) Tonina

Monument 122: STAR. Free-hand drawing by author after drawing in Grube and Martin

(1998:II-51). (b) Piedras Negras Stela 12: STAR:EARTH. Free-hand drawing by author after drawing in Grube and Martin (1998:II-53). (c) Yaxchilan Lintel 41: STAR-yi. Free-hand drawing by author after drawing in Grube and Martin (1998:II-53). (d) Altar de Sacrificios Panel 4: STAR:EARTH-ya. Free-hand drawing by author after drawing in Grube and Martin (1998:II-51). (e) Tortuguero Stela 6: STAR:EARTH-yi-ya. Free-hand drawing by author after drawing in Grube and Martin (1998:II-49). (f) Piedras Negras Stela 12: 2-STAR:EARTH-ja/aj. Free-hand drawing by author after drawing in Grube and Martin (1998:II-54).

Figure 6.68. Examples of CH'AK 'to cut/chop' verb, shown with the following suffixes: **-(k)a** or **(-ka)**, **-(k)a-ja**, or **-yi**. (a) CH'AK-(k)a for ch'a[h]k-a-Ø-Ø (chop[MPASS]-TH-CMP-3sABS) 's/he/it was/got chopped' or CH'AK(-ka) for ch'a[h]k-Ø-Ø (chop[MPASS]-CMP-3sABS) 's/he/it was/got chopped'. (b) Tortuguero Stela 6: YUWAL + CH'AK-(k)a-ja for yuwal ch'a[h]k-aj-Ø-Ø(+ENCL) (AND.THEN chop[MPASS]-TH-CMP-3sABS(+ENCL)) 'and then s/he/it was/got chopped (here)'. Free-hand drawing by author after drawing in Grube and Martin (1998:II-57). (c) YUWAL + CH'AK-yi for yuwal ch'a[h]k-(i)y-Ø(+i) (AND.THEN chop[MPASS]-CMP-3sABS(+ENCL)) or yuwal ch'a[h]k-(a)y-Ø(+i) (AND.THEN chop[MPASS]-?CMP-3sABS(+ENCL)) 'and then s/he/it was/got chopped (there)'.

Figure 6.69. Text on DO celt: Part I. (a) A1-B1: TZUTZ-ma + 8-B'AKTUN for tzu[h]tz-(o)m-Ø(+a) 8-b'aktun '8 Baktuns would be completed (here)'. (a) A1-B1: TZUTZ-ma + 8-B'AKTUN for tzu[h]tz-(o)m-Ø(+a) 8-b'aktun '8 Baktuns would be completed (here)'. This calendrical information suggests a date of A.D. 120 for the text (Schele and Miller 1986). Drawings by this author.

Figure 6.70. Text on DO celt: Part II. (a) A3-A4: ?-la + T548/561-7u-?-la + ta-7AJAW for '(He) [A3-B3] as lord'. Unclear which (A3 or A4) is the verb or the subject. (b) B4-A5: ?ya-K'IN.IN.HAND-la + IGUANA/SNAKE-la for '(He is) the [B4b] of [A5]'. (c) B5-B6: ?7u-[PERSON'S.HEAD] + DIVINE-7AJAW + ?-?-?WINIK for '(He is) the

[B5b] of Divine Lord ?-?-Person/Man'. All of A3-B6 could potentially be one clause, with B3-B6 as the name of the subject of the verb expressed in either A3 or B3.

Figure 6.71. Text on DO celt: Part III. A7-B7: **7u-K'IN-li/IL + yo-TE7-7AT** for 7u-k'in-il yopol=te7 7at 'It is the k'in of Yopol Te7 7at'.

Figure 6.72. Beaded necklaces as the iconic motivation of T62 **yu**. (a) Glyph A3 on tubular bead text: **yu-yu** or **y(u)-(7)UY** for *y-uhy 'his/her bead/necklace'. (b) Earflare ornament on Kaminaljuyú Stela 10, shown as T62 and supporting a logographic reading **7UY** for *7uhy 'bead/necklace'. Drawing by James Porter in Sharer (1995:94, Figure 3.12). (c) Representation of tubular bead necklace piece on Tikal Stela 31. Drawing from Jones and Satterthwaite (1982:Figures 51 and 52). (d) Representation of tubular bead necklace piece on Uolantun Stela. Drawing from Jones and Satterthwaite (1982).

Figure 6.73. Possessed noun in tubular jade bead. (a) A4: **7u-?-b'i-li** for 7u-CVC-b'-il 'her/his/its ?'. **b'i-li** may spell an instrumental suffix followed by a possessive suffix, /-ib'-il/ > -b'-il. (b) A6: **?-?-li**. The sign at A6a is identical to that at A4a, and is most likely a CVC logograph or phonetic sign.

Figure 6.74. Possessed name-tag on Early Classic conch shell trumpet: **7u-yu-b'i** for 7uy-ub' /7u-hub' 'his shell trumpet'. Drawing by Linda Schele (Schele and Miller 1986:83-84, Plate 27).

Figure 6.75. Iconic identity of glyph at A5c on CNT 6125. (a) A5c: **tzi-SKY-PRINCIPAL.BIRD.DEITY**. (b) Principal Bird Deity from El Mirador Stela 2. Note the avian beak and human jaw bone. Drawing from Hansen (1991).

Figure 6.76. Structural analysis of CNT 6125. (a) Predicate: **4-HAB'/TUN**. (b) Head of Subject phrase: **y(u)-(7)UY 7u-B'AH 7u-?-b'i-li** 'the bead of the image of the ? of...'. (c) Complement to the head of the subject phrase: **tzi-STAR-PRINCIPAL.BIRD.DEITY ?-?-li**. Whole text: 'The bead/necklace of the image of the ?? of the Principal Bird Deity is 4-Tun/Hab''.

Figure 6.77. Structural analysis of text on the BMA mask. Text: **7u-B'AH HAND-**

?CHAPAT ?ko-STEP-?T1016 ?7u-?PENIS/?le-WINIK. (a) Option I would be one clause from A1-A4: ‘It is the image of (the) ?-Centipede [A3-A4b] Person’. Option II would be two clauses. (b) Clause 1 at A1-A3: ‘It is the image of ?-Centipede [A3]’. (c) Clause 2 at A4: ‘(It is/was) the [A4b] of the person’.

Figure 6.78. Text on PMN flare. (a) A1-B1: **yo-?le/?7o**[A1a] + **K’INICH.7AJAW**[A1b] + **4K’INICH.7AJAW**[B1]. (b) C1-D1: **T840-li-ye**[C1a] + **ta-SKY(.GOD)**[C1B] + **HUN.NAL.YE7**[D1]. Drawing by this author based on photograph in Kidder and Ekholm (1951).

Figure 6.79. Context of the sign at A1b in the PMA flare. (a) Text of the Delataille pot at A2: **na-la** modifier to the **ka-ka-wa** ‘chocolate’ glyph. From Berjonneau and Sonnery (1985). (b) Covarrubias subjudice text at A1-B1: **na-?le**. From Covarrubias (1957). (c) PMA flare text at A1a: **yo-?le/?7o**. Notice that the general outline of the sign at B1 in the Covarrubias subjudice, **?le**, resembles that of the PMN flare at A1b.

Figure 6.80. Emic nomenclature for various types of objects or for aspects/qualities of those objects.

Figure 6.1.



Figure 6.2.

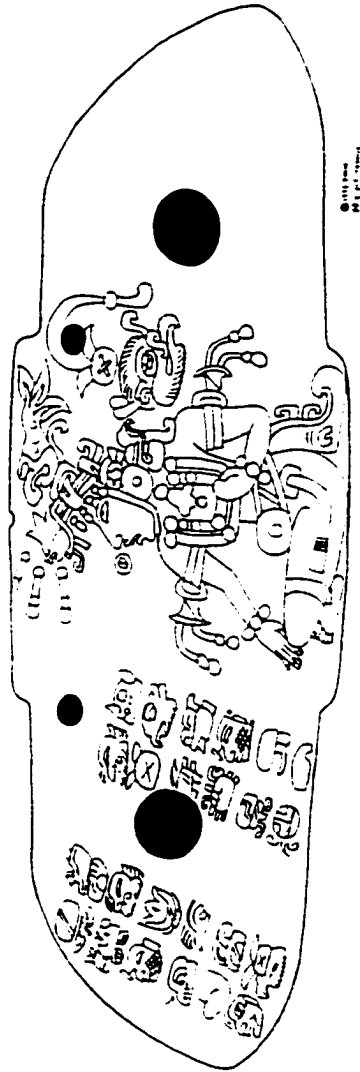


Figure 6.3.

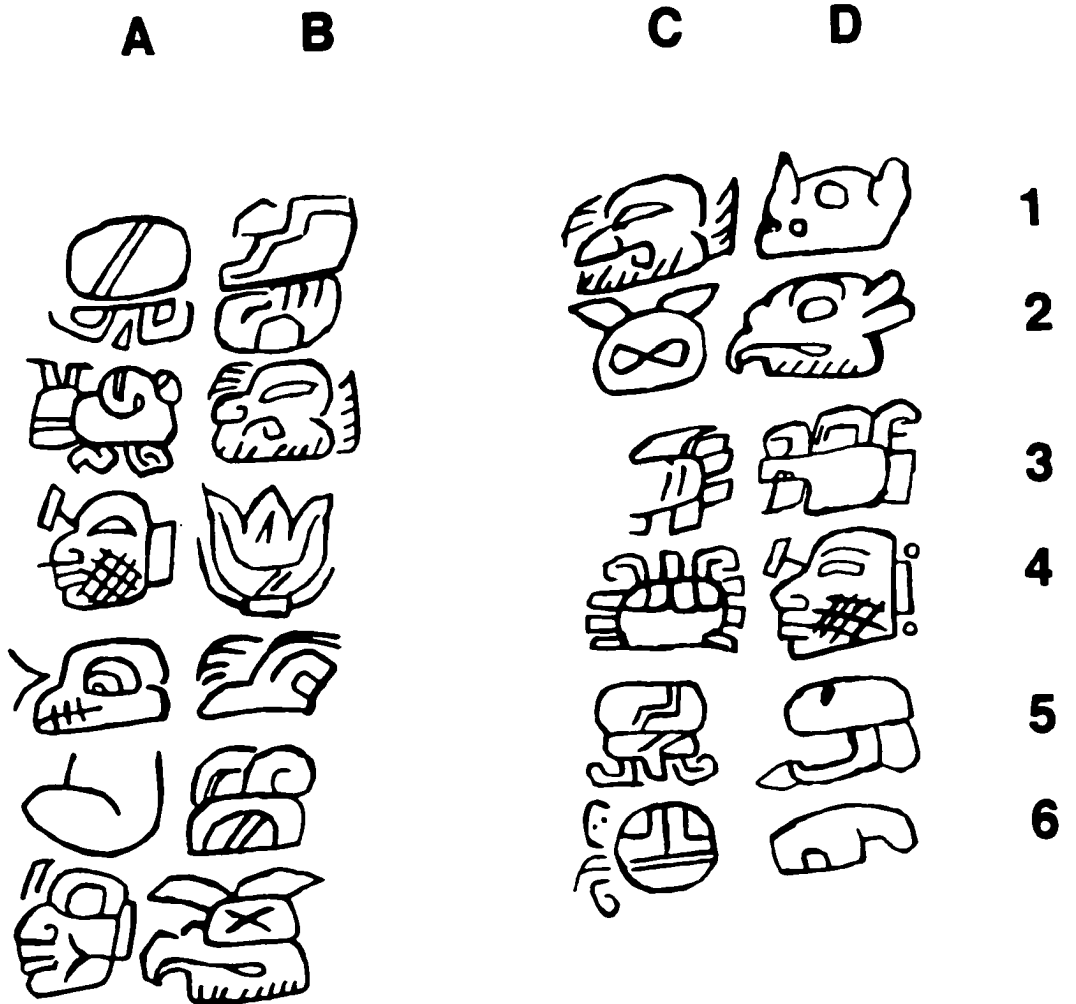


Figure 6.4.

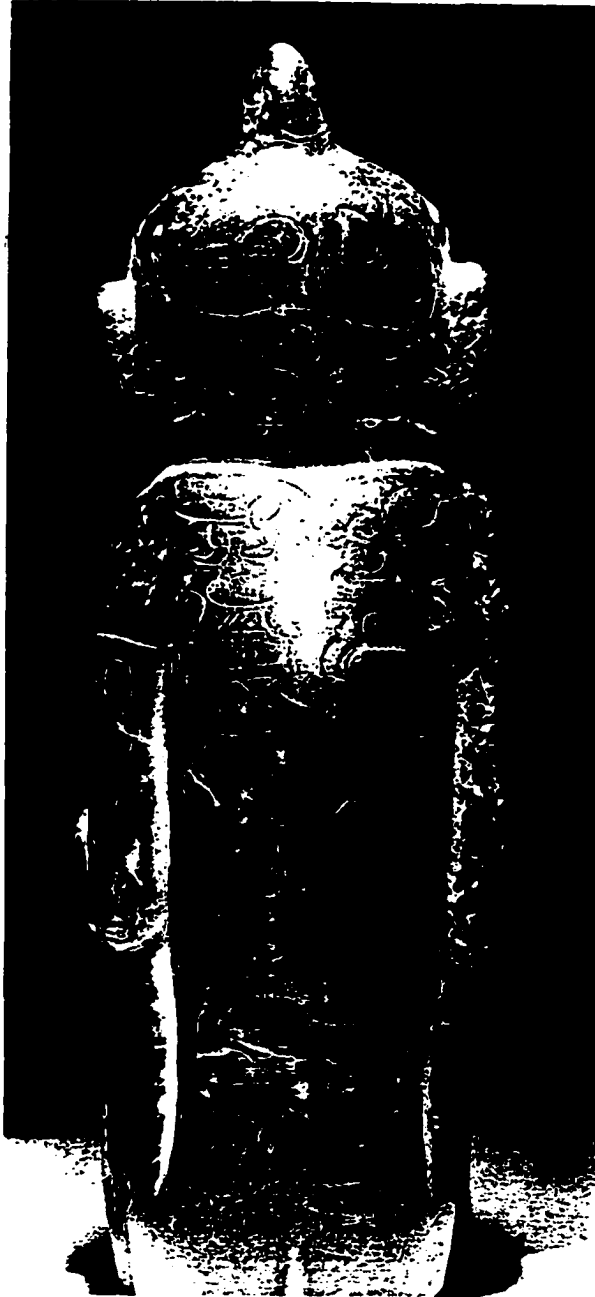


Figure 6.5.

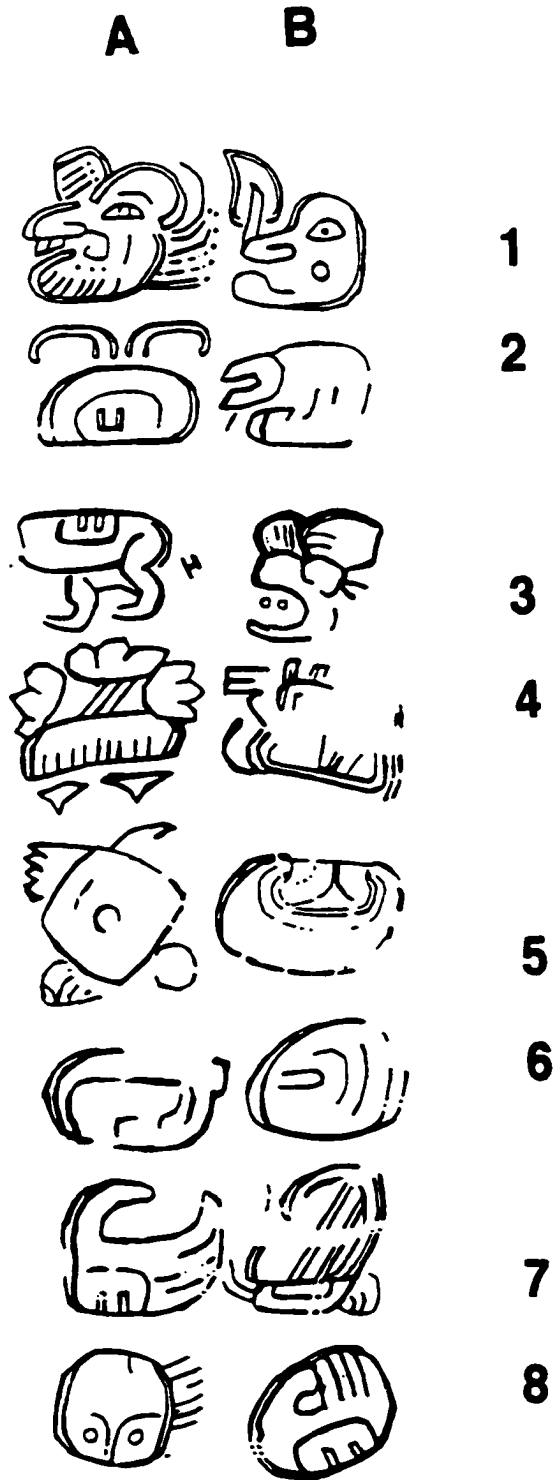


Figure 6.6.



Figure 6.7.

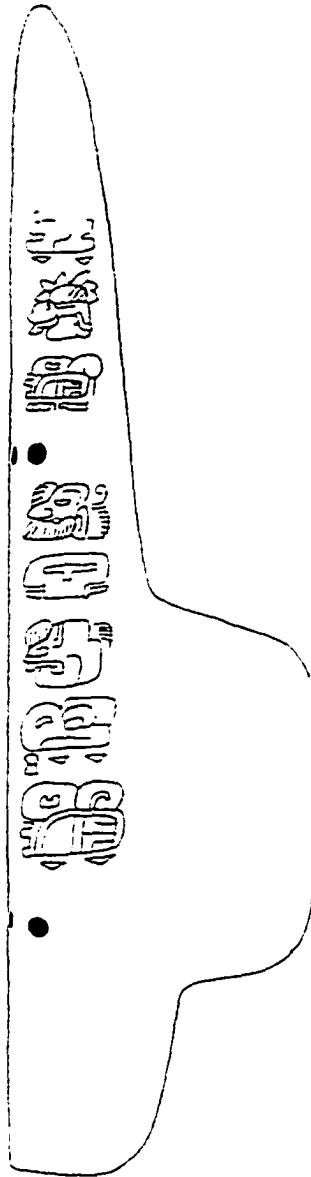


Figure 6.8.

A

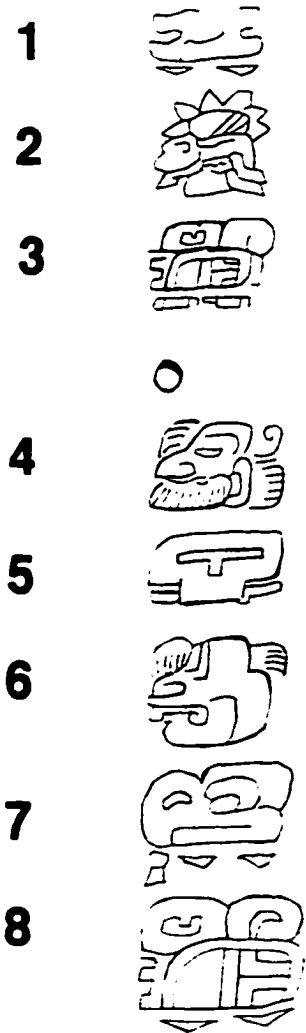


Figure 6.9.



Figure 6.10.

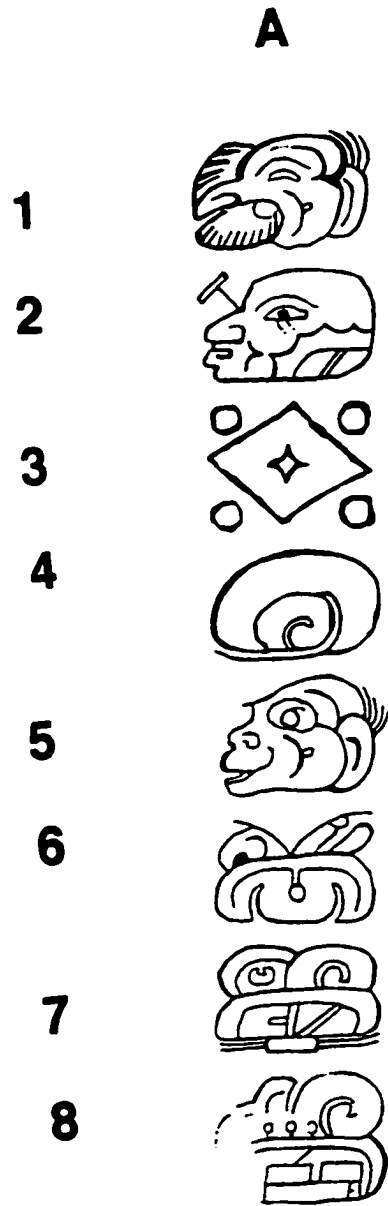


Figure 6.11.

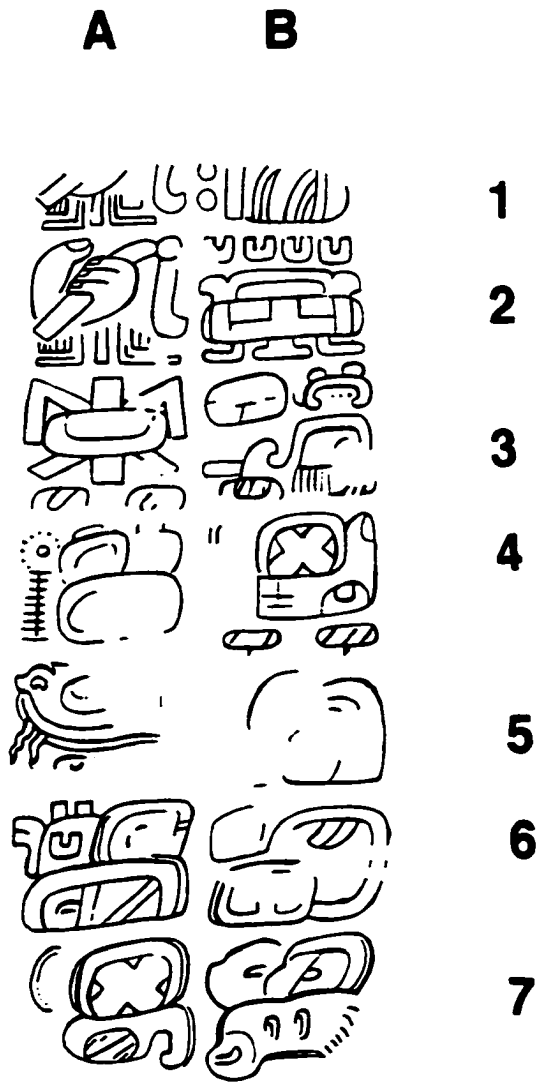


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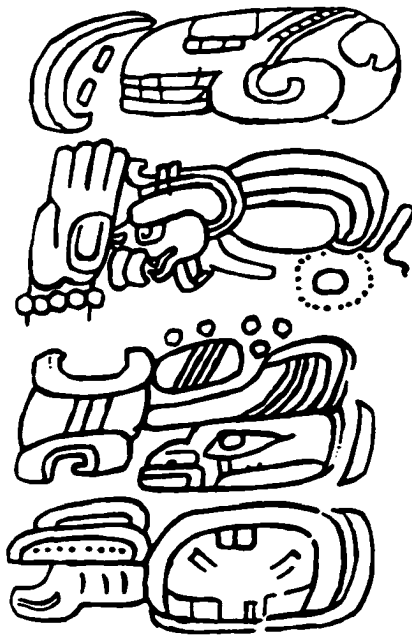


Figure 6.13.



Figure 6.14.

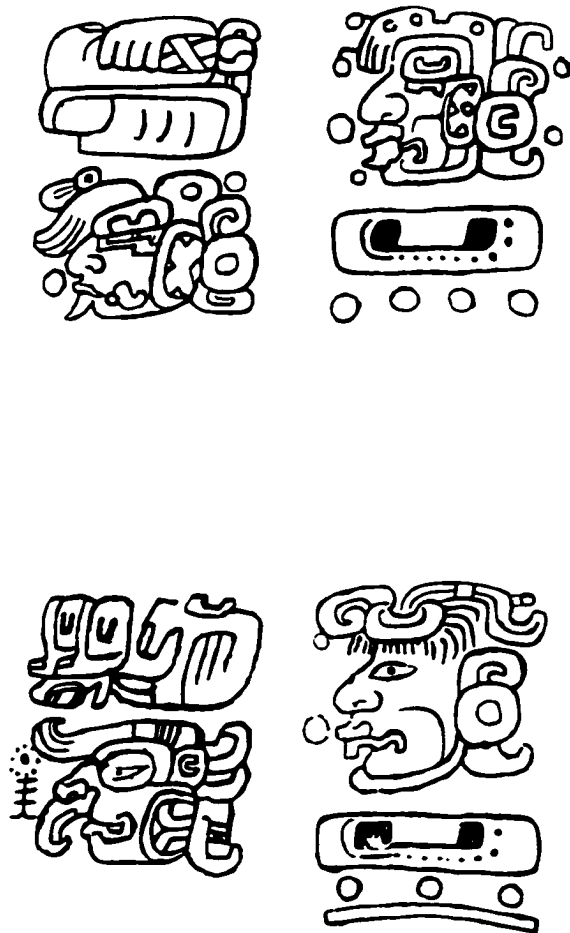


Figure 6.15.

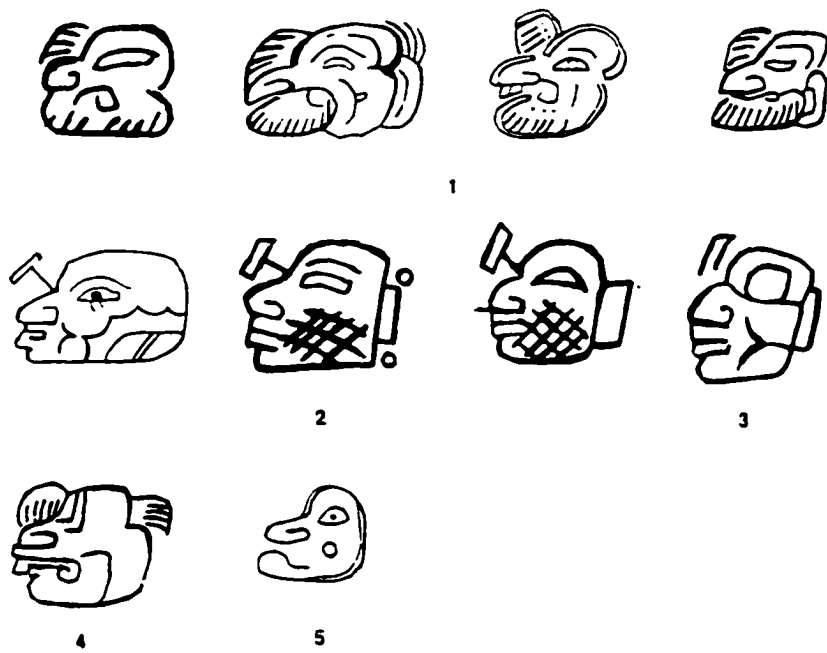


Figure 6.16.



31



32



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Figure 6.17.

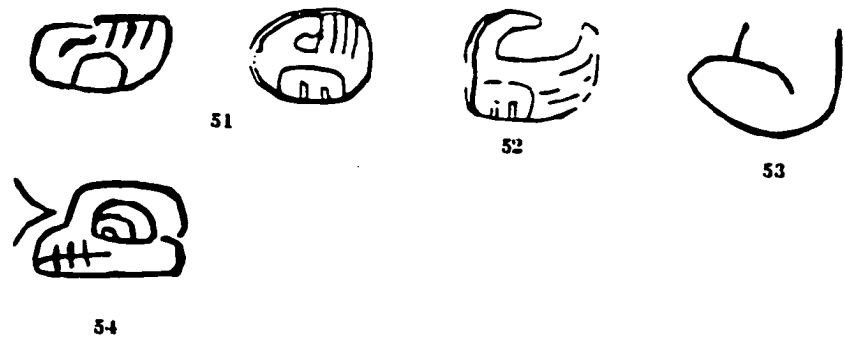


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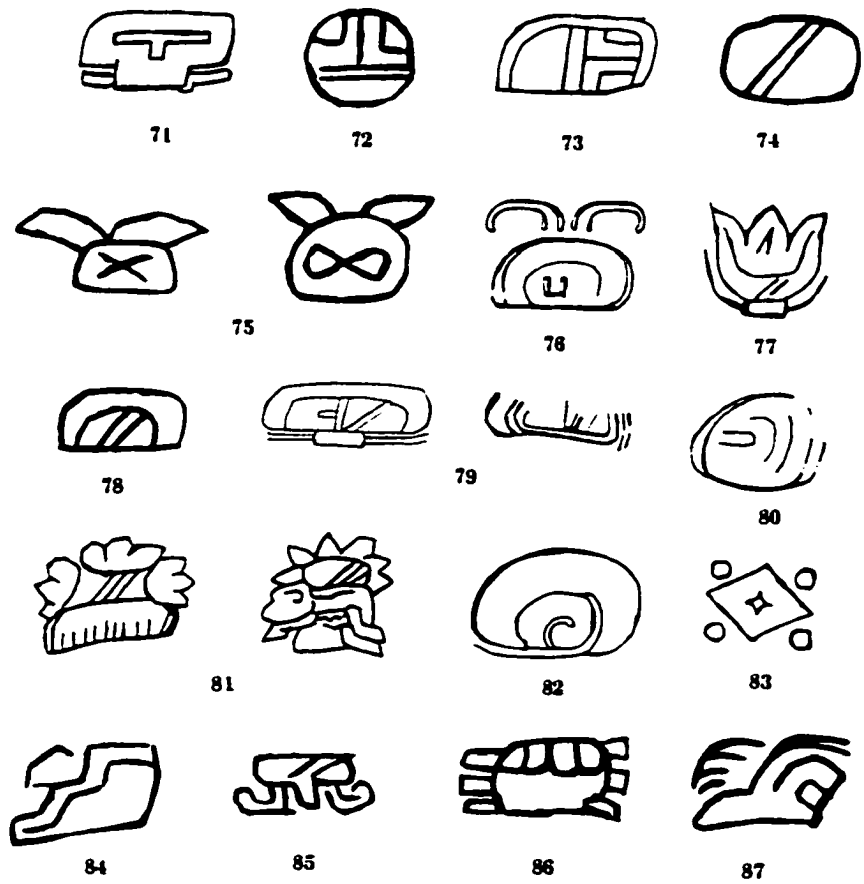


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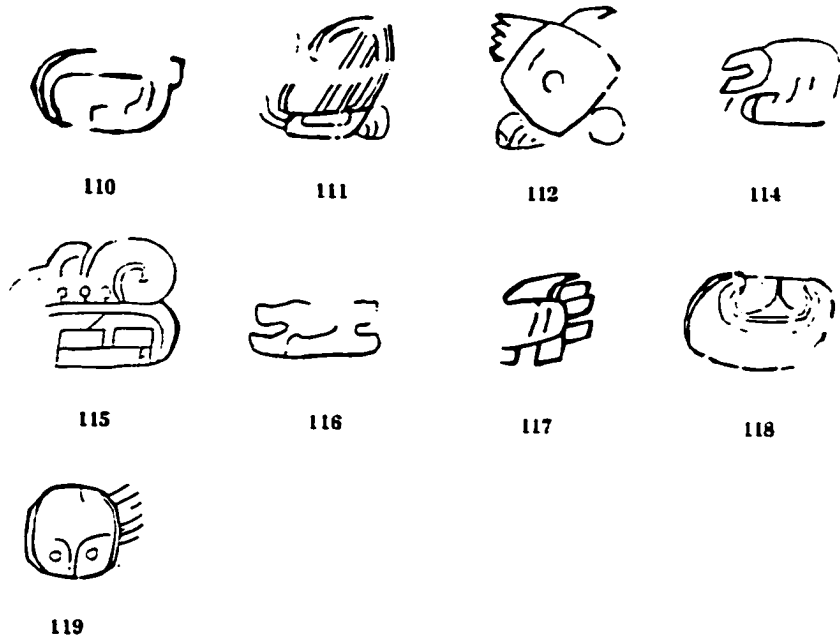


Figure 6.20.

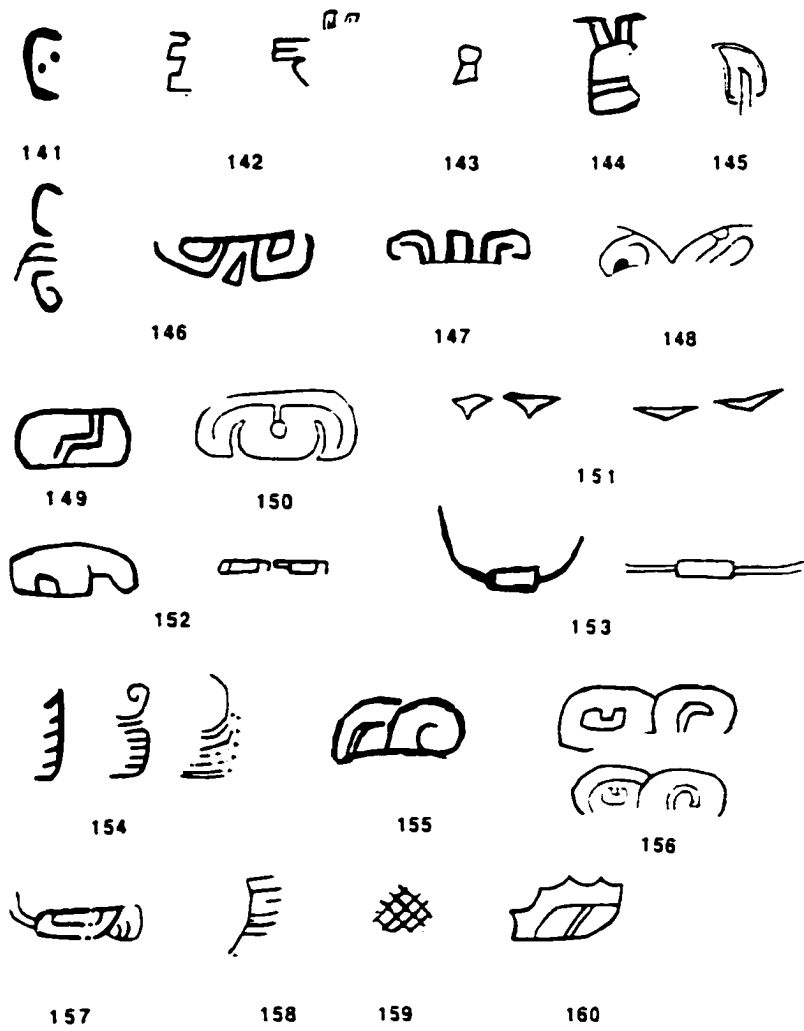
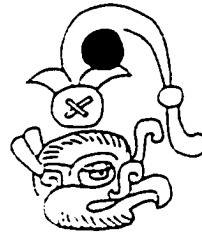


Figure 6.21.



a.



b.



c.



d.

Figure 6.22.



a.



b.



c.



d.



e.



f.

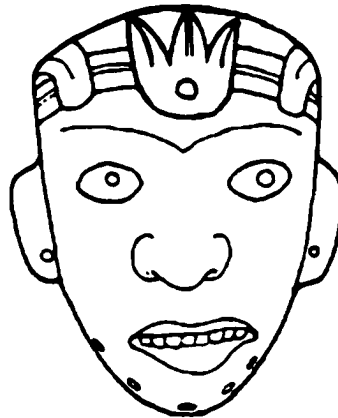
Figure 6.23.



a.



b.



c.

Figure 6.24.

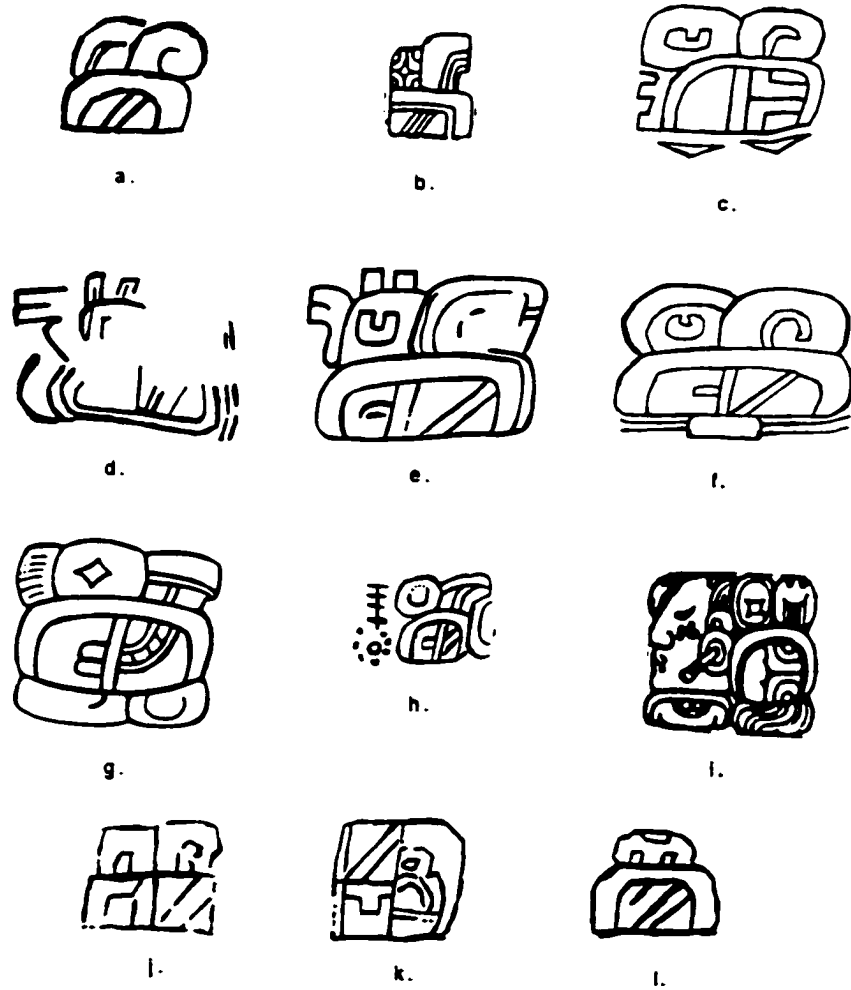


Figure 6.25.



a.



c.



d.



e.

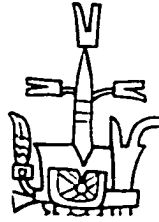


f.

Figure 6.26.



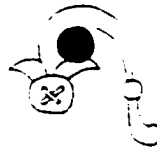
a.



b.



c.



d.

Figure 6.27.



a.



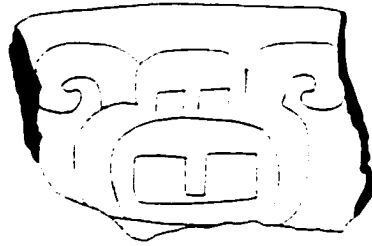
b.



c.



d.



e.



f.



g.

Figure 6.28.



a.



b.



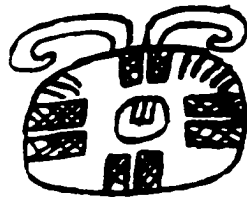
c.



d.



e.



f.

Figure 6.29.



a.



b.



c.



d.

Figure 6.30.



a.



b.



c.



d.



e.



f.



g.

Figure 6.31.



a.



b.



c.

Figure 6.32.



a.



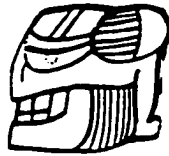
b.



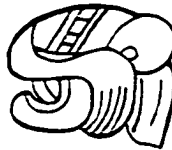
c.



d.



e.



f.



g.

Figure 6.33.



a.



b.



c.



d.



e.

Figure 6.34.



a.



b.

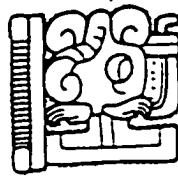
Figure 6.35.



a.



b.

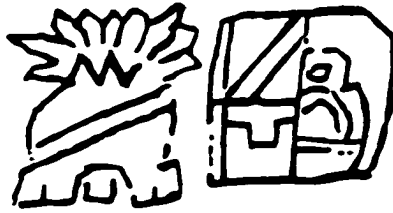


c.

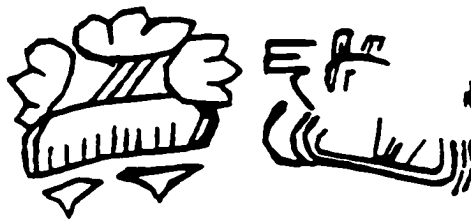


d.

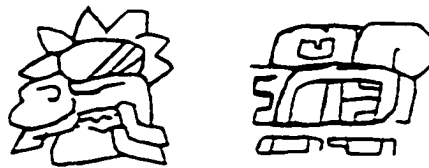
Figure 6.36.



a.

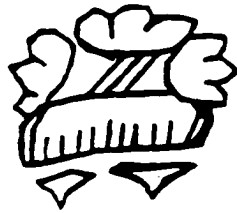


b.



c.

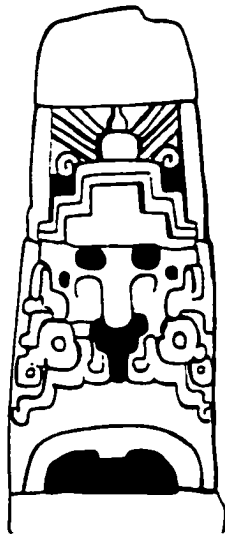
Figure 6.37.



a.



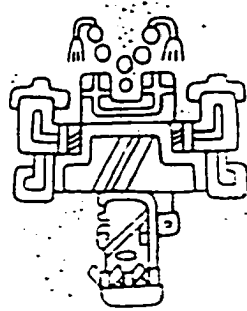
b.



c.

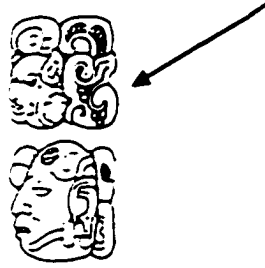


d.



e.

Figure 6.38.



a.



b.



c.



d.

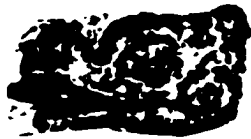
Figure 6.39.



a.



b.



c.

Figure 6.40.



a.

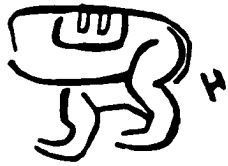


b.



c.

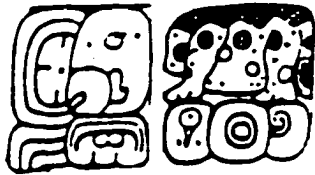
Figure 6.41.



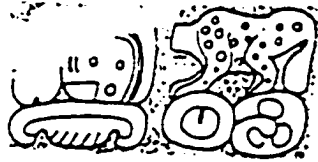
a.



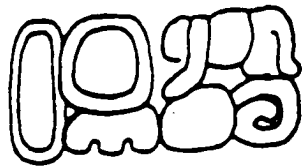
b.



c.



d.



e.



f.

Figure 6.42.

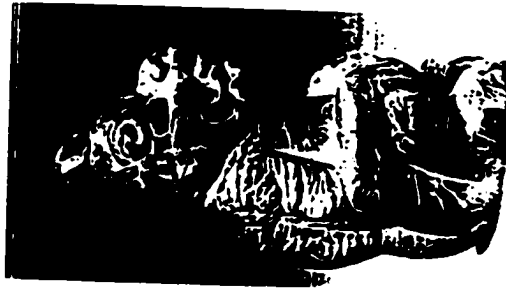


Figure 6.43.

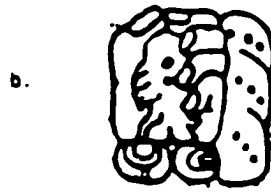


Figure 6.44.



Figure 6.45.



a.



b.



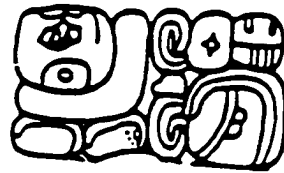
c.



d.

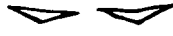


e.



f.

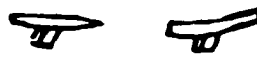
Figure 6.46.



a.



b.



c.



d.

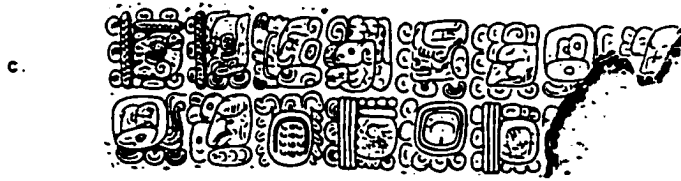
Figure 6.47.



a.



b.



c.



d.

Figure 6.48.

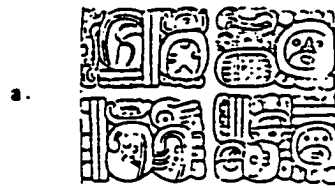
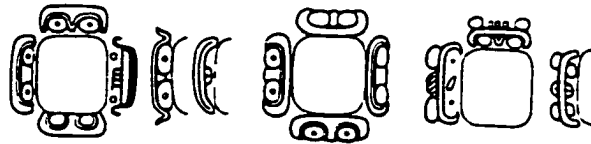


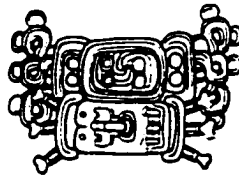
Figure 6.49.



a.



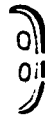
b.



c.



d.



e.



f.

Figure 6.50.



a.

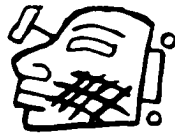


b.



c.

Figure 6.51.



a.



b.

Figure 6.52.



Figure 6.53.

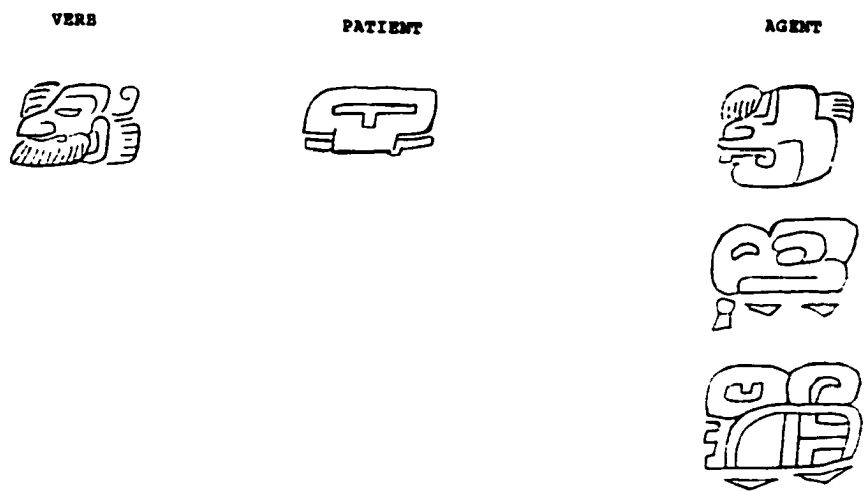


Figure 6.54.

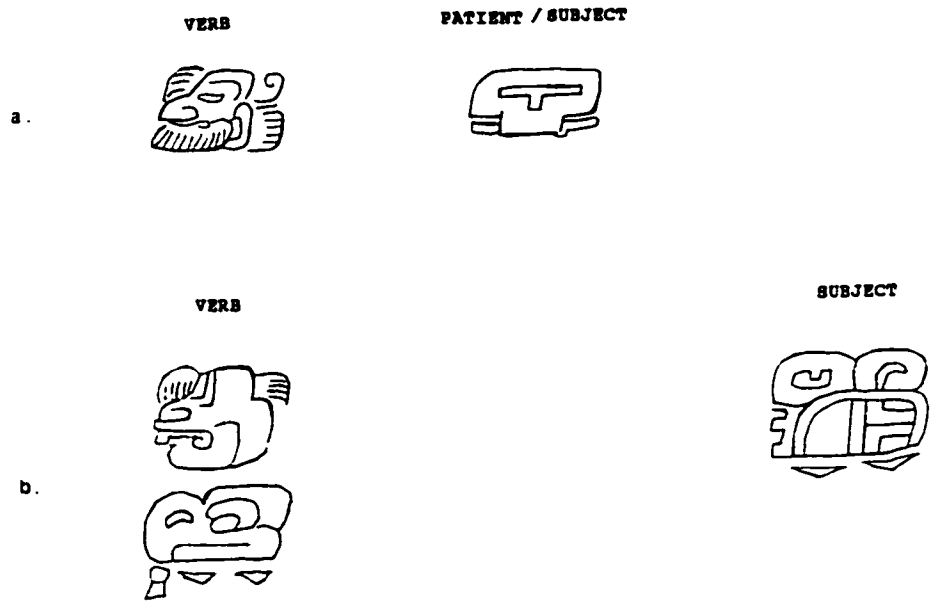


Figure 6.56.

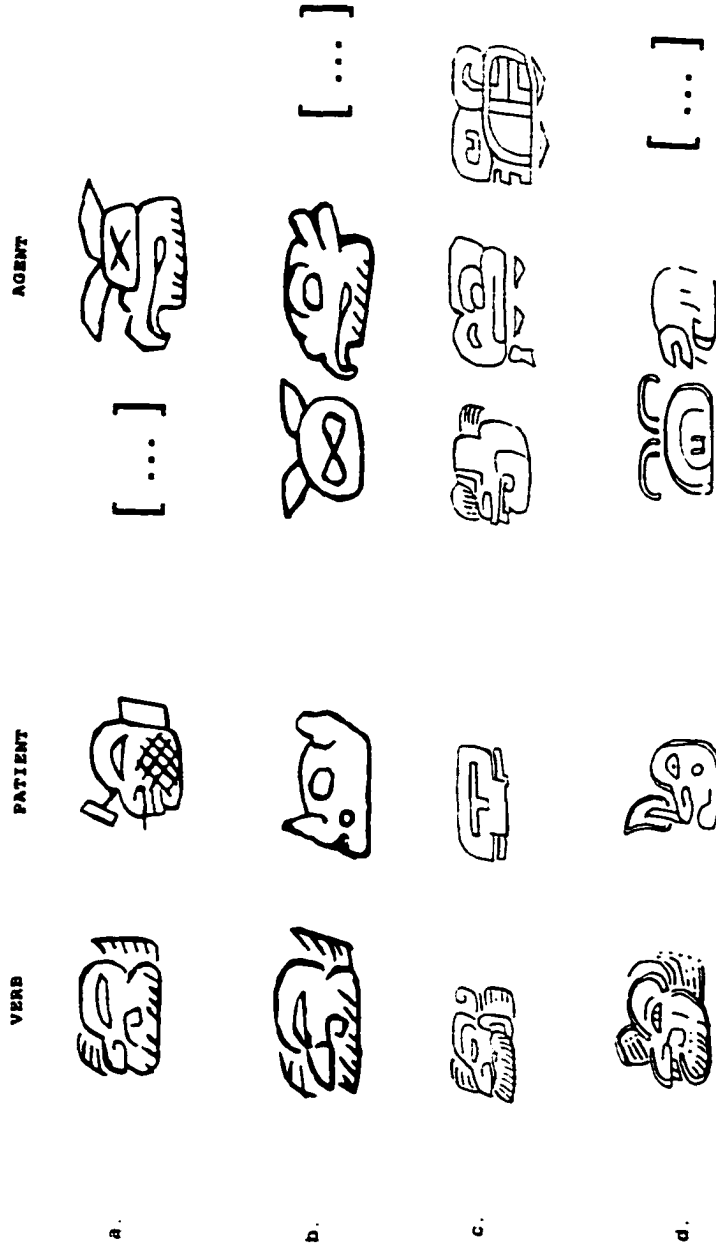


Figure 6.57.

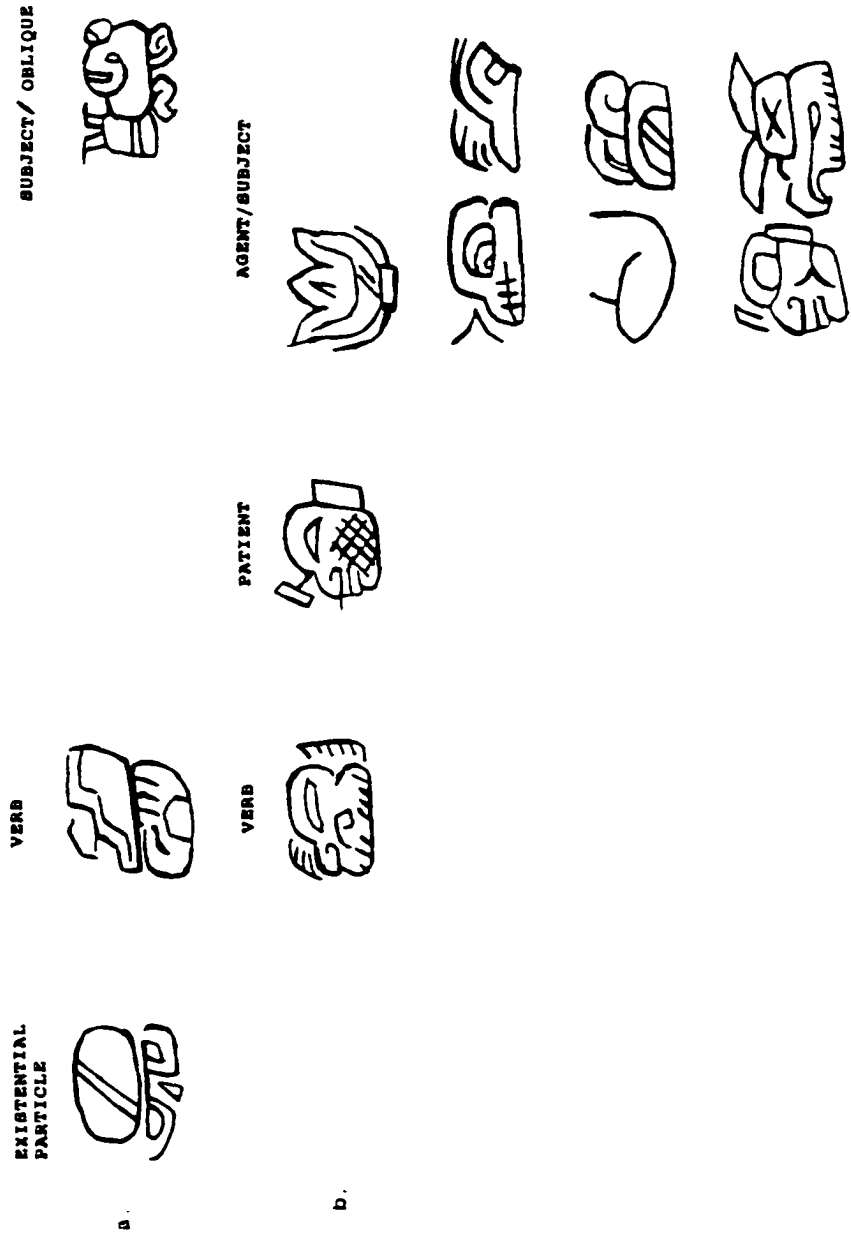


Figure 6.58.

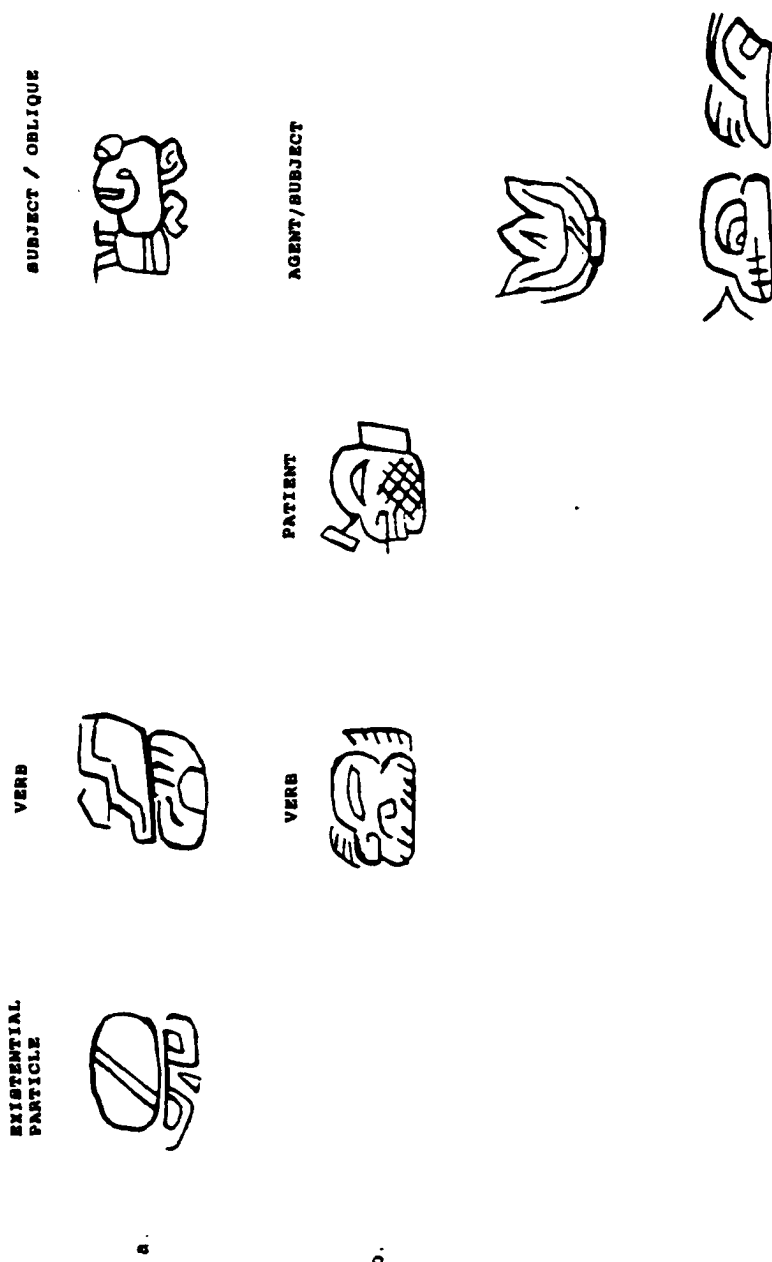


Figure 6.59.

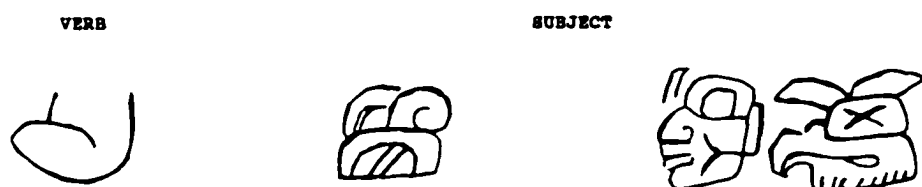


Figure 6.60.

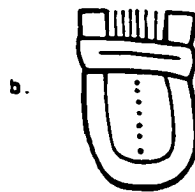


Figure 6.61.

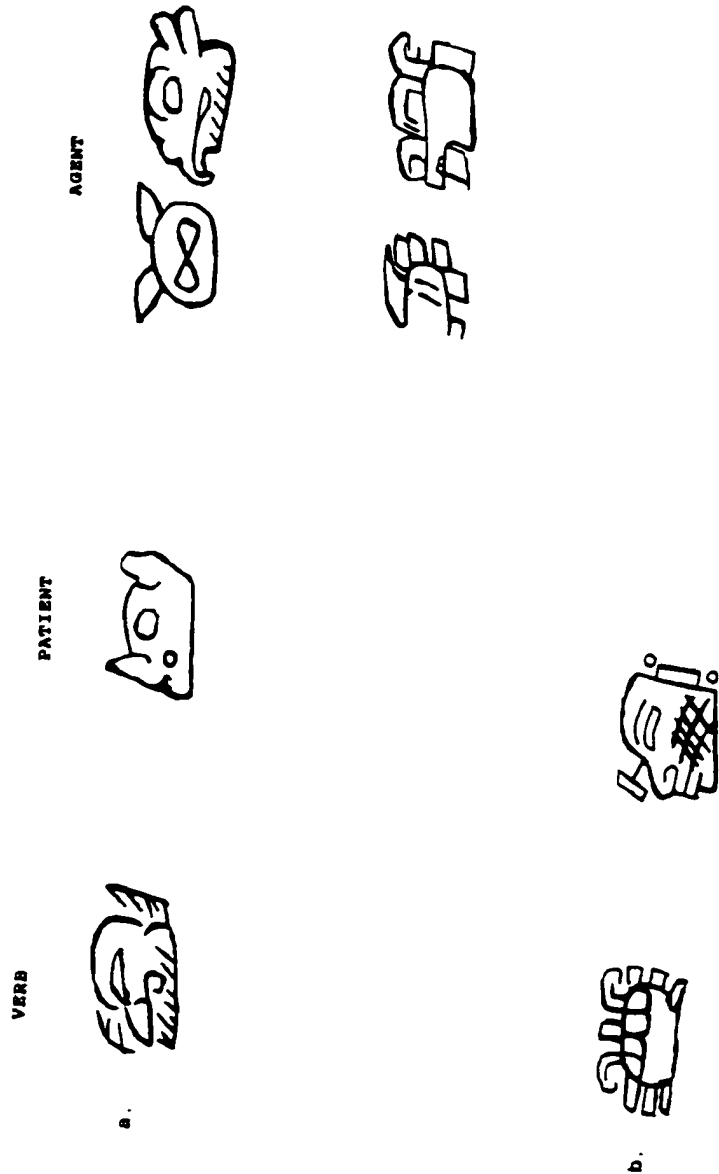


Figure 6.62.

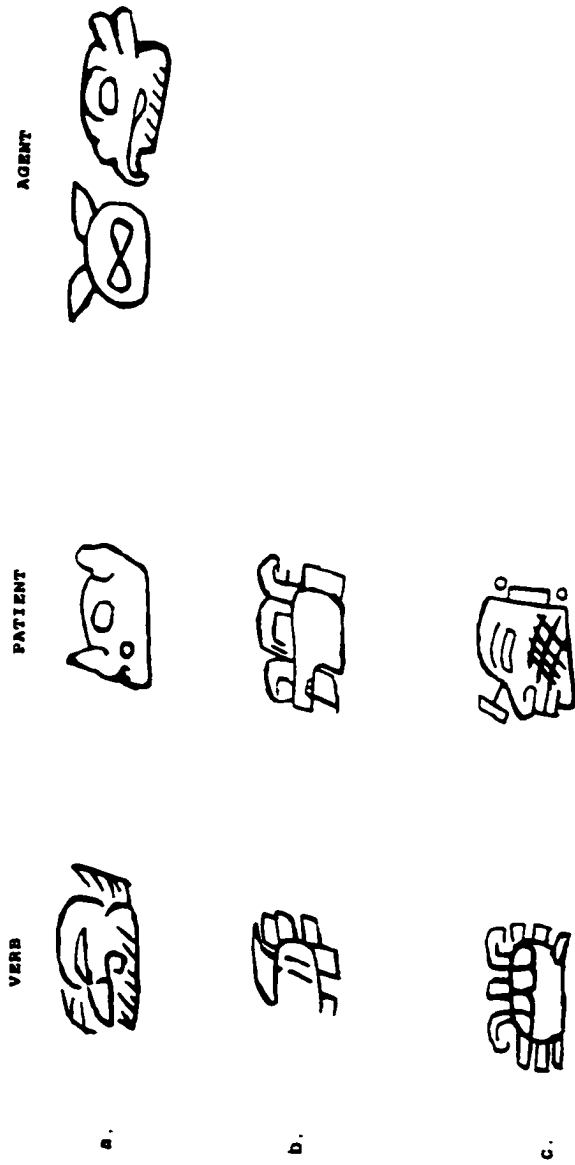


Figure 6.63.

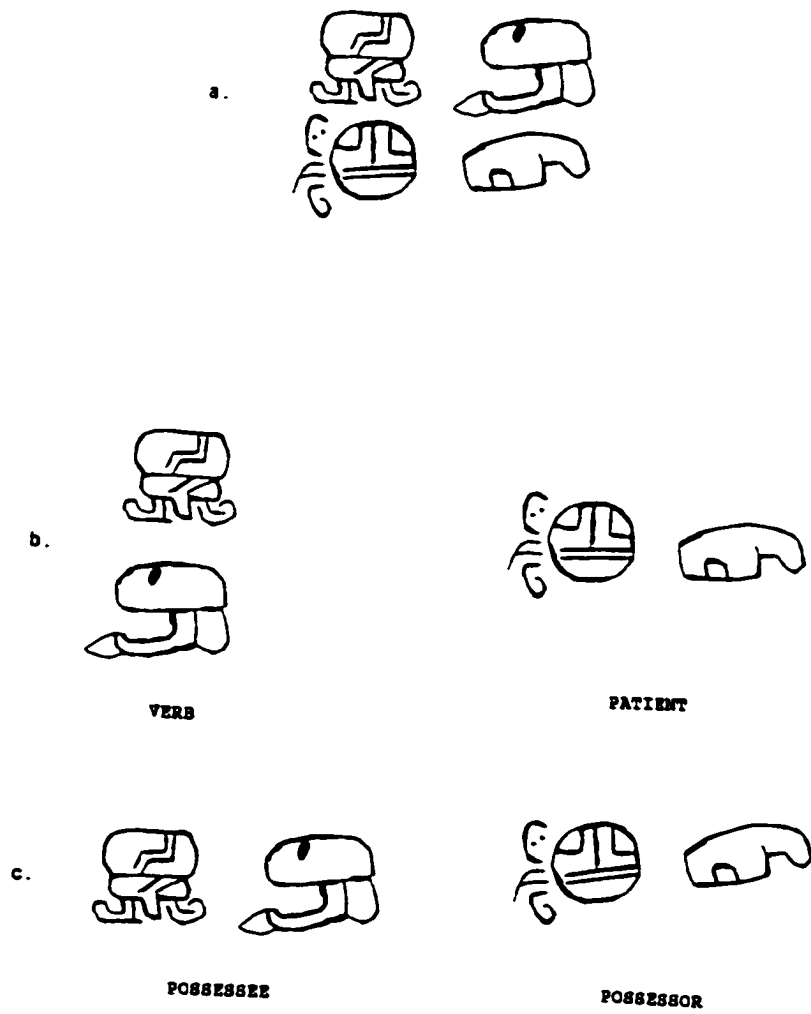


Figure 6.64.

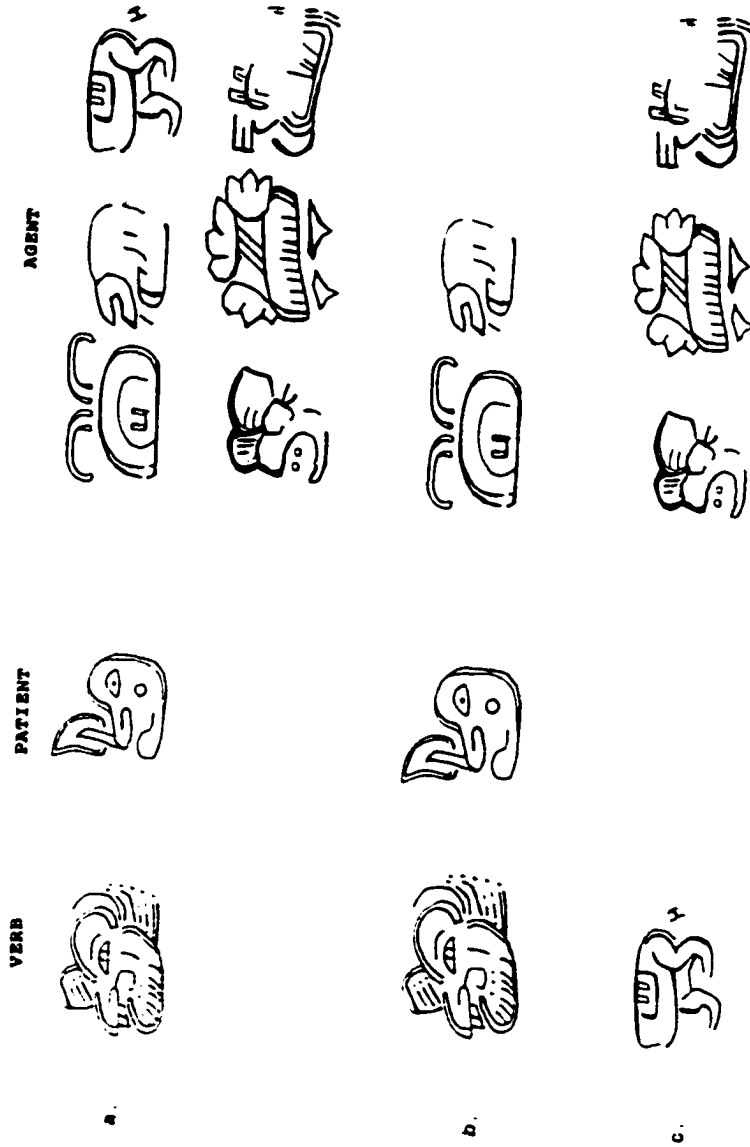


Figure 6.65.

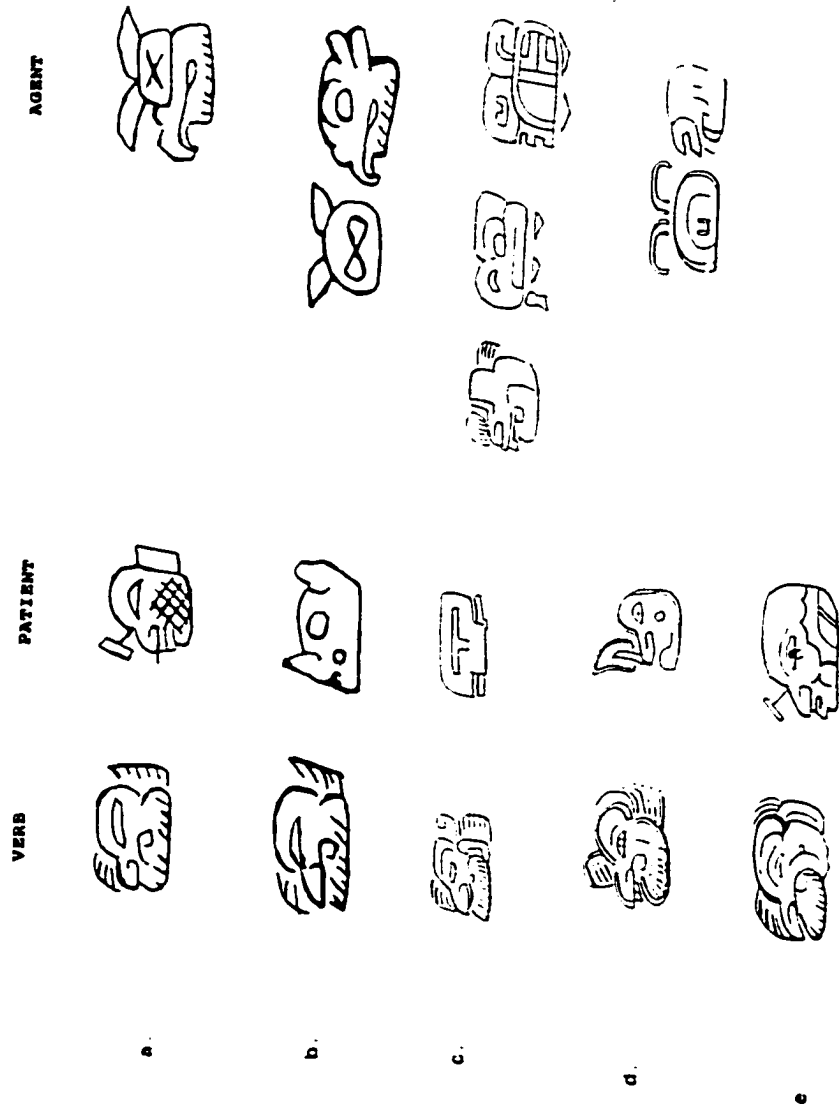


Figure 6.66.

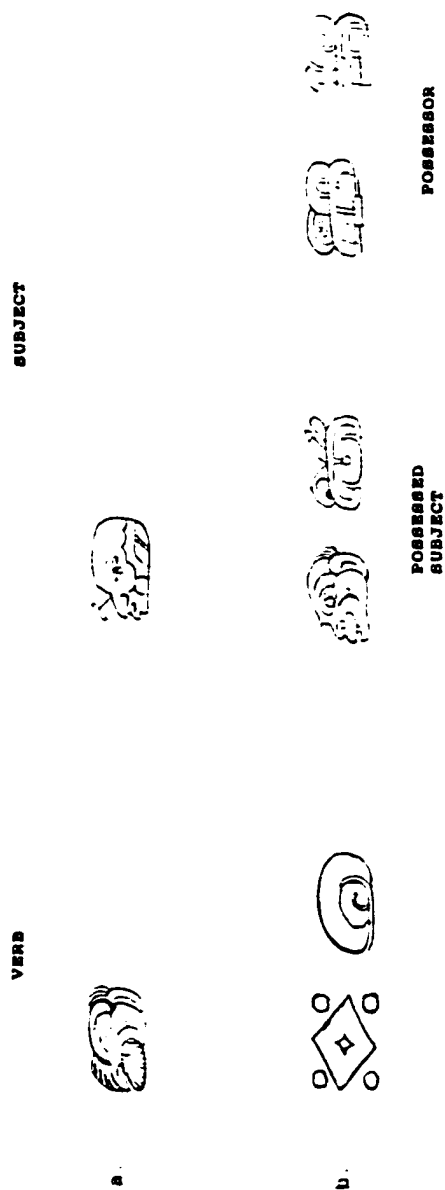
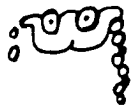


Figure 6.67.



a.



b.



c.



d.



e.



f.

Figure 6.68.



a.



b.



c.

Figure 6.69.

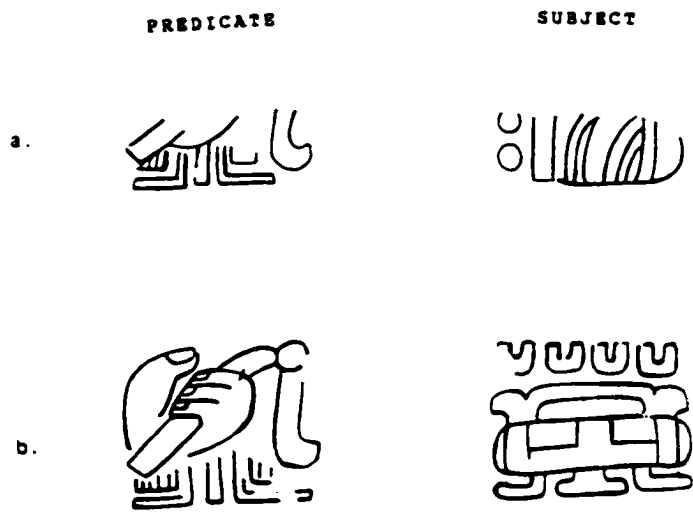


Figure 6.70.

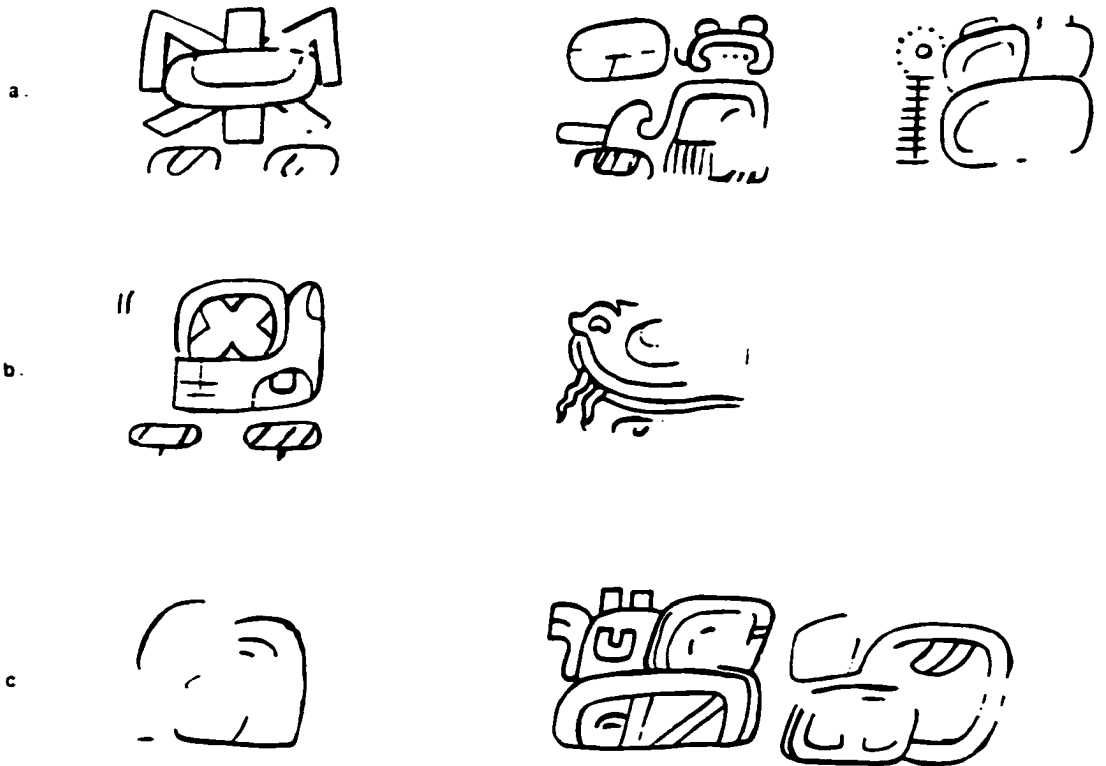


Figure 6.71.

POSSESSOR



POSSESSOR



Figure 6.72.



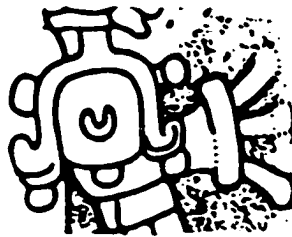
a.



b.



c.



d.

Figure 6.73.



a.



b.

Figure 6.74.



Figure 6.75.

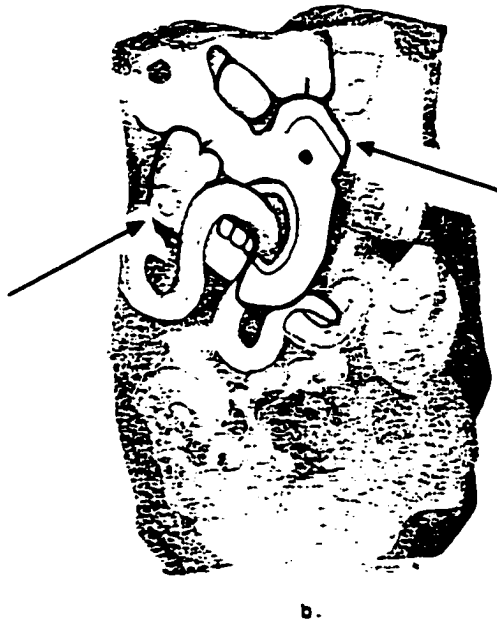
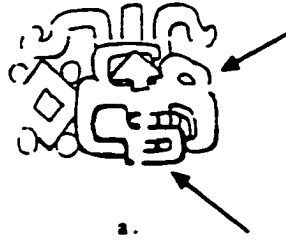


Figure 6.76.

PREDICATE



SUBJECT



**POSSESSED
SUBJECT**



Figure 6.77.

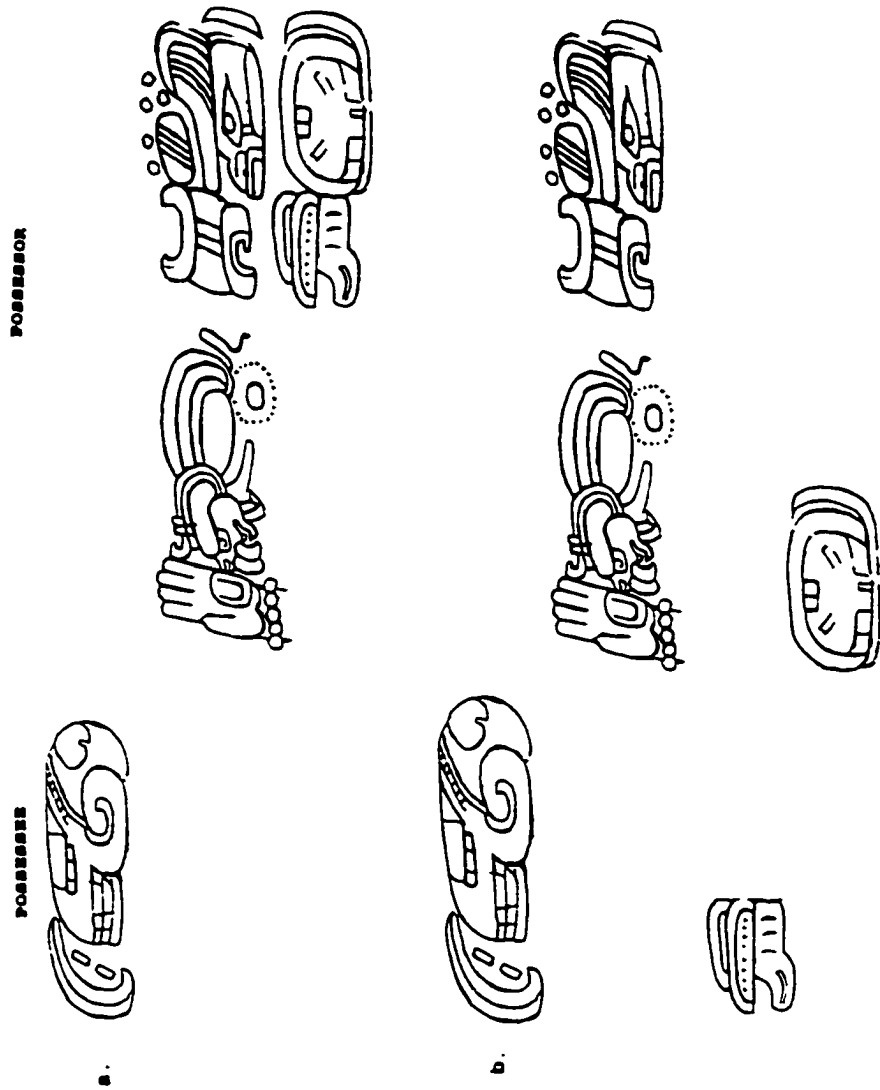


Figure 6.78.

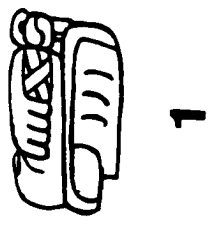
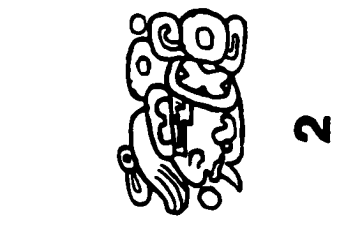
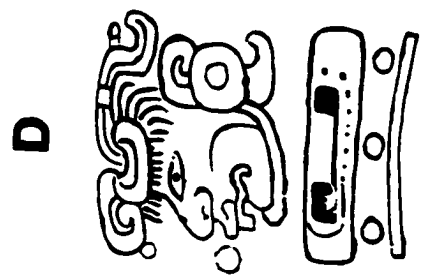
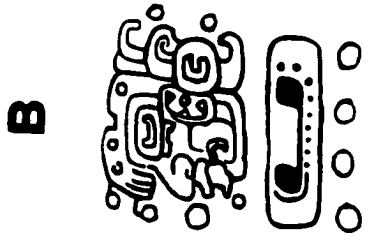


Figure 6.79.



a.

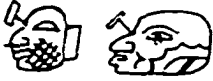






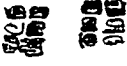











b.



c.

Figure 6.80.

	Glyphic Names	Possible Referents
a	 PAM(?) 'flat thing'	
b	 7IK' 'wind' (musical instrument?)	
c	 SPROUT.SPOTTED.MAN	
d	 BAT.HEAD 'incising(?)'	
e	 7UI 'bead, necklace'	
f	 ?? 'pendant(?)'	
g	 ?-b-i-i-i	
h	 ylo-l[e 'heart'	
i	 B'AN 'image, statue'	

CHAPTER VII: LIST OF FIGURES

Figure 7.1. Highland texts with numerical coefficients occupying own glyph block. (a) Kaminaljuyu Stela 10, E1-F1: 15-MONTH. Drawing by author. (b) Abaj Takalik Stela 53, A1-B1: 15-?MONTH. Photograph from Orrego (1990).

Figure 7.2. Lowland texts with numerical coefficients occupying own glyph block. (a) El Mirador Stela 2, A7: 15. From Hansen (1991). (b) Delataille pot, A6-B6: 15-TZ'AK(AB'). From Berjonneau and Sonnery (1985).

Figure 7.3. Abaj Takalik Stela 5. (a) Left and right sides of stela. Shows a seated noble underneath a glyphic column on the left, and a lord seated on a throne underneath a glyphic column on the right. (b) Front of the monument. It shows two nobles facing each other, underneath a floating ancestral figure, and separated by two glyphic columns, each headed by a Long Count date. The left Long Count places the monument in the year A.D. 125 (Justeson 1997). The figure on the left side of the monument may correspond to the figure to the right of the two glyphic columns on the front side of the monument, and vice versa, as suggested by the personages' likely glyphic names embedded in their headdresses. Drawing by James Porter, courtesy of John Graham.

Figure 7.4. Text of DO celt. Drawing by this author.

Figure 7.5. Comparison of iconic elements and iconography of portrayed individuals. (a) Abaj Takalik Stela 5, dated to A.D. 125. Drawing by James Porter, courtesy of John Graham. (b) DO celt, dated to A.D. 120. Drawing by Linda Schele (Schele and Miller 1986:82, Plate 22b). The following details correspond closely in arrangement and style: chin mask of Rain God, belt head and jade plaques, jade shark heads on knees with speech/music scrolls coming out of their mouths (these were probably made of dangling cloth and bead assemblages), and sets of three beaded tinklers along sheens.

Figure 7.6. Isolated grammatical markers in DO celt: (a) B3: T1 7u- for 7u- 'third person ergative prefix'. (b) A7: T1 7u for 7u-, and T24 li for -Vl 'possessive suffix' in possible

7u-K'IN-li/IL 7u-k'in-VI '(It is) the reign/day/property of' expression. (c) A4: T51/53 **ta** for proto-Ch'olan ***tä** 'generic preposition' in possible **ta-7AJAW tä+7ajaw** 'as lord' expression.

Figure 7.7. Possible T168 **7AJAW(-wa)** 'lord' glyph on side of Stela 5, pointed out by John Justeson.

Figure 7.8. (a) Kichpanha bone stylus, dated to ca. .A.D 150 but not much earlier (Kathryn Reese-Taylor, personal communication 2001). Drawing by Peter Mathews. (b) Abaj Takalik Monument 11, unclear dating due to prehispanic reburial during early Postclassic period, but showing an elaborate Protoclassic style. Drawing by James Porter, from Graham and Porter (1988).

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After drawing by Stephen Houston.

Figure 7.13. Frozen uses of T23 as EARTH/CAVE icon in Classic Mayan writing.

(a) Tablet of the 96 Glyphs at Palenque, glyph A4, read 7AJ-5-PYRAMID-NAH 'He of the 5 [pyramid] house', with no T23 sign. After drawing by Linda Schele. (b)

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Middle Preclassic Olmec-style Ahuelican Greenstone Tablet showing PYRAMID-EARTH/CAVE-HEARTHSTONES, with down-turning ground motif in the position where T23 is found in the Tikal Stela 26 example.

Figure 7.14. Source of EYEBROW and DOUBLE.MERLON motif in Olmec art: Maize

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Figure 7.16. Mayan title components. Classic period: (a) and (b), drawn by Linda Schele. (a) T35(.1016) K'UH(UL) 'god/divine'. (b) T35(.1016) + VARIABLE + T168 7AJAW 'Divine X Lord'. Late Preclassic and Early Classic examples: (c)-(f), drawn by this author. (c) JM spoon: DOUBLE.MERLON-MAN-7AJAW-?1a. (d) PMY jaguar: EYEBROW.DOUBLE.MERLON-7AJAW. (e) DO celt: EYEBROW.DOUBLE.MERLON-7AJAW. (f) JM disk: DOUBLE.MERLON-CHAN(na)-7AJAW.

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Figure 7.1.

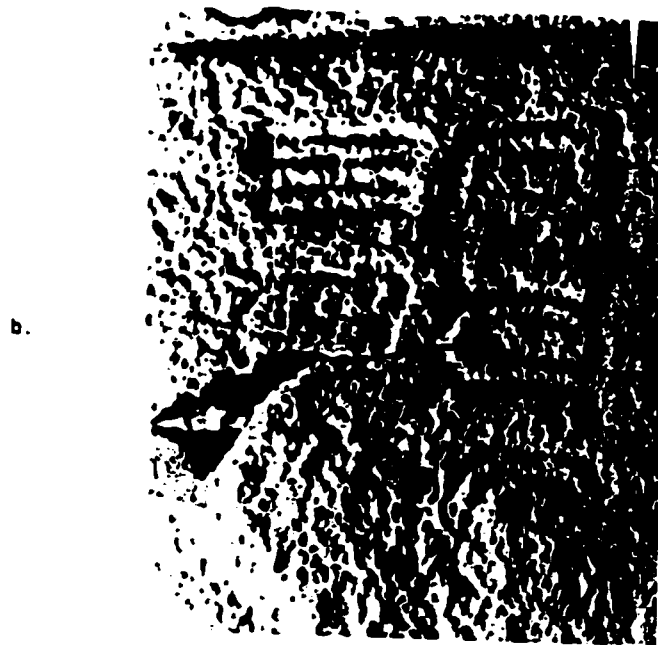


Figure 7.2.



Figure 7.3.

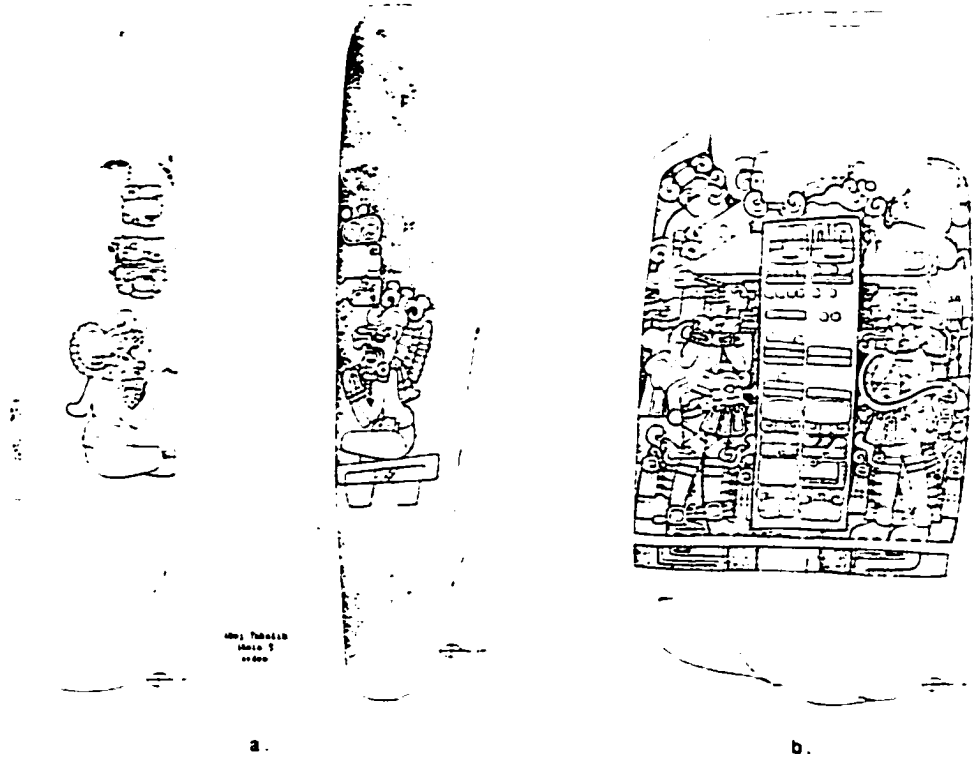


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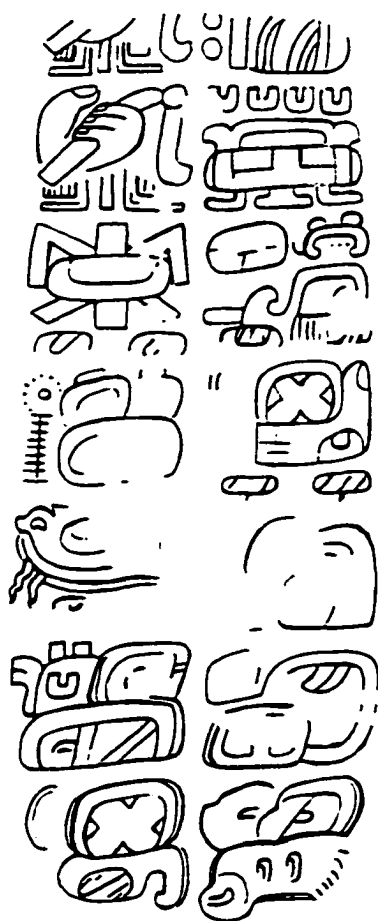


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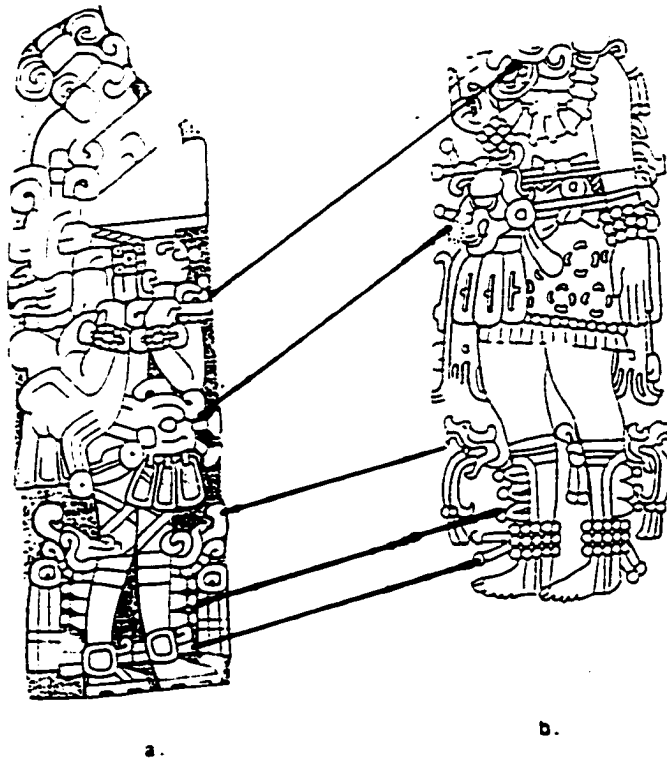


Figure 7.6.



a.



b.



c.

Figure 7.7.

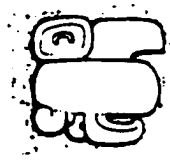
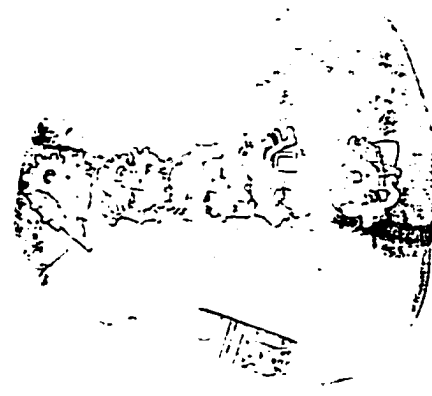


Figure 7.8.



Abu Takah Monument II

b.



Figure 7.9.

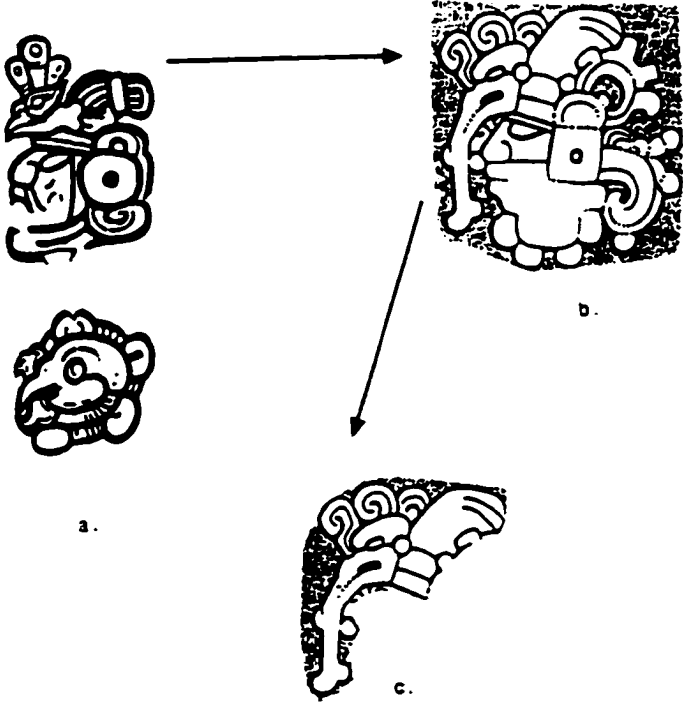


Figure 7.10.



a.



b.

Figure 7.11.



a)



b)



c)



d)

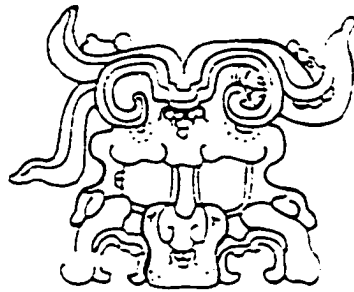


e)

Figure 7.12.



a.)

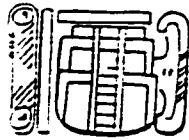


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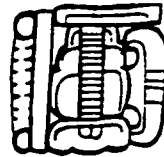


c.)

Figure 7.13.



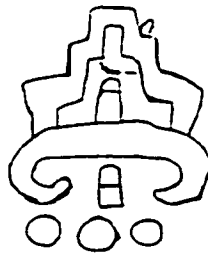
a)



b)



c)



d)

Figure 7.14.

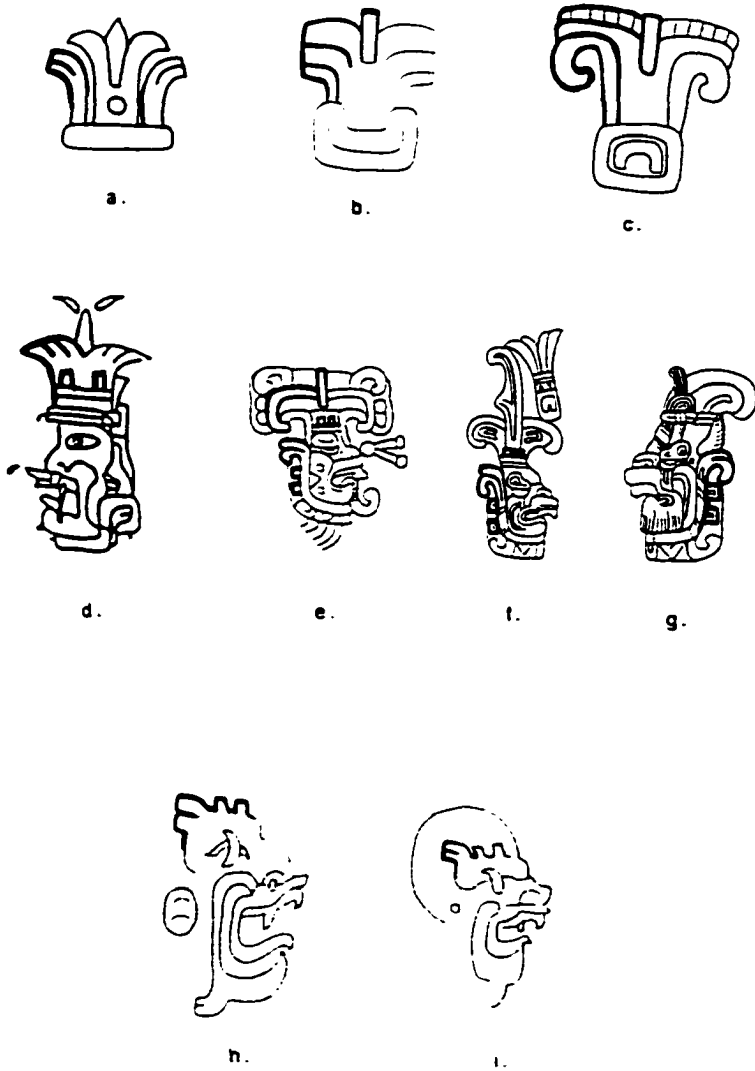


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a.

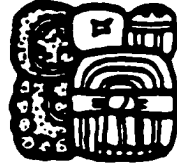


b.

Figure 7.16.



a.



b.



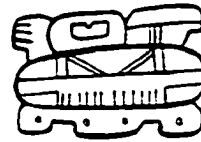
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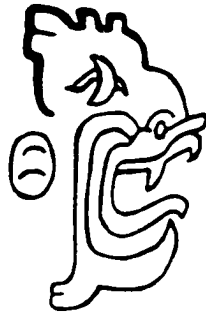


e.



f.

Figure 7.17.



a.



b.

Figure 7.18.

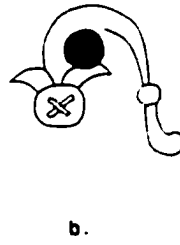
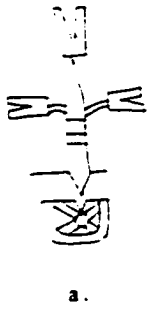


Figure 7.19.



a.

b.

c.



d.



e.

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Figure 8.2. Syllabary Part II: IV-xV syllabographs.

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Figure 8.1.











	i	e	a	o	u
p					
b'					
m					
w					
t					
t'					
n					

Figure 8.2.







	i	e	a	o	u
l					
tz					
tz'					
s					
ch					
ch'					
x					

Figure 8.3.


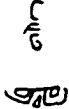





	i	e	a	o	u
y					
k					
k'					
j					
ʔ					
h					

Figure 8.4.



a.



b.

Figure 8.5.



Figure 8.6.

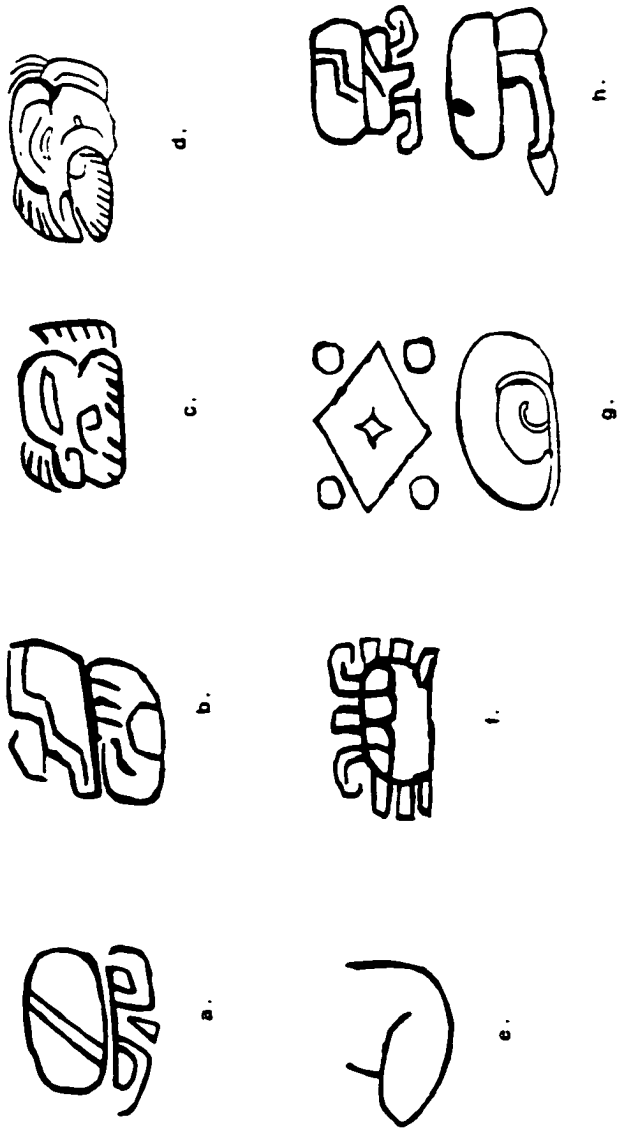


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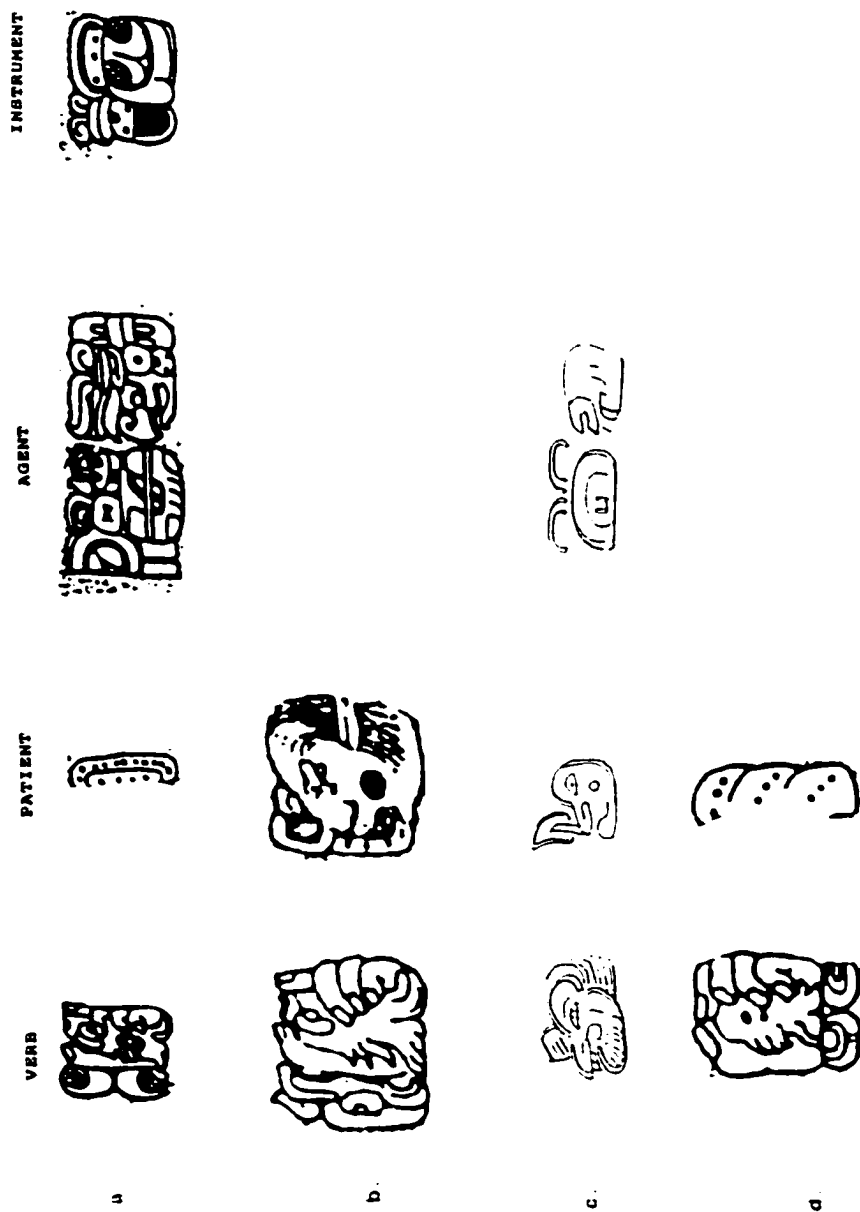


a.



b.

Figure 8.8.



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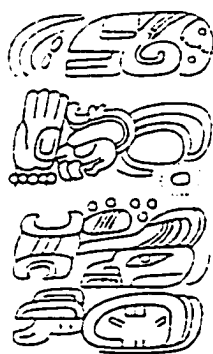


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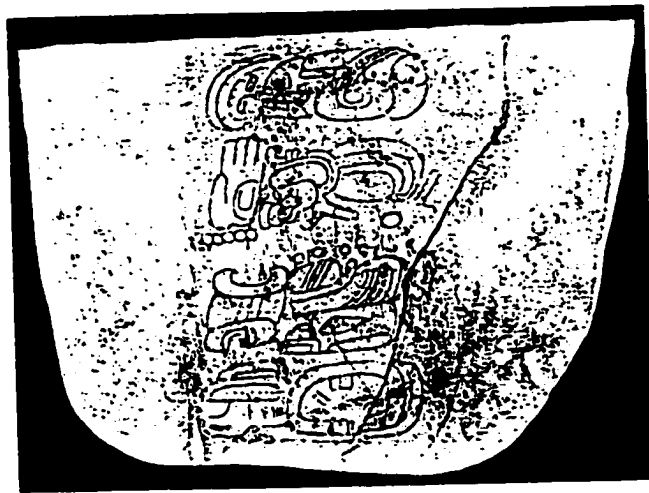


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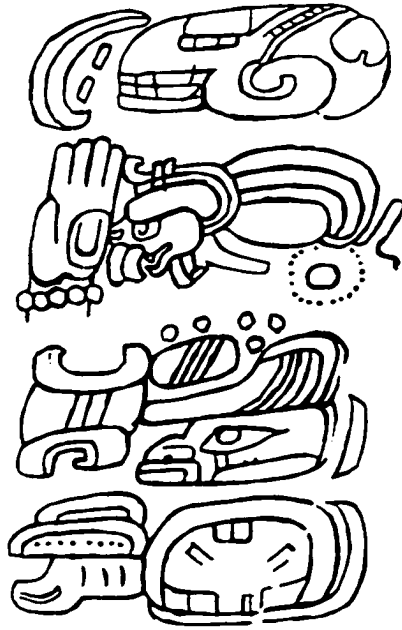


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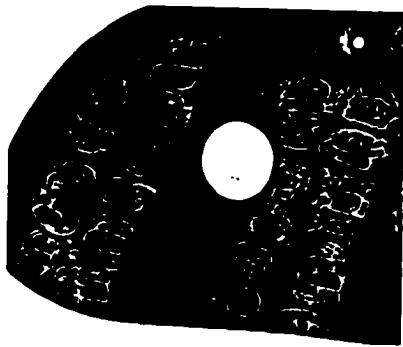


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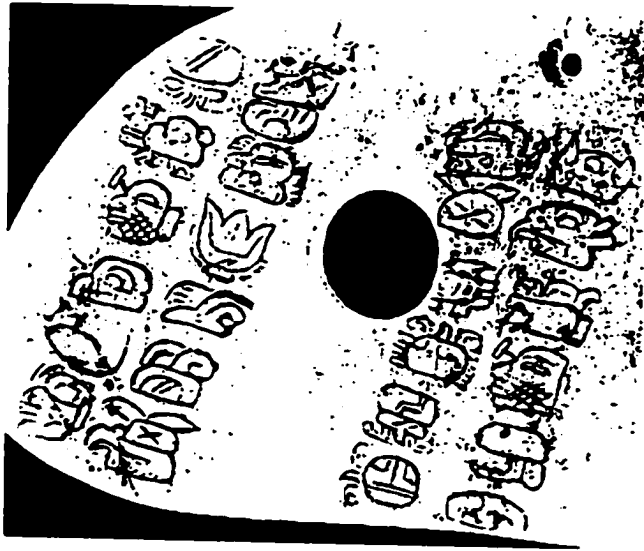


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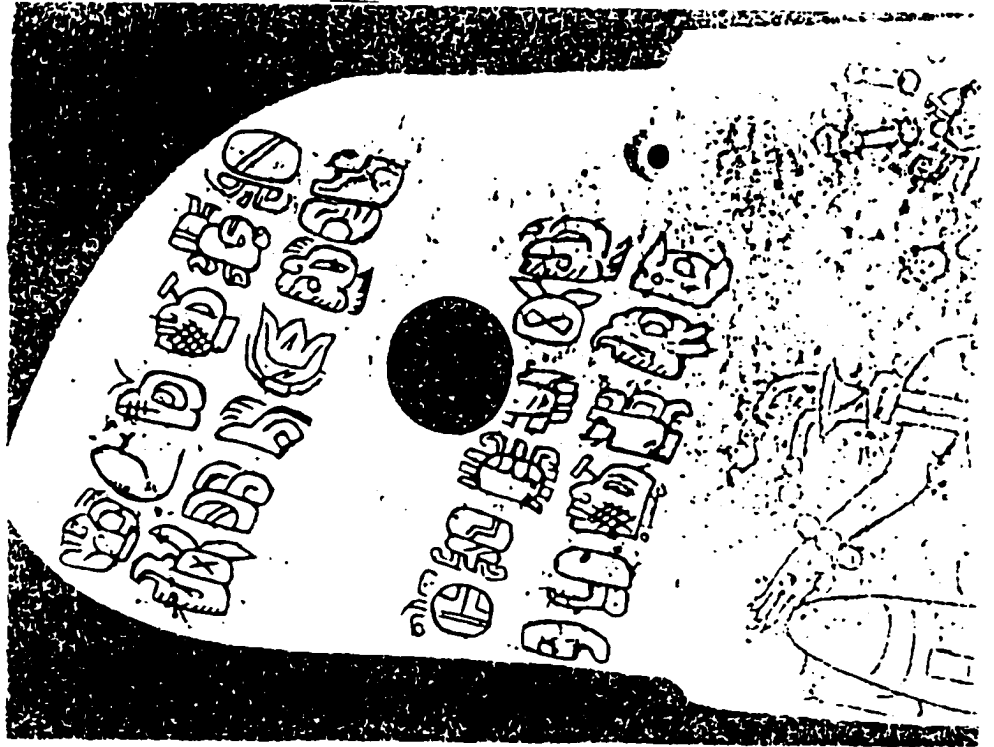


Figure A1.9.



Figure A1.10.



Figure A1.11.

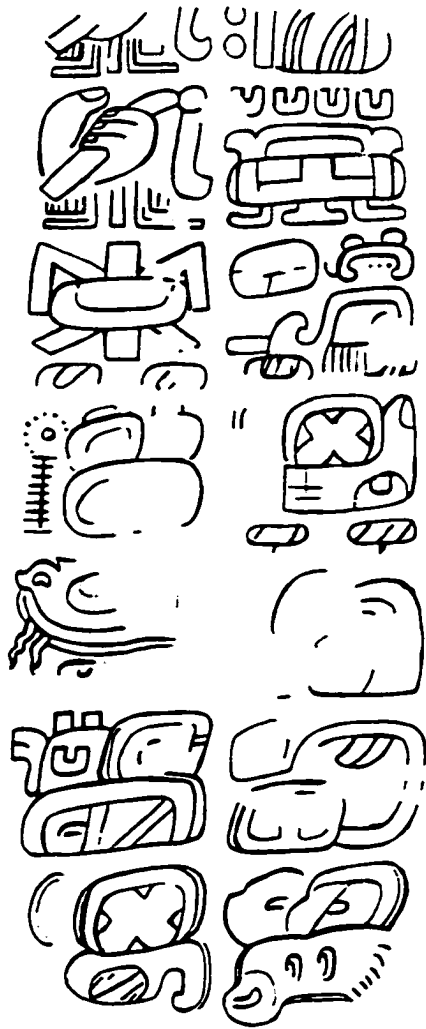


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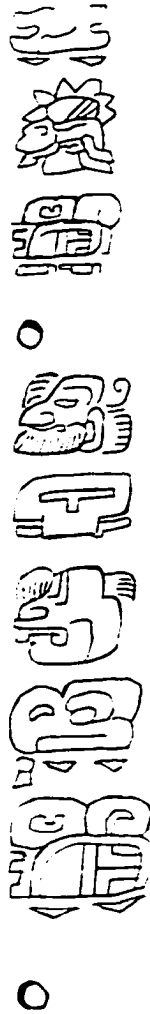


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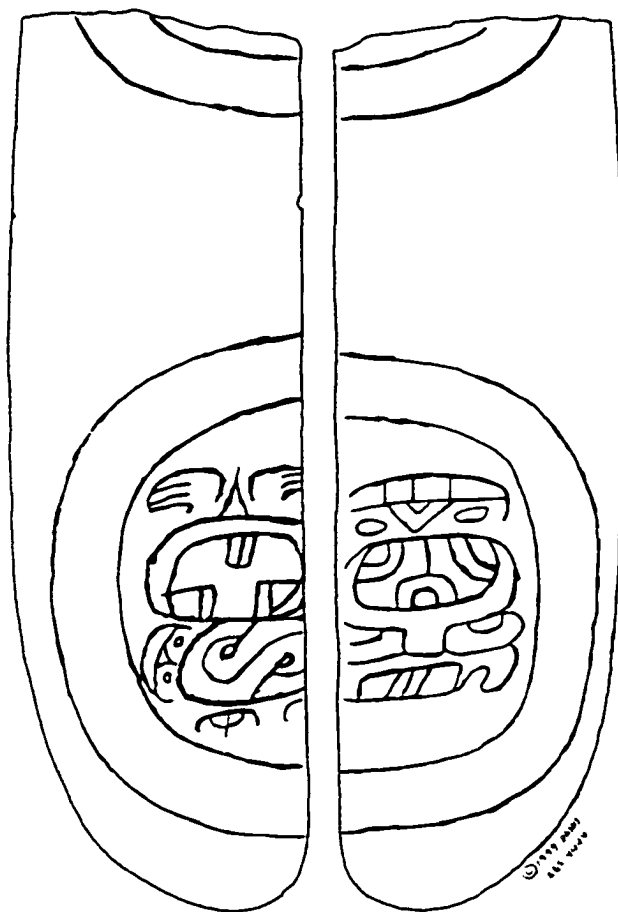


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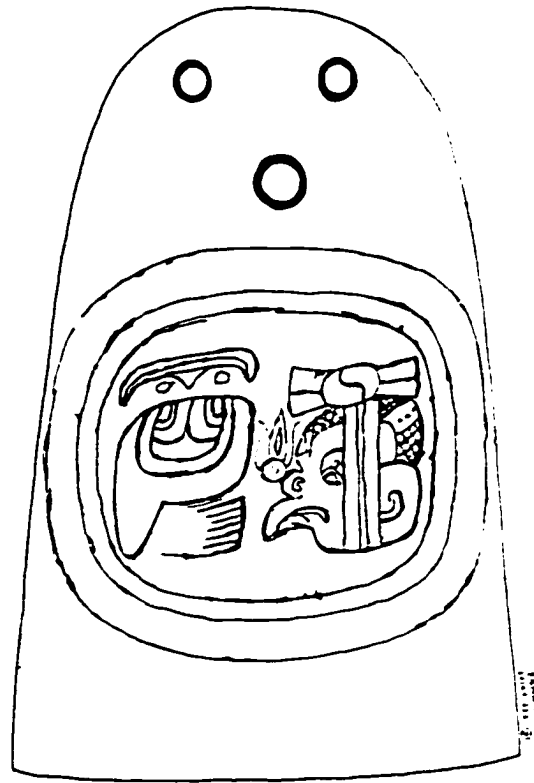


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Figure A1.16.



Figure A1.17.

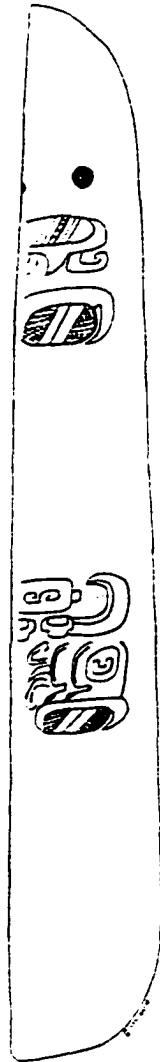


Figure A1.18.



Figure A1.19.



Figure A1.20.

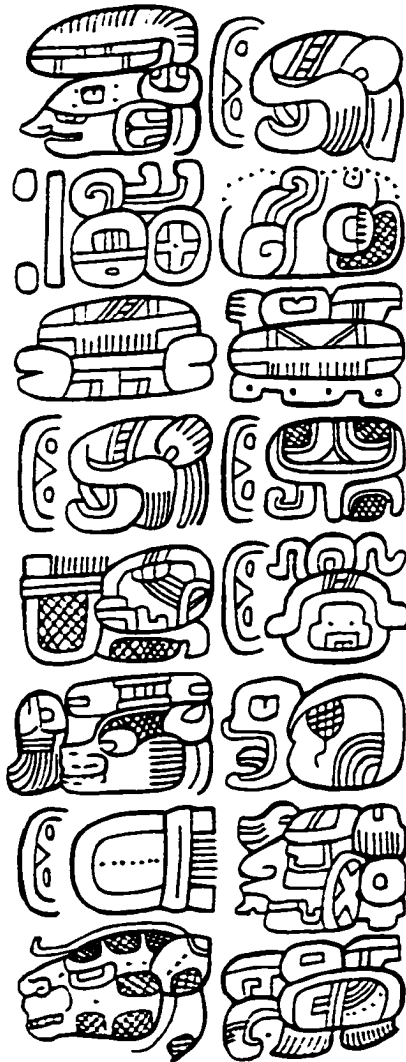


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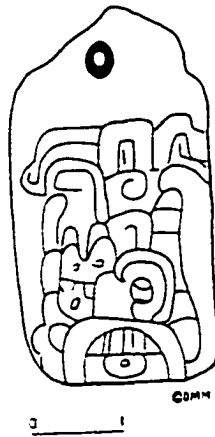


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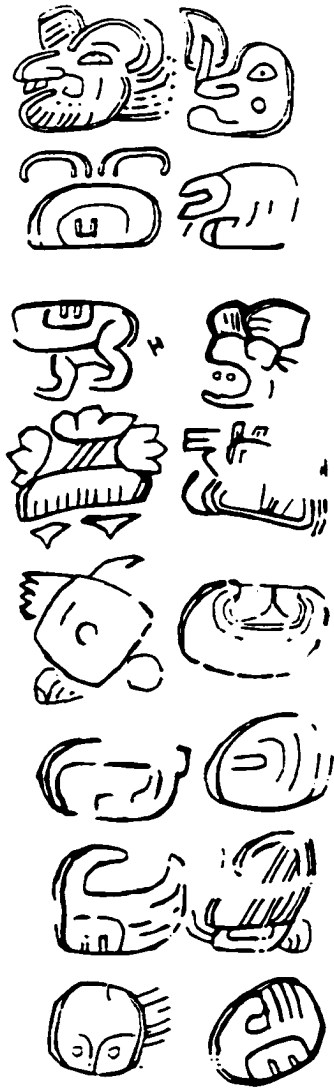


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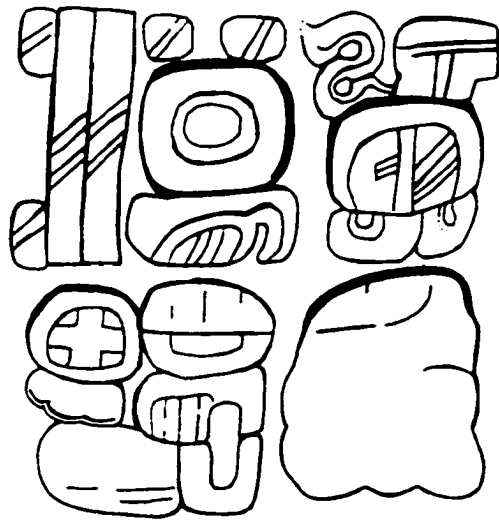


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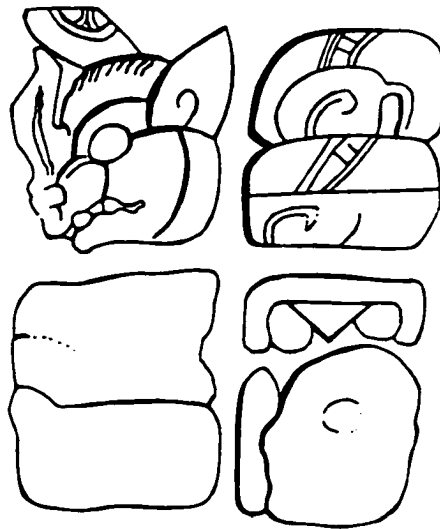


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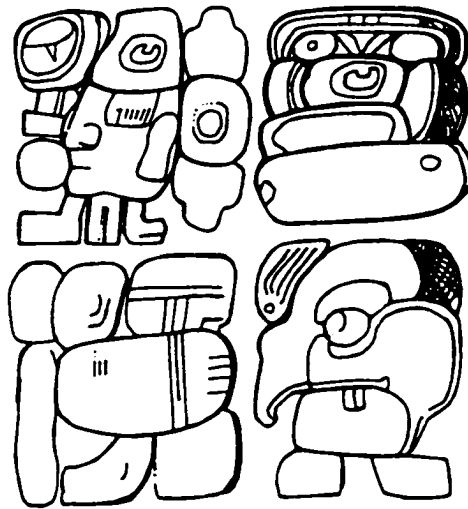


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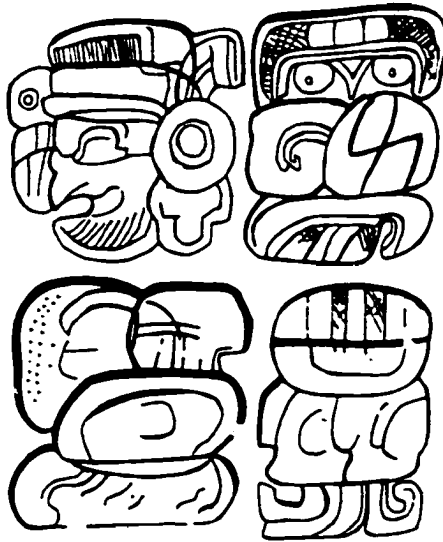


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Figure A1.31.



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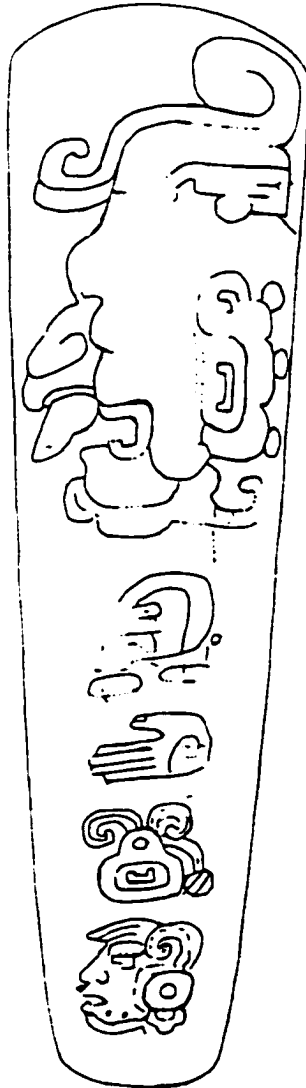


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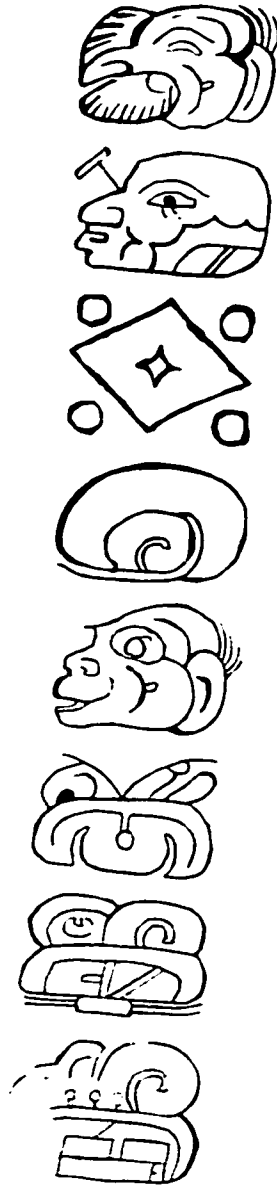


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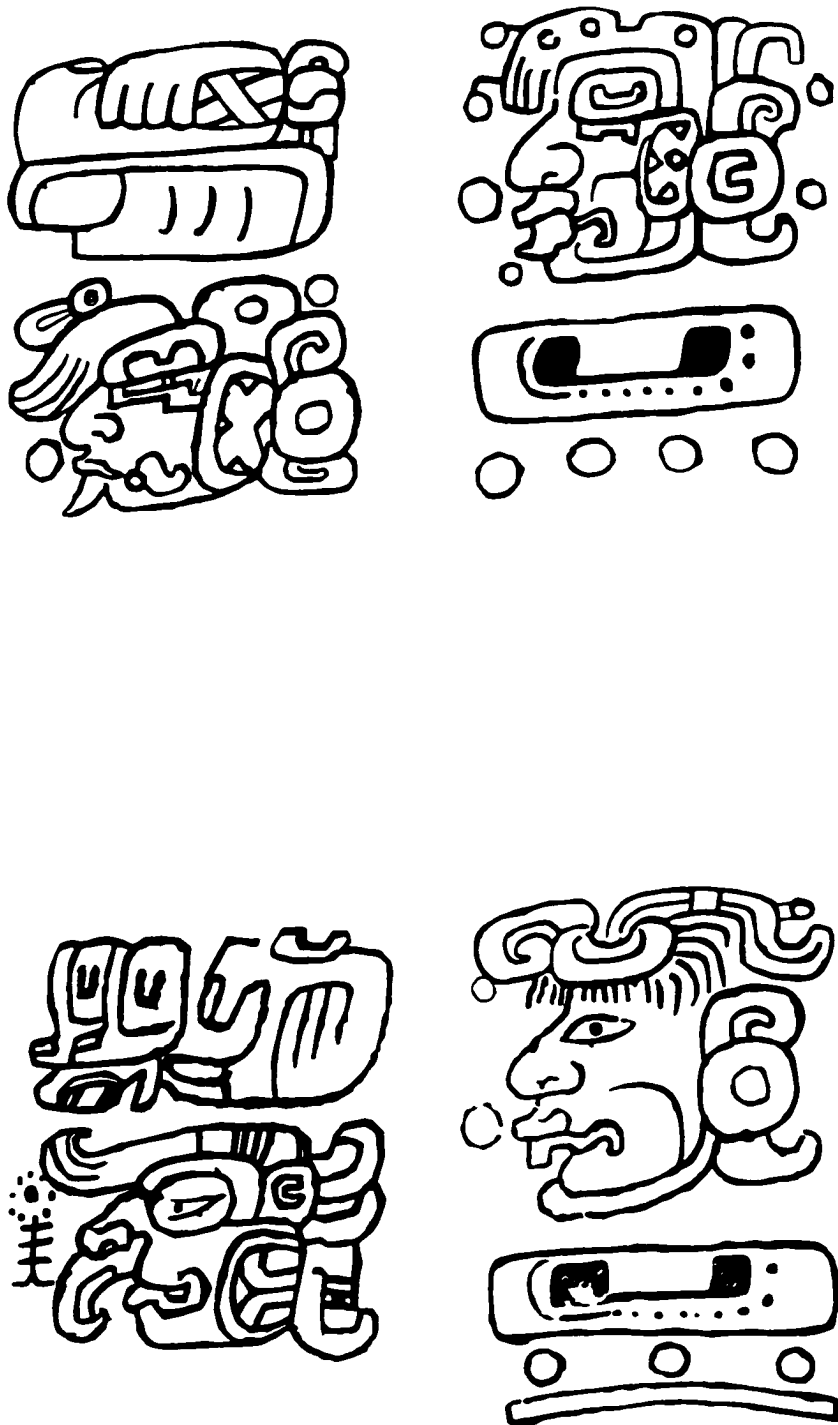


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Figure A1.36.

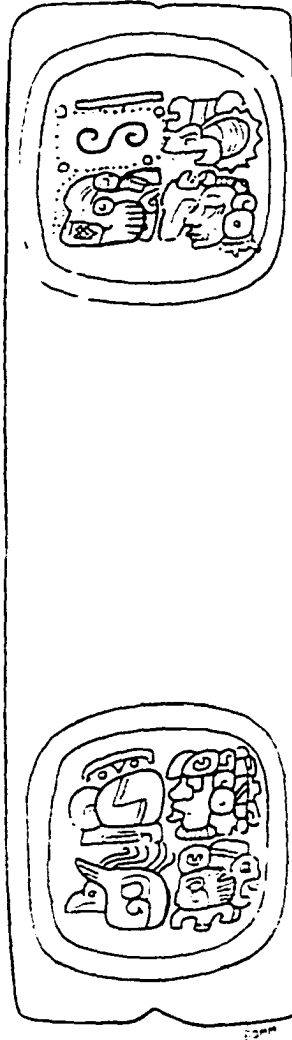


Figure A1.37.



Figure A1.38.



Figure A1.39.

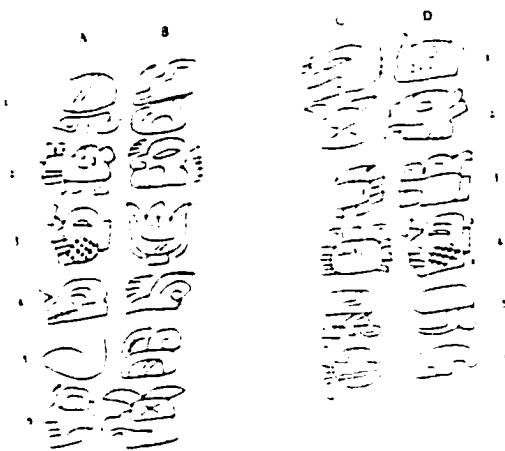


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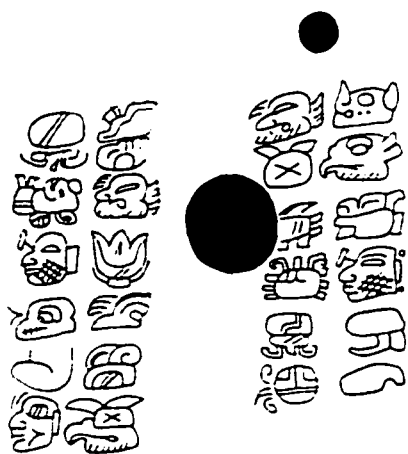


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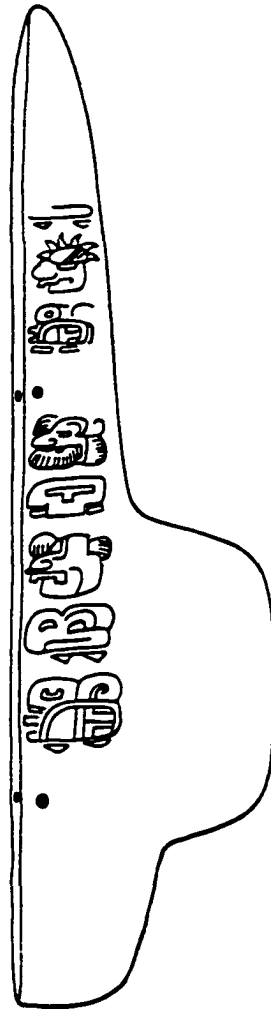


Figure A1.43.

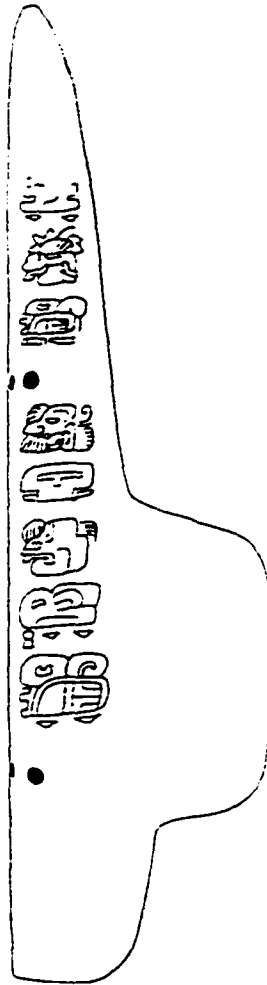


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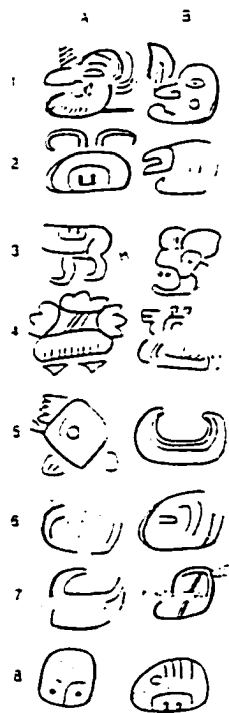
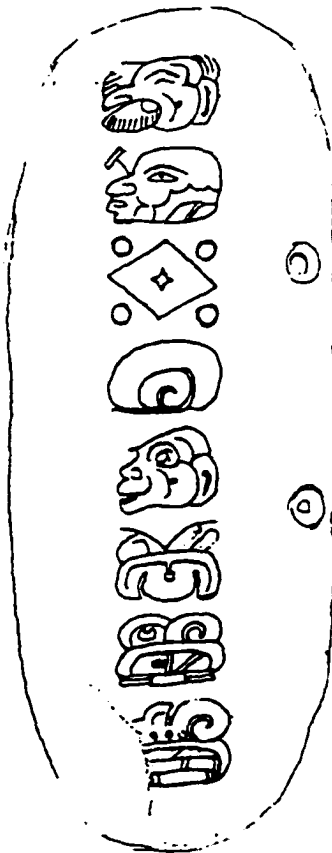


Figure A1.45.



LIST OF FIGURES

Figure A2.1. Stylistic comparisons 1. Lower torso and thigh motif. (a) Dumbarton Oaks pectoral seated personage. It shows a series of inner details that appear in other Late Preclassic glyphic and iconographic depictions of persons in a seated posture. (b) Glyph at A5 in Dumbarton Oaks pectoral text. It shows a complete absence of inner details. (c) Glyph at E5 on Kaminaljuyu Stela 10. It shows inner details comparable to those on the seated personage from the Dumbarton Oaks pectoral. (d) Seated personage from Cauac phase murals at Tikal, dated to ca. 50 B.C. Inner details also resemble those from the Dumbarton Oaks seated personage.

Figure A2.2. Stylistic comparison 2. (a) Earflare ornament on DO pectoral's seated figure. (b) Earflare ornament on Kaminaljuyu Altar 10's Principal Bird Deity. Both drawings by this author.

Figure A2.3. Stylistic comparison 3. Tree-form JESTER.GOD motif. (a) Dumbarton Oaks pectoral. (b) Kaminaljuyu Stela 11, dated to ca. 200 B.C.-A.D. 1. Both show the same type of tree with three circles.

Figure A2.4. Stylistic comparisons 4. SKULL with beaded headband ornament: (a)-(b). (a) SKULL sign at A4 in Dumbarton Oaks pectoral text. (b) SKULL icon on Kaminaljuyu Monument 63, dated to the early Arenal phase, ca. 200 B.C. Glyphic heads with squarish earflare ornament and/or two circular beads next to earflare ornament: (c)-(k). (c) Glyph A3 on Dumbarton Oaks pectoral text. (d) Glyph D4 on Dumbarton Oaks pectoral text. (e) Glyph A6 on Dumbarton Oaks pectoral text. (f) Glyph F6 on Kaminaljuyu Stela 10. (g) Glyph G1 on Kaminaljuyu Stela 10. (h) Glyph G8 on Kaminaljuyu Stela 10. (i) Glyph B5 on Hatzcap Ceel axe. (j) Glyph B1a on Pomona earflare. All drawings by this author.

Figure A2.5. Glyphic columns E-H on Kaminaljuyu Stela 10. Drawing by this author.

Figure A2.6. Change through time in sign element forms. (b)-(d) show a chain shift

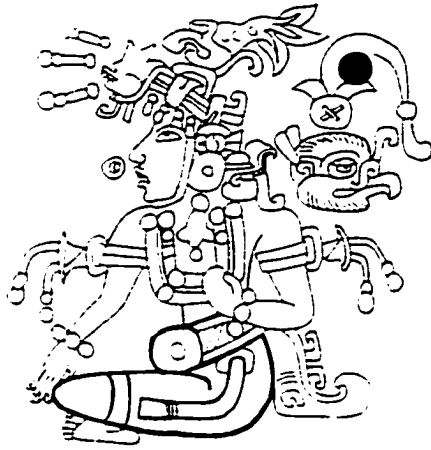
described by Lacadena (1996b:210-214) involving the U-shaped and O-shaped infixes. The change took place during the Early Classic-to-Late Classic transition. It involved the substitution of the original U-shaped element inside a cartouche, seen in (b) with examples as late as A.D. 495 at Tikal, for an O-shaped element, seen in (c) with examples as early as A.D. 593 at Naranjo, and later still, the addition of two small circles on the outside of the cartouche, seen in (d) with examples as early as A.D. 687. (a) Contains an example of the two-stubs element that replaces some U-shaped elements early on. (e) Shows Lacadena's (1996b:235) example of chain reaction analogical changes that took place with four signs during the Classic period: T173, T128, T126, T139, and T178 between A.D. 435-741. The sources of analogical change were two different signs: T126 in the second stage, and T178 in the fourth through sixth stages.

Figure A2.7. (a)-(c) Main Classic period forms of T1 7u, T126 ya, and T168 7AJAW (Lacadena 1996b:108). Earliest forms are on the top, latest forms are on the bottom. (a) T1 7u. (b) T126 ya. (c) T168 7AJAW. (d) T17 yi. Notice the (left-to-right, early-to-late) change from a hook-shaped outline to a more oval or rectangular outline (Lacadena 1996b:207). (e) T116 ni. Notice the change in orientation between the first and second forms: the sign undergoes a 180-degree rotation about a vertical axis, around A.D. 700 (Lacadena 1996b:197). The third and fourth examples show another change: the addition of circles (Lacadena 1996b:128). The third example, dated to A.D. 652, does not exhibit the 180-degree rotation, while the second one, dated to A.D. 682, does, showing that the circles were added in some examples of T116 prior to the generalized 180-degree rotation. (f) T74 ma. From early to late (left-to-right), these examples show the form that would become more common in the Postclassic codices (Lacadena 1996b:368). The most important changes took place in the central element. (g) T124 tzi/TZIK. The main changes undergone by this sign involve the central element (Lacadena 1996b:255-257). The first example is from Abaj Takalik Stela 2, dated to 235-18 B.C., the second from Bejucal Stela 2, dated to A.D. 393. This shows that the same shape remained intact from

the Late Preclassic to about A.D. 393. Then between A.D. 320 and A.D. 531 the shape in the third and fourth examples was innovated. The third example is from the Leyden Plaque, dated to A.D. 320. The fourth example is from Quirigua Monument 26, dated to A.D. 493. Finally, the fifth example shows an inverted central element. This was innovated at around A.D. 379, and lasted until about A.D. 517.

Figure A2.8. Main designs of Classic and Postclassic T23 na. (a) Diversity of designs of T23 during the Classic period (Lacadena 1996b:94). (b) Postclassic designs, with the last design being what Lacadena (1996b:385) concludes is the earliest Classic precursor for that design.

Figure A2.1.



a.



b.



c.

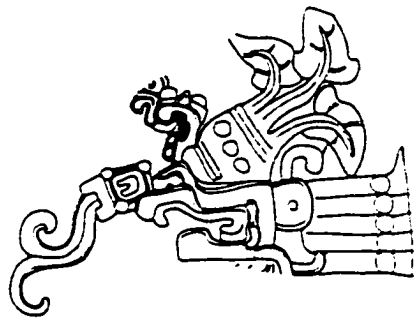


d.

Figure A2.2.



a.



b.

Figure A2.3.

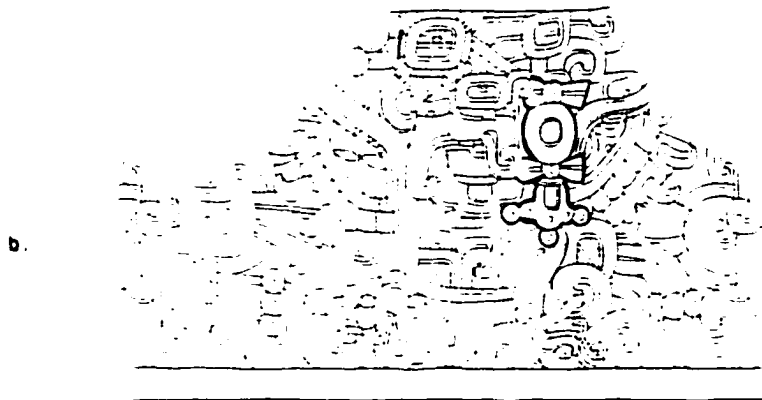
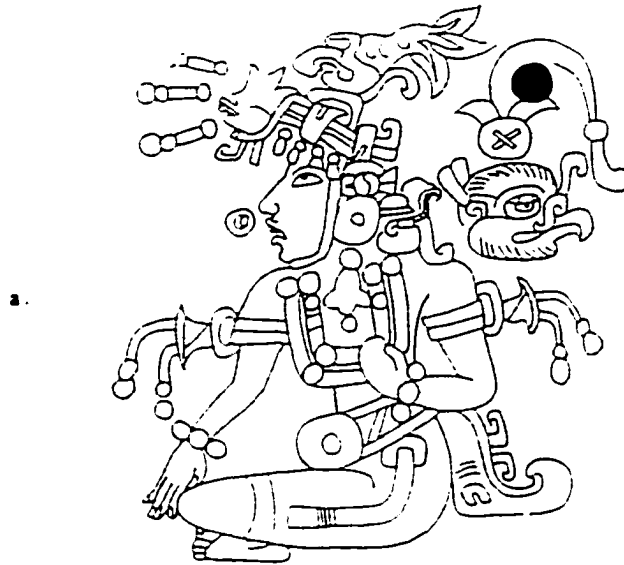


Figure A2.4.

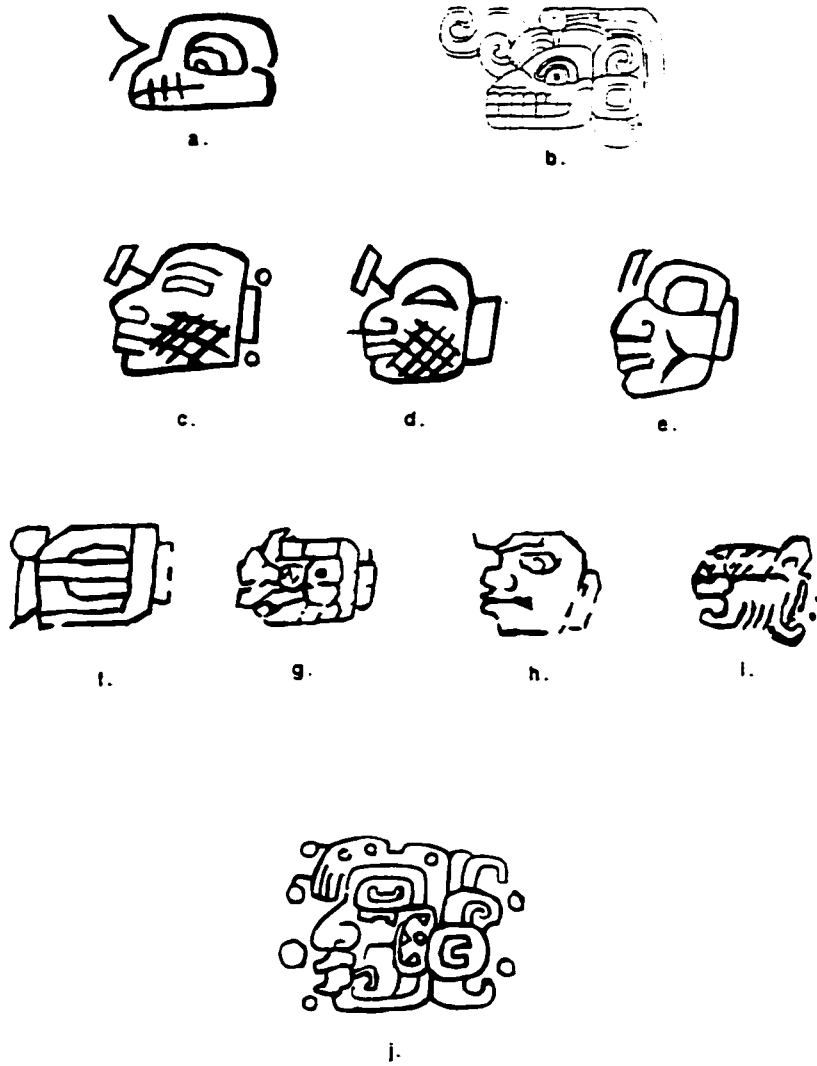
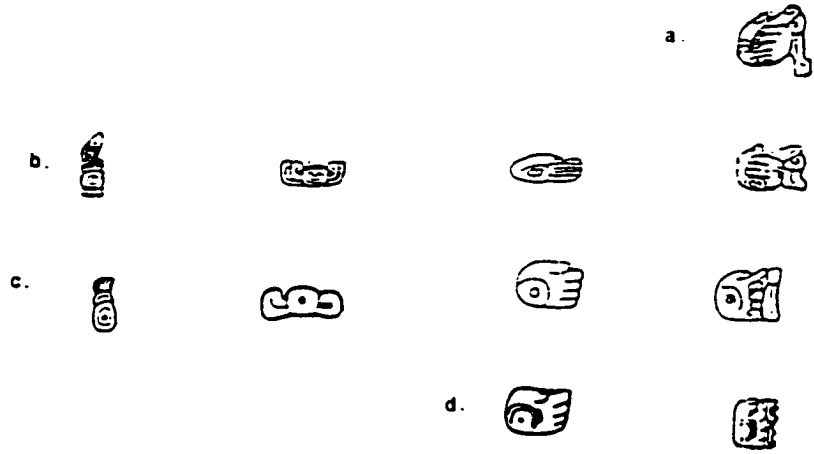


Figure A2.5.



Figure A2.6.



e.

	T173	T128	T126	T139	T178
1					
2					
3					
4					
5					
6					

Figure A2.7.

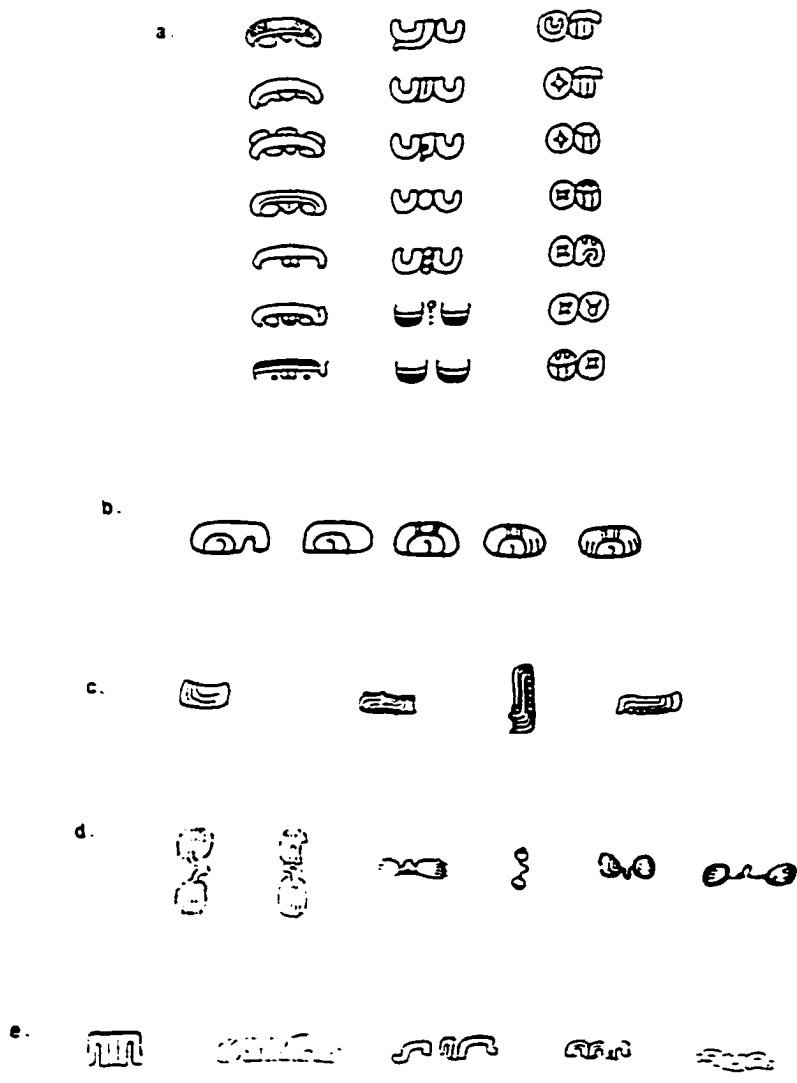


Figure A2.8.

