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A descriptive grammar of Palenque Mayan

Macri, Martha Jane, Ph.D.

University of California, Berkeley, 1988

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A Descriptive Grammar of Palenque Mayan

By

Martha Jane Macri

A.B. (California State University, Fullerton) 1968

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MAY 20, 1988

.....

A Descriptive Grammar of Palenque Mayan

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Martha Jane Macri

A Descriptive Grammar of Palenque Mayan

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Supervisor: Leanne Hinton.

This dissertation is a description of the language recorded in Maya hieroglyphic writing, during the seventh century A.D., at the archaeological site of Palenque in Chiapas, Mexico. It differs from previous treatments of the Maya script in that it is a linguistic description of a single dialect, rather than a generalized description of texts recorded in a writing system that was in use for over 1,500 years. The grammar begins with an introduction to the texts of Palenque, the status of Palenque Mayan within the Mayan family, and a description of the writing system. The rest of the grammar follows a traditional outline describing the phonology, morphology, and syntax of ancient Palenque Mayan. The grammar includes numerous figures in which the hieroglyphic signs of individual glyph blocks have been separated and labelled for purposes of illustration.

New phonetic readings are proposed for several signs including T60, T180, T559, T606, T713, T757, and T758. Newly proposed morphological interpretations include a verb in the future tense, a reflexive verb, and a discussion of the inflection of positional roots. The importance of the role of syntax in interpreting the hieroglyphic texts and discerning language and dialect differences is illustrated by a discussion of prepositions and complementizers in modern and ancient Mayan languages.

To the memory of my mothers
E. Virginia Mitchell and Giovanna Macri,
and to the future of my children
Christopher John, Monique Noël, and Benjamin Joseph Macri

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Abbreviations and Symbols

96G	Tablet of the 96 Glyphs
ABS	absolute
ADJ	adjective
alf	alfarda
CML	complementizer
CMP	completive
CONJ	conjunction
ERG	ergative
FEM	female prefix
jmb	jamb
N SUFF	nominal suffix
PalT	Palace Tablet
PASS	passive
PREP	preposition
PTab	Palace Tablet
RFL	reflexive
Slav	Tablet of the Slaves
STAT	stative
Str. I.	structural interpretation
TC	Temple/Tablet of the Cross
TFC	Temple/Tablet of the Foliated Cross
Tle	Temple/Tablet of the Inscriptions, East Panel

TIm	Temple/Tablet of the Inscriptions, Middle Panel
TIw	Temple/Tablet of the Inscriptions, West Panel
TS	Temple/Tablet of the Sun

Part I. Introduction

Chapter 1. Introduction

It is evident, from all this, that written records give us only an imperfect and often distorted picture of past speech, which has to be deciphered and interpreted, often at the cost of great labor. To begin with, the values, logographic or phonographic, of the written signs may be unknown. In this case, the problem of decipherment is sometimes desperate.

Bloomfield (1933:293)

Palenque is an archaeological site in the state of Chiapas, Mexico containing prominent monumental architecture and hieroglyphic inscriptions which dating from about 600 to 800 A.D., the time conventionally referred to as the Late Classic Period of the ancient Maya Civilization.¹ What follows is a linguistic description of the language recorded in the Maya hieroglyphic script at this site.²

This grammar differs from previous studies of Maya hieroglyphic writing, because, rather than merely using linguistic data to help interpret the hieroglyphs, I am starting from within a linguistic framework and asking questions about the linguistic data recorded in the texts. The value of this approach is that it provides a starting point for a thorough and systematic investigation and suggests questions which may not have been asked before.

The basic premise of this investigation is that Maya writing did record a spoken language, probably more than one, and that these languages can be described in the same terms as any other language, or at least any other language that is known from written records.

The Maya script as it existed during the first millennium was not the creation of a single person or team, but the product of centuries of evolution. Early scripts bearing varying degrees of similarity to it have been found on stone monuments in Guatemala, El Salvador, and the Mexican states of Chiapas, Tabasco, and Oaxaca.³

Because the writing system evolved over time certain signs which can be shown to be phonetically equivalent might, in fact, seldom occur in certain spellings simply because custom dictated that a particular sign should be used in the spelling of a particular word while a second equivalent sign was customarily used in some other word.

In our writing system the shapes of the symbols and the spellings of words are rigorously uniform. We tend to be intolerant of misspellings and of irregularly formed letters which we consider illegible. The symbols used by the ancient Maya on public monuments, on the other hand, were variable and often highly elaborate. It would appear that variations in spellings of words were a sign of the ability of the scribe, not his lack of education.

This variation of symbols is possible, in part, because the subject matter and the syntax of the inscriptions are so predictable. While modern European writing systems are designed to impart detailed phonetic information in an unlimited variety of cultural contexts, the Maya script appears to have been employed in a narrower range of uses. This narrower range of uses combined with the iconographic images which frequently accompany the inscriptions effectively informs the reader of the kind of information he is likely to encounter.

Although there are earlier related inscriptions found in the Guatemala Highlands, the script known as the Maya hieroglyphic writing system was already in use by at least 250 A.D. As a single writing system with identifiable symbols used in similar ways, it continued to be used until the sixteenth century, when it was suppressed by the Spanish. Its geographic range during this 1200 year period included northern Guatemala, Belize,

Honduras, Chiapas, and the Yucatan Peninsula—precisely the area where speakers of Mayan languages are found today. This also includes the area defined archaeologically as Classic Maya.

1.1. The Maya Script as a Medium of Communication

I would first like to place the Maya script within the wider context of communication. Communication involves transferring information from a source to a receiver. For humans, information can be received through any of the five senses (ignoring the possibility of extra-sensory perception). We send information by manipulating the external world to influence what others will perceive with their senses. The senses of tasting, smelling, and touching normally tend to be limited to receiving information essential for our physical welfare. Sight and hearing, however, participate in a very complex system of reciprocal communication which includes momentary oral sounds and body movements, (which can be recorded electronically and thus preserved in time and manipulated), and static components including manipulation of what others see and hear apart from our physical bodies. These static components include dress, architecture, still photography, sculpting, and painting.

One part of this complex system of reciprocal communication is speech by which signals are sent via the throat, nose, and mouth—the speech organs—and received by the ears and eyes. Due to the inventiveness of the human mind, speech can also be perceived, though somewhat less accurately, as a visual signal by the hearing impaired who can read lips. It can also be recorded by visual symbols representing the sounds of speech and kept as a static visual record in phonetic writing systems. Finally, these written symbols can be represented by three dimensional symbols so that natural language recorded in Braille can be perceived through the sense of touch.

Some methods of communication are based on speech, but contain components that

are independent of the sounds of spoken language. These communication systems include sign languages used in multilingual situations or by the hearing impaired, and iconographic complexes in which visual associations, as well as natural language sounds, are employed.

Among the archaeological remains of Central America we find the remnants of two systems of communication which were employed by the rulers of the Classic Maya civilization to celebrate and justify their authority.⁴ The first is the complex iconography based on visual associations known from the physical world and from cultural traditions. This iconography is recorded on murals, sculpted stone and stucco, and decorated ceramic vessels. A second method of communication, texts recorded in the hieroglyphic script, is primarily linguistic, that is, it is based on natural language. It is not, however, independent of the iconography, nor does it record the phonetic sounds of natural language with the precision of a purely syllabic or alphabetic script.

The relationship between a phonetic script and the language it records is almost exclusively at the level of the phonologic component. The relationship between a script with logographic elements and the language it records can include an involvement with the semantic and syntactic component of language to a much greater degree. Examples of this will be shown from Maya writing, including glyphic noun incorporation (Section 12.1.2), and artistic vs. spoken ordering of elements (Section 4.3).

Alphabetic writing is valued for ease of learning, ease and speed of recognition, and uniformity. Some writing systems are valued for difficulty in acquisition, artistic manipulation of symbols, and inaccessibility to outsiders. Full literacy for the ancient Maya had to have been closely integrated with the acquisition of esoteric historical, religious, calendrical, and astronomical knowledge. It does seem likely that at least modest literacy among the common people can be assumed given the quantity of political texts displayed in public settings. However, as any student of Maya writing can attest, there is a fairly large gap between the ability to read a text, and the kind of calendrical, historical, and

cultural knowledge that would be required to compose one.

1.2. Texts and Comparative Reconstruction

The primary sources of information used in this study are, first, the hieroglyphic texts themselves; second, linguistic data from modern and historically known Mayan languages; and third, the results of historical reconstructions based on the comparison of these languages. These sources complement each other, with historical linguistics shedding light on the written texts at one moment, and with the written texts supplying information about early Mayan languages at the next. An attempt is made here to describe as much about the phonology, morphology, and syntax in the texts as can be discovered, and to relate that information to known Mayan languages as well as to current historical reconstructions. Our ability to read the glyphic texts has progressed to the point that we are becoming less dependent on reconstructions to interpret the readings, and can, in fact, use some of the more secure readings to verify reconstructions. The texts are beginning to be recognized as yet another primary source of linguistic data.

The methods of analysis include the techniques of the comparative method and historical reconstruction as well as all of the puzzle-solving techniques used in glyphic analysis, such as comparison with iconographic elements, identification of parallel phrases, and recognition of substitution patterns. Additional sources include material on Maya culture taken from modern and Colonial ethnohistorical sources as well as a number of important documents which have been written in Mayan languages using the Spanish alphabet. Information gained from comparisons of various non-alphabetic writing systems has also been an important aid in decipherment.

My intention is to demonstrate that the Maya hieroglyphic texts are valid linguistic data, and that in order to do a rigorous study of the languages that the Maya script records we must limit the data so that we are dealing with only one language at a time. These texts

constitute a legacy for the student of Mayan linguistic prehistory, but a legacy that is not easily claimed. The study of Maya writing will ultimately provide us with important information about language change and dialectology, certainly within Mayan languages and, hopefully, in language in general.

1.3. The Maya Corpus and the Choice of Palenque

The Maya hieroglyphic texts not only represent a closed corpus, but, unfortunately, a very limited one as well. Because of the humidity in most of the Maya area, none of the bark paper books from the Classic Period have survived in a readable state. Sources of texts include carved monuments and tablets, painted texts on walls of buildings or caves, and inscriptions painted, incised, carved, or molded on pottery. Many of the texts that we do have are only imperfectly preserved. For many of the sites, there is so little material available that any attempt at a linguistic description would be a severely limited one.

There are a few sites, however, that contain a sufficient volume of glyphic material to allow for at least a limited linguistic description. Notable among these sites are Tikal, Copan, Yaxchilan, Piedras Negras, Naranjo, Quirigua, and Palenque. However, texts from some of these sites span over hundreds of years. For example, the hieroglyphic texts from Tikal were recorded over a 600 year time span, a larger temporal range than most linguists would consider ideal for a description of a single language.

Another factor pertinent to linguistic analysis is the length of individual texts. Most of the Classic monumental inscriptions record political history in brief texts with fairly predictable formulas which give the dates of births, accessions to power, and deaths of various rulers.

Palenque texts are ideal for linguistic analysis because, of all the Maya sites, Palenque is the one with the most glyphic material and the longest continuous texts, recorded during the shortest time period (about 130 years, 652-785 A.D.). Texts from

other sites span periods of 300-600 years.

Another consideration in choosing Palenque texts for a detailed study is that a number of unusual features in them suggest that they record a language/dialect distinct from that recorded at neighboring sites to the east such as Yaxchilan and Piedras Negras. One feature pointing to a dialect difference is the use at Palenque of the /ta/ set of signs for the locative preposition rather than /ti/, which is found at the majority of contemporary sites (see Chapter 13).⁵

For all of the above reasons, the Palenque texts have been studied more thoroughly than any others, and are nearly always cited in any argument presented in support of new phonetic or interpretive readings. It is for these reasons that I have chosen Palenque for the first linguistic description of an individual language/dialect recorded in the ancient Maya script. I have named this language Palenque Mayan, to emphasize the fact that it is being described independently of any other Mayan language or proto-language.

1.4. The Palenque Texts

As Schele (1978n-1988n) has noted, the texts fall neatly into three periods. The early texts have to do with the ruler Pacal the Great⁶ (603-683 A.D) and are found in the early buildings of the Palace and in the Temple of the Inscriptions, the latter of which contains Pacal's tomb. The second group of texts deals with his son Chan Bahlum (635-702 A.D.). These are found on the three main monuments of the Group of the Cross. The later texts, those relating to Chan Bahlum's younger brothers, and the Tablet of the 96 Glyphs, form a somewhat more heterogeneous group.

The dedication dates of the Temple of the Inscriptions (9.12.15.0.0, 687 A.D.)⁷ and the Group of the Cross (9.13.0.0.0, 692 A.D.) suggest that the texts of the first two groups fall within a time span of less than 25 years (depending upon how early the text in the Temple of the Inscriptions was begun). The monuments of the third group also span a

period of about 25 years, except for the Tablet of the 96 Glyphs, which at 9.17.15.0.0, 785 A.D., is about 50 years later than any other major Palenque inscription.

From the earliest known inscription on Throne 1, about 650 A.D., until the latest (on a ceramic vessel called the Initial Series Pot) at about 800 A.D. there is a span of 150 years. However, the major monuments span a period of only 100 years, and if the Tablet of the 96 Glyphs is excluded, the span is less than 50.

1.4.1. Early Period: Pacal (to 9.12.15.0.0, 687 A.D.)

The most imposing Temple in the central part of the Palenque ruins is the Temple of the Inscriptions. Visible at the top of the temple are five doorways formed by a series of six piers, two of which bore hieroglyphic inscriptions. Pier A contained 96 glyph blocks⁸, less than ten of which are now visible. Piers B, C, D, and E were stucco figures with small caption texts accompanying the figures and with three glyph blocks above each frame. There is now only one glyph block of the caption texts present on Piers D and E, and 2 glyph blocks each above Piers B, C, and D. Pier F had parts of four glyph blocks left when Maudslay recorded it at the turn of the century (Robertson 1983:25-51).

Just through the doors of the temple is the longest known Classic inscription (except for the hieroglyphic stairway at Copan, currently being restored, but previously in disorder) recorded on three stucco panels. The dedication date of this tablet is 9.12.15.0.0 (687 A.D.). It is a history of the katuns, the twenty-year periods so important to the Maya. It begins on the east panel with the accession dates of Pacal's ancestors (beginning with the accession of Chaacal I in 9.3.6.7.17, 501 A.D.), and continues across the middle panel with astronomical and ceremonial events occurring during the three katuns of Pacal's reign, and ends with dates placed in the future. The east and west panels contain 12x20 glyph blocks, and the middle panel is somewhat shorter containing 10x14, for a total of 617 (-3 for the large initial glyph) glyph blocks.

Pacal's tomb under the Temple of the Inscriptions contains a text of 54 glyphs around the edge of the sarcophagus cover. These glyphs record the death date of Pacal at 9.12.11.5.18, 683 A.D. and the death dates of nine of his ancestors, including both of his parents. There are some additional glyphs on the top of the cover, and on the sides and legs of the sarcophagus.

Other texts relating to Pacal include the Oval Palace Tablet showing Pacal and his mother, Lady Zac Kuk, on the occasion of his accession on 9.9.2.4.8. (615 A.D.). The accompanying throne was also carved (originally 24 glyph blocks), and glyphs recording subsequent accessions were painted on the wall above (about 50 original glyph blocks). The Tableritos are a series of six small tablets found in the subterranean level of the Palace which commemorate the thirteenth anniversary of Pacal's son Chan Bahlum's heir designation ceremony. The Olvidado Temple, built during Pacal's reign (around 647 A.D.) had hieroglyphic texts on Piers A and D with an original total of 36 glyph blocks. The hieroglyphic stairway of House C records war events in 652 and 658 A.D.

1.4.2. Middle Period: The Group of the Cross (9.13.0.0.0, 692 A.D.)

The middle period texts are those recorded during the reign of Chan Bahlum, the oldest son of Pacal. The most extensive are the panels found inside the structures at the top of the three temples of the Group of the Cross: the Tablet of the Cross (over 200 glyph blocks), and the Tablet of the Foliated Cross and the Tablet of the Sun (each almost 140 glyph blocks). The dedication dates of these tablets is 9.13.0.0.0, 692 A.D. Each of the tablets has a figure showing two men facing a central image which is flanked on either side by hieroglyphic texts. There are additional glyphs, referred to as caption texts, next to the standing men. In each case, the text on the left side refers to mythological ancestors, and the text on the right to historical ancestors. For each of the temples there are additional inscriptions on jambs and on horizontal panels (alfardas) in front of the buildings.

The Tablet of the Cross records the birth of a woman named Sak Bak 'White Heron' or 'Egret' six years before the beginning of the current era which began, according to the Maya, in 3114 B.C. It also records the birth of GI, presumably her son. It then continues with birth and accession dates of Chan Bahlum's historical ancestors. The Tablet of the Sun records the heir-designations of Chan Bahlum. The birth of another mythological personage GIII is recorded on an alfarda. The Tablet of the Foliated Cross records the birth of GII of the Palenque Triad and events in the life of Chan Bahlum. Events in the life of Chan Bahlum are juxtaposed with similar events in the lives of the most ancient ancestors, as well as his immediate ancestor, his father Pacal.

Two other temples linked to Chan Bahlum are Temple XVII and Temple XIV. The Temple XIV tablet contains an inscription of 48 glyph blocks plus a caption text and records events happening to Chan Bahlum after his death.

1.4.3. Late Period: Miscellaneous Tablets (9.14.10.0.0-9.17.15.0.0, 721-785 A.D.)

The most significant of the later texts is the Palace Tablet. It has over 250 glyph blocks which give the birth of Kan Xul, his parentage (Lady Ahpo Hel and Pacal the Great), Pacal's death, Chan Bahlum's death, Kan Xul's accession, and a reference to Xoc, Kan Xul's younger brother and successor. Caption texts give the birth and accession of Xoc.

Dumbarton Oaks Relief Panel 2, presumed to be from the site of Palenque, has a text of 37 glyph blocks. It records an event in Kan Xul's life at the age of 12 and a second event several years after his death as a captive at Tonina. The jambs from Temple XVIII, dedicated 15 years after the Palace Tablet, record events in the life of Chaacal III. The Tablet of the Slaves, found away from the central part of the site, records the accession of Chac-Zutz', who was a secondary ruler. Finally, the Tablet of the 96 Glyphs is the latest

known inscription, giving accessions of rulers from Pacal through Bahlum Kuk.

A list of major glyphic sources and their approximate dates is given in Table 1.1.

The Maya dates are taken from Schele 1982.

9.11.05.00.00	657 A.D.	Tableritos
9.11.10.00.00	662 A.D.	Hieroglyphic Stairs
9.12.15.00.00	687 A.D.	Sarcophagus
9.12.15.00.00	687 A.D.	Temple of the Inscriptions Tablets
9.13.00.00.00	692 A.D.	Temple of the Cross Tablet
9.13.00.00.00	692 A.D.	Temple of the Sun Tablet
9.13.00.00.00	692 A.D.	Temple of the Foliated Cross Tablet
9.13.15.00.00	707 A.D.	Temple XIV Tablet
9.14.10.00.00	721 A.D.	Palace Tablet
9.14.15.00.00	726 A.D.	Dumbarton Oaks Tablet
9.14.15.00.00	726 A.D.	Temple 18 Tablet
9.15.00.00.00	731 A.D.	Orator Tablet
9.15.00.00.00	731 A.D.	Tablet of the Slaves
9.17.15.00.00	785 A.D.	Tablet of the 96 Glyphs

Table 1.1. A List of Major Palenque Inscriptions.

1.5. Previous Work on the Palenque Inscriptions

Because of the amount of material at Palenque, and because it is more accessible than many of the Peten sites, it has been among the best recorded of all the sites. As

early as the nineteenth century drawings by Catherwood were included in the publications of Stephens (1841). Maudslay (1889-1902) published drawings of the tablets from the Temple of the Inscriptions and the Group of the Cross. More recent drawings of Palenque texts have been done by Schele (1978n-1988n, Schele & Miller 1986) and Robertson (1985a, 1985b, 1986, in press a), the latter being a projected five volume series recording the sculpture of Palenque in high quality color photographs and line drawings.

Virtually every major figure in the history of Maya decipherment, from the time of Eduard Seier and Ernst Förstemann at the turn of the century to the present, has worked with the Palenque inscriptions. Several factors combined during the 60's and 70's to aid our understanding of the Palenque texts. One factor was the work of the Russian Knorozov which emphasized the logo-syllabic nature of the script, and the support his work received from Kelley (e.g., Kelley 1962a, 1962c). A second development, based not on phoneticism, but on structural analysis of the texts, was the discovery by Proskouriakoff (1960, 1963) that the Classic Period inscriptions recorded historical events, and the work done by H. Berlin (1959, 1963, 1968) in identifying names and events of rulers at Palenque. A third factor in the acceleration of decipherment has been the six Mesas Redondas de Palenque which have been held since 1973 (Benson 1985, Fields 1985, Jeffers 1979, Robertson 1974a, 1974b, 1976, 1980), and the mini-conferences held at Dumbarton Oaks in Washington, D.C. between 1974 and 1979 (Schele & Miller 1986:328). Among the outstanding scholars participating in these events were Kelley, Lounsbury, Robertson, Schele, and Mathews. Understanding of the Palenque texts continues to grow as a result of the workshop and seminar at the annual Maya Meetings held in Austin, Texas (Schele 1978n-1988n).

1.6. Databases Used in This Dissertation

A number of important databases have been developed over the last 25 years which have contributed greatly to current research on Palenque and other Maya sites. The first is Thompson's Catalog (1962). He assigned numbers to hundreds of separate signs, and recorded the location each was found and the immediate context (other glyphs, usually affixes, within the glyph block). Although reference to the texts with T-numbers (the numbers assigned to signs in the catalog) can be cumbersome, and although he occasionally gave different numbers to variations of a single glyph and a single number to what should have been two separate glyphs, Thompson's catalog has been indispensable to epigraphers.⁹

Growing directly out of Thompson's work has been an attempt by Smith-Stark & Ringle (n.d.) to assign T-numbers to texts, and enter them into a computerized database so that the texts can be easily searched for individual glyphs and patterns. A concordance of the Palenque texts resulting from this project is currently in press (Ringle, in press).

A third important resource is Schele (1982), *Maya glyphs: the verbs*. In this catalog Schele has tabulated verbal passages from virtually every known monument, and arranged them according to main signs and affix patterns (see clarifications of these terms in Section 3.2), together with the date of the event, dedication date of the monument, and agent and patient of each verb when possible.

This description of Palenque Mayan was greatly facilitated by a pre-publication copy of the T-number assignments made by Ringle for the Palenque texts. His database has one glyph block per record, with a gloss offered for many of the glyph blocks.¹⁰ I re-entered the T-numbers so that each T-number was a separate record, which resulted in several records per glyph block. I also entered proposed phonetic readings and logographic interpretations for various glyphs by T-numbers into another database which I then joined to the Palenque database, yielding potential interpretations for some of the

glyphs. This mechanical insertion of information was effective in suggesting new readings for passages, but would be counterproductive if it were slavishly followed. This expanded database allowed me to print out the number of times each sign occurred at Palenque, as well as a list of all the T-numbers that do not occur at the site.

A second database that I developed is a list of clauses. Each record includes the name of the monument, the coordinates of the clause, the Long Count and Calendar Round of the date of the event, the format of the source of that information (distance number, calendar round, etc.), phonetic readings based on known logographic and syllabic signs, English glosses when possible, and grammatical information including types of verbs: (*transitive, intransitive, positional*), noun phrase: (*possessed, absolute*), presence of overt subject and object noun phrases, dependent clauses, locative constructions, etc.

The principal value of all these databases was in offering more rapid and thorough access to the texts than would ever be possible visually.

1.7. Scope of This Dissertation

The value of this description of Palenque Mayan is that it is the first attempt to describe texts recorded in the hieroglyphic script within a linguistic framework. It has been written for two audiences, one with very different interests and backgrounds.

The first audience is linguists. To them I would like to demonstrate that rigorous description of the languages of the Classic Period is possible, and that these texts are rich with data to be used in the process of doing comparative reconstruction.¹¹ I have tried to be realistic about the problems posed by working with an only partially deciphered system, and to show some of the methods of epigraphic investigation.

The second audience for this description is Mayan epigraphers. I hope that it will show them the importance of being precise about location and time period when making comparisons, or proposing phonetic readings, and will demonstrate the value that

comparison of rigorous descriptions for different groups can have for understanding the social and political relationships between the various Classic Period sites.

In deference to the epigraphers I have tried to avoid overly technical vocabulary, and to explain linguistic terms as they are introduced. I have presented the data as a straightforward description and have avoided dealing with any issues of modern linguistic theory.

In deference to the linguists I have tried to illustrate with actual hieroglyphs whenever they are mentioned, and have kept the use of T-numbers (Thompson Catalog numbers) to a bare minimum.

There are a number of interesting linguistic problems that I hope to investigate further in the future, but that are beyond the scope of this current work. One is the issue discussed in Bresnan and Mchombo (1987), as to whether verbal affixes in Palenque Mayan mark grammatical or anaphoric agreement. That is, are the nouns in the sentence the subjects and objects of the verb, and do the person markers on the verbs only supply redundant information (grammatical agreement), or are the person markers incorporated pronominal subjects and objects (anaphoric agreement), and the nouns they refer to merely adjuncts which function as topic or focus.

A second issue is one of object incorporation. There are several examples in which the direct object of a transitive verb is visually incorporated into the glyph space of the verb. These cases do not support an analysis of true object incorporation (Mithun 1984, 1986), but they do have implications about how speakers think about objects, and about the relationship between the objects and the verb.

The Mayan texts are a very rich source of linguistic data. Certainly they are a rich source of lexical and grammatical data on the very earliest attested languages on this continent, but they will be of equal, or perhaps greater importance to students of language in a more general sense. The idea of the visual organization of the glyphs, at the level of

individual as well as the sentence and larger units of discourse, will offer insight about language and cognition that is not expressed in speech nor in a completely linear writing system. But such investigations imply the accomplishment of two tasks which have not been completed. The first is something closer to complete decipherment of the signs in the writing system, and the second is the formulation of linguistic descriptions of each of the languages/dialects recorded in that writing system.

Notes for Chapter 1.

¹ The word Maya is an adjective used in modifying the people and the culture. The word Mayan is an adjective modifying the name of the language family.

² This work is a linguistic description. The author makes no claim about the political organization found at Palenque other than recognizing that there was a succession of rulers and that their births, accessions, and deaths are recorded in the hieroglyphic texts. In some texts these are preceded by the births and accessions of persons born so long ago as to be considered non-historical. These mythological persons are commonly referred to as gods, though, in fact, their function in the belief system of the Classic Period Maya is not known.

³ For discussion of these earlier scripts see Coe (1976), Marcus (1976a), and Justeson (1986).

⁴ This statement should not be interpreted to mean that the two systems of communication were developed only for political purposes, but, instead, that the recording of these images and texts on monumental architecture was primarily politically motivated.

⁵ Palenque is unusual in that carved stelae are absent. John Graham has observed that this lack of stelae is a feature shared with sites from the northern Yucatan peninsula, but that

Palenque pictorial art seems most closely aligned to middle Usumacinta sites such as Yaxchilan and Piedras Negras.

⁶ Names of Palenque rulers and calendrical names are spelled as they appear in the literature. When referred to as linguistic data they appear in italics as do all other Mayan words.

⁷ The date is given here in the Maya form with the Gregorian equivalent, according to the correlation proposed by Thompson (1950:303ff). The first number, 9, places the date within approximately a 400 year span from 435-830 A.D. The second number, 12, places the date with a 20 year span from 672-692 A.D. The third number, 15, indicates that the event occurred in the fifteenth year (of 360 days) from 672, that is, 687. The last two numbers give the number of months (20-day periods) and single days respectively. Dedication dates of buildings and monuments are usually new year dates (0 months, 0 days) at intervals of 3, 5, 10, 13, 15, or 20 years. For further explanation of Mayan calendrics see Chapter 3, note 3.

⁸ A glyph block is a visual unit of hieroglyphic text. They vary in size from an inch square to larger than a foot square. Typically they contain from 2-4 individual signs. Some represent only a single syllable, while others may represent an entire sentence.

⁹ Thompson's accomplishment is all the more remarkable in light of the poor quality of line drawings and photographs which he had for reference.

¹⁰ A gloss is a brief approximation of the meaning of a word translated into another language.

¹¹ This description falls short of my own standards of rigor. A complete description of Palenque Mayan should account for all linguistic forms. This grammar is limited to a discussion of a few interesting examples of a variety of linguistic forms. A more

comprehensive analysis will be facilitated by the completion of *A Hieroglyphic Dictionary of Palenque Mayan* (Macri, in preparation). In this dictionary every example of every glyph at Palenque is presented, organized, as nearly as possible, into lexical entries.

Chapter 2. Mayan Historical Linguistics and the Hieroglyphic Script

The comparative method, then. . . would work accurately for absolutely uniform speech-communities and sudden, sharp cleavages. Since these presuppositions are never fully realized, the comparative method cannot claim to picture the historical process.

Bloomfield 1933:318

We lose information also in the complexity of the language we reconstruct. In normal use of the comparative method, we proceed backward by triangulation and eventually posit for each subgroup a dialect-free phoneme. . . . the method itself is not designed to yield anything other than a dialect-free corpus.

Lehmann 1962:84

This chapter addresses the question of the linguistic affiliation of the Classic Period inscriptions. It includes a description the subgrouping posited for the Mayan language family, which is followed by a discussion of the relationship of Palenque Mayan to the other languages recorded in the Maya script during the Classic Period. This picture of linguistic diversity is contrasted with the picture of the Classic Period offered by the comparative method.

2.1. Diversification of Mayan Languages

Figure 2.1 is a diagram of the genetic relationships between the various subgroupings of Mayan languages. The language names are listed in the column on the right. Dates

given for the splitting of various groups are computed from the minimum centuries of diversification listed in Kaufman (1974:957, 1976:103) from a base date of 1950. The group labels such as branch, group, etc. are from Kaufman (class notes 1987). The dates for the diversification of Greater Tzeltalan, Cholan, and Western Cholan are in accordance with Justeson et al. (1985:58) and are "based on hieroglyphic dating of linguistic features, relative chronology of loans, and archaeological dating correlated with diffused linguistic features relatable to linguistic splits." Kaufman and Norman (1984:82) place the dates somewhat earlier, estimating that Cholan had begun to separate from Tzeltalan by 100 A.D., and that Cholan had begun to split into an eastern and western branch by 700 A.D.

The subgrouping shown in Figure 2.1 is generally agreed upon by most Mayan scholars with the exception of subgrouping within the Western Mayan branch. J. Robertson (1977) argues for grouping Kanjobal with Tzeltalan Proper. Intermediate relationships between the Huastecan, Yucatecan, Western Mayan, and Eastern Mayan branches are somewhat uncertain and are not illustrated here. Greater Tzeltalan is the same as Cholan-Tzeltalan (Campbell 1984, Justeson et al. 1985) and Greater Cholan (Campbell 1984). Schumann (1978:104) divides Yucatecan into two groups: *Maya* composed of Yucatec, Itza, and Lacandon and *Maya-Mopan*. Smailus (personal communication, 1984) agrees that of the Yucatecan dialects Mopan is the most divergent.

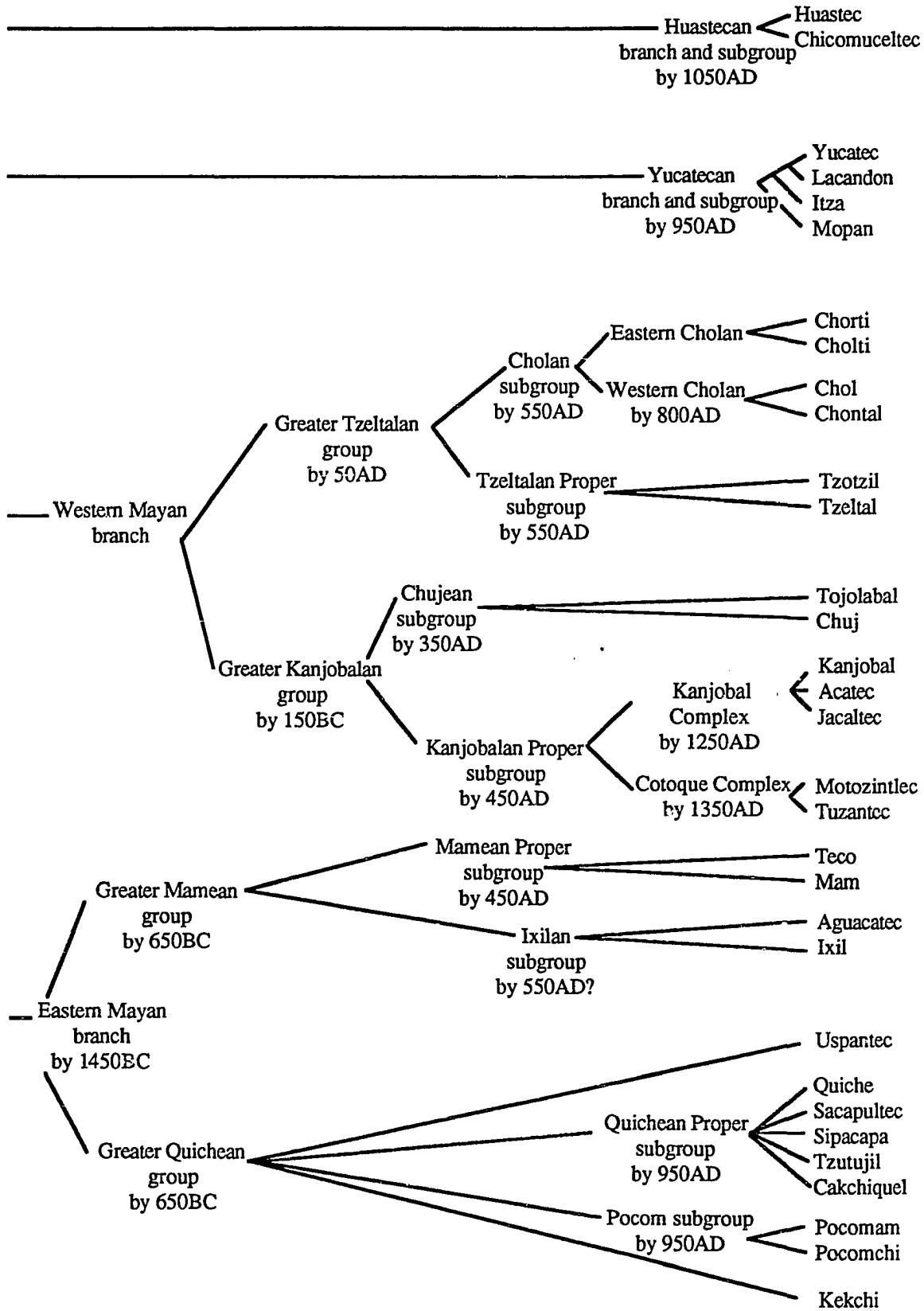


Figure 2.1. Subgrouping of Mayan Languages.

2.2. The Linguistic Affiliation of the Hieroglyphic Texts

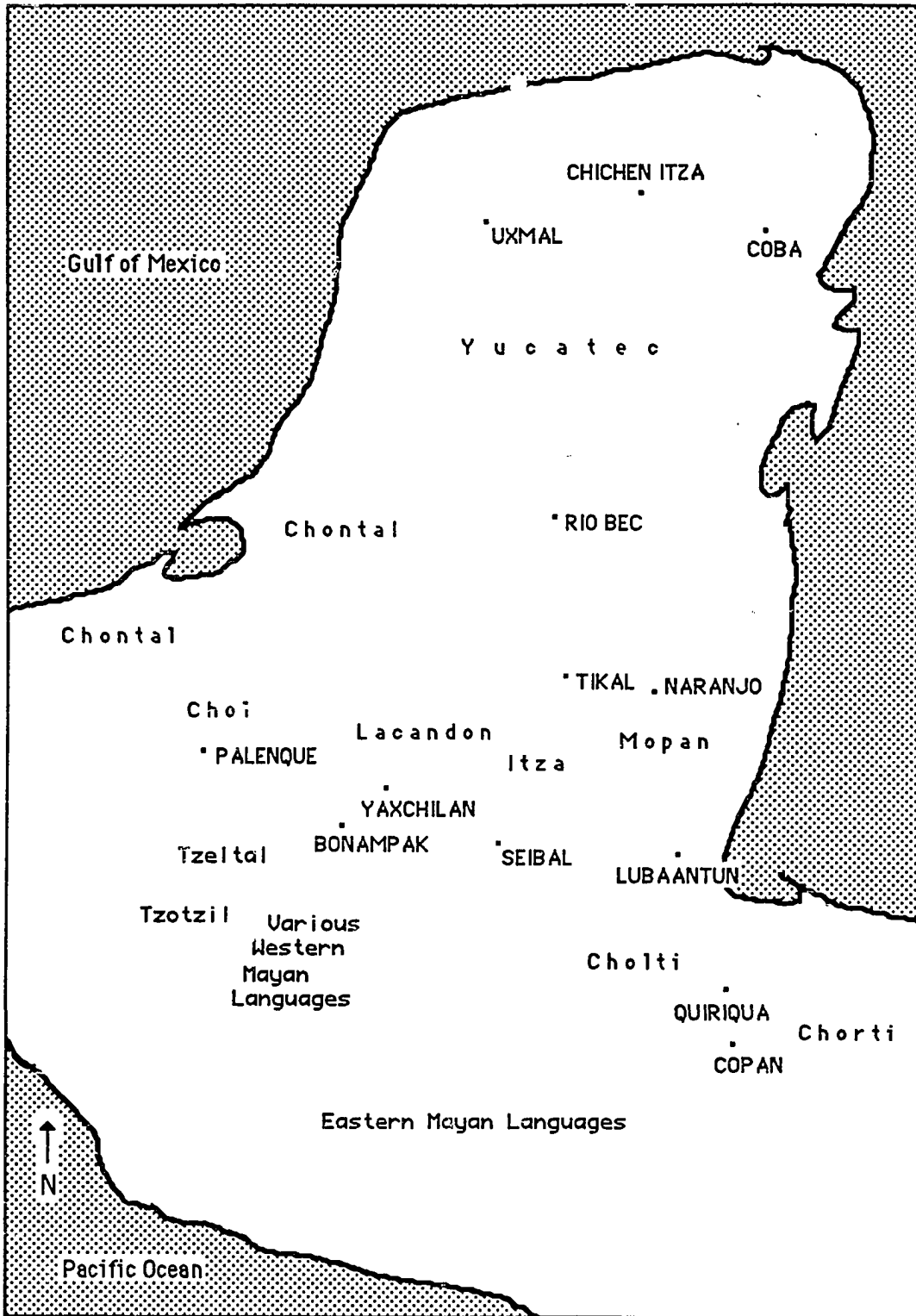
2.2.1. Non-linguistic Evidence

After introducing the languages of the Mayan family, it might be useful to back up a bit to consider the assumption that the hieroglyphic writing system we are discussing records a Mayan language. Since, as some archaeologists put it, "Pots don't speak," why do we assume that the high culture found in Guatemala and the Yucatan Peninsula in the first millennia A.D. was Mayan speaking? Assigning linguistic affiliations to archaeological horizons is a highly suspect undertaking, met with skepticism from linguists and archaeologists alike. What then, if any, is the evidence that the Classic Maya were really Mayan, and not Zoquean, or Mixtec, or Nahuatl?

The most obvious reason for identifying the Classic Maya as the ancestors of modern Mayan speakers is that the geographical distribution of Classic Maya ruins is contained within the area occupied at the time of the Conquest, and still today, by speakers of Mayan languages (see Map 2.1). Linguistically, it is clear that the 30 or so Mayan languages have had a long history of separation from and interaction with each other, and there is no reason to believe that there has been a massive and lasting intrusion of non-Mayan speakers, certainly not as recently as the Classic Period (A.D. 250-900).

Secondly, there are many significant ways that archaeologists can connect the material culture of the modern Maya with that of the bearers of Classic Maya civilization, such as through comparison of pottery sequences, art styles, iconography, costume, architectural design, and building techniques. The continuity of material culture, quite apart from linguistic evidence, strongly suggests that modern Mayan speakers are the progeny of the builders of Tikal, Palenque, and Chichen Itza.

Finally, the hieroglyphic signs found in the ancient inscriptions are very similar to ones being used to record Yucatec at the time of the Conquest (see Section 2.5).



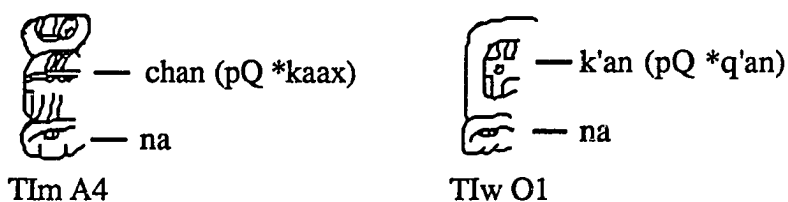
Map 2.1. Approximate Locations of Mayan Languages.

2.2.2. Linguistic Evidence

Linguistic evidence that Mayan languages were recorded by the script comes from the match between phonetic, lexical, and syntactic patterns in the texts with those in known Mayan languages. Furthermore, this evidence suggests that languages represented in most of the texts are related to Greater Tzeltalan or Yucatecan languages. In this section I will show that the Classic Period texts must record Greater Tzeltalan or Yucatecan languages. Additional support for this will be provided throughout the course of this linguistic description.

There are a number of significant differences between the sound systems of the Eastern Mayan, Greater Tzeltalan, and Yucatecan languages that can be used in identifying the language(s) of the glyphs. One has to do with the nasal phonemes. Three nasal consonants have been reconstructed for proto-Mayan: *m, *n, and *ng (Fox 1978, Kaufman 1964, 1969).¹ The velar nasal has merged with the velar fricative /j/ in Quichean and with the alveolar nasal /n/ in Greater Tzeltalan and Yucatecan. The three-way contrast is maintained only in Greater Kanjobalar.

In Macri (1983:225-228) I showed that the phonetic sign /na/, T23, is used to spell words which in Quichean contain either /n/ or /j/, and in Greater Kanjobalan either /n/ or /ng/. For example, T561, the sky glyph, is frequently followed by T23. 'Sky' in Quichean is *kaaj (Campbell 1977), in Jacalteco (a Kanjobalan language) it is *kang*, in Yucatec *ka7an*, and in Chol *chan*. The syllabic sign /na/ also follows the *k'an* cross, T281, as a phonetic complement (see definition in Section 3.5) on the glyph for *k'an*, 'yellow, ripe'.

(2.1)²

Str. I. noun, 'sky' [firm]
Reading: chan [firm]

Str. I.: adjective 'yellow' [firm]
Reading: k'an [firm]

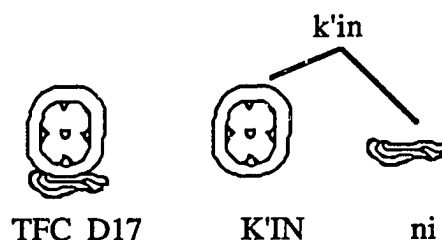
The cognates of this word end in /n/ in all Mayan languages. It can be seen then that /na/, T23, is used in spellings of words with reflexes of *n and those with reflexes of *ng. It is highly unlikely that /j/ and /n/ would be represented by the same sign. This suggests that the script could not have been recording a Quichean or Mamean language.³ A case could be made for underdifferentiating /n/ and /ng/, as in Greater Kanjobalan, but the most likely possibility is that we are looking at spellings of Greater Tzeltalan or Yucatecan words, languages in which *ng has merged with *n.

2.3 Eastern Mayan Languages and the Formation of the Script

In Macri (1983) I suggested that Eastern Mayan languages may have been important during the development of the Maya script. This idea had been proposed before (Dutting 1979:183, Justeson 1978:245-273⁴) but this hypothesis about the earliest stages are currently disregarded in light of the focus on the importance of Greater Tzeltalan languages.

Justeson (1978:273) suggested that the absence of the /ni/ complement (T116) on *k'in* glyphs on Baktun 8 monuments (early monuments) might indicate that the language being recorded was not Lowland (that is, not Yucatecan or Greater Tzeltalan), since *k'in* 'day' ends with /j/ in Quichean, and ends in /n/ in Greater Tzeltalan and Yucatecan. If the sign is recording /q'iij/ then a /ni/ complement would be out of place.

(2.2)

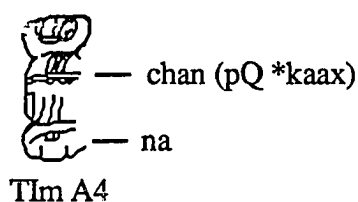


Str. I. calendrical sign for 'sun, day' [firm]
 Reading: k'in [firm]

Likewise, if the logograph for 'sun, day' is read /q'iij/ and the logograph is then borrowed into languages in which the cognate word is /k'i(i)n/ (Yucatecan and Greater Tzeltalan), a /ni/ complement would be added to indicate the correct pronunciation in the borrowing language. Justeson points out that such borrowings often increase the amount of phoneticism in a writing system, and may have contributed to phoneticism in the script of the Classic Period.

I have suggested that the /na/ complement on the 'sky' glyph is another example of a phonetic complement on a logograph that would have ended in /j/ (Macri 1983:227f). It is true, as noted in Section 2.2.2, that *kan* 'yellow' which ends in /n/ even in Eastern Mayan languages also takes the phonetic complement /n/.

(2.3)



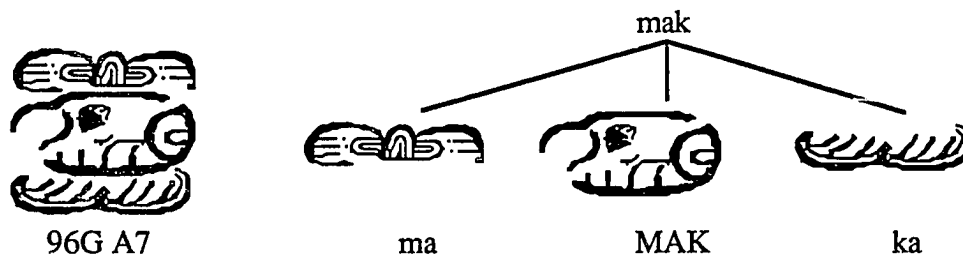
The suggestion here is that the whole custom of adding redundant phonetic complements to logographs originated because the logographs were pronounced differently in their language of origin, an Eastern Mayan language.

In Macri (1982) I compared phonetic elements in the head variants of the numbers 1-13 with words for the numbers in Mayan languages, and demonstrated that the head

variants were primarily phonetic in origin, and that their creators had to have spoken a Mayan language. Further, when the correlations between the phonetic elements on the head variants and the sounds of the numbers are better in one language than another, the Quichean family, often Pocom, emerges as a slightly stronger candidate for the language of origin (Macri 1982:56).

Certain hieroglyphic signs used for the day and month names do not seem to record the names attested in modern Cholan and Yucatec. Preliminary investigation suggests that these may be yet another indication of the role of Eastern Mayan languages in the formative stages of Maya writing. Some calendrical signs, such as the month sign Mac, are clearly a spelling of the Yucatecan and Cholan name.

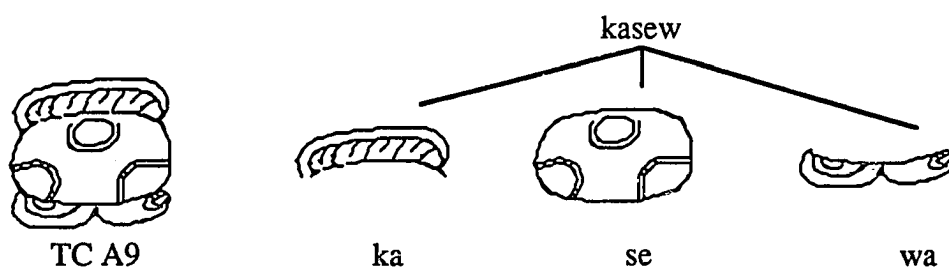
(2.4)



Str. Interpretation: month name, Mac [firm]
Reading: mak [firm]

Others, such as the month Zec, spell the name of the month in Cholan <Cazeu> (Thompson 1950:106) but not Yucatec <Zec>.

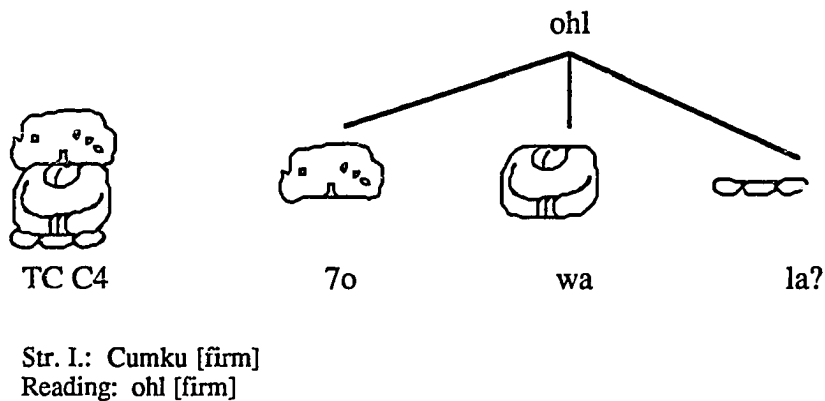
(2.5)



Str. I.: month name Zec [firm]
Reading: kasew [firm]

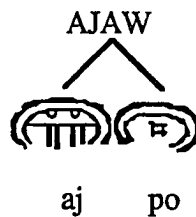
The correlation between other hieroglyphic signs and the words for some of the names points to an Eastern Mayan influence. One example is the month Cumku, which is spelled with phonetic signs /oh/, /wa/, and /la/. A Cholan name for the month is <Oih> (Thompson 1950:106) and the Pocomchi name is <Oh!>.

(2.6)



Another case is the sign for the Yucatecan and Cholan day Ben which Lounsbury (1973) suggested was originally read /aj/ in the *ajpo/ajaw* prefix found on royal titles and emblem glyphs.

(2.7)



The name for the day Ben in Thompson's list of day names (1950:68) is <Ah> in Jacalteco, Ixil, and in Eastern Mayan languages.

The exact nature of an Eastern Mayan influence in the script remains to be explored. Nearly all of the evidence presented here relates to calendrical terms and suggests the possibility that many of the calendrical signs originated in the Highlands. Certainly this topic deserves more attention than it can be given here.

2.4. Diversification in the Classic Period

Cholan had begun to separate from Tzeltalan by 100 A.D., Tzeltalan Proper broke up into Tzeltal and Tzotzil about 600 A.D. (Kaufman 1976:110), and Cholan had started to split into an eastern and a western branch by 700 A.D. (Kaufman & Norman 1984:82). Kaufman quotes Justeson that the separation of Western Cholan into Chol and Chontal began prior to 800 A.D. Since most of the Palenque inscriptions date from approximately 630-730, Palenque Mayan was recorded during about the time Eastern and Western Cholan became distinct.⁵

If Eastern and Western Cholan were only just beginning to diversify at the time of the Palenque texts, we can expect that what is true for proto-Cholan is true for Palenque Mayan, and that modern grammars and dictionaries of both Eastern and Western Cholan languages would be very useful in understanding it.

A critical distinction to keep in mind, however, is that Palenque Mayan is not equivalent to proto-Cholan. It is a real language while proto-Cholan is a hypothesis. Proto-Cholan is based on comparison of linguistic data from Cholan languages gathered since the sixteenth century, most of it gathered within the last 60 years.

The quotations at the beginning of this chapter by Bloomfield and Lehmann are crucial to a correct understanding of the linguistic situation during the Classic Period. A significant consequence of the comparative method is a progressively simplified picture of linguistic diversity as one goes back in time. Bloomfield states simply that it cannot claim to picture the historical process.

Such a simplified picture does not reflect the diversity of ethnic groups found in the Classic Period, as defined by costume, architecture, ceramics, settlement patterns, iconographic conventions, and style of hieroglyphic carvings. Nor does it reflect the diversity of language groups as defined by linguistic features. One of the most significant of these is the difference in the phonetic representations of the locative prepositions and the differences in distribution of function between prepositions and complementizers (see

Chapter 13). Another is the contrast from one site to another of tense/aspect marking.

Using these and other criteria, we can be certain that the hieroglyphic texts at Tikal record a different language/dialect from those of Naranjo. The texts at Palenque record a language/dialect different from Yaxchilan. Even at this early point in these investigations I would estimate that there are at least four distinct language/dialect groups among the Classic Maya, possibly more. The comparative method is indispensable in opening the hieroglyphic texts to us, but it is the hieroglyphic texts, not proto-languages, that provide evidence for this linguistic diversity.

2.5. Yucatec

Bishop Landa recorded that the script was being used in the 16th century to record the Yucatec language. Landa's *Relacion de las cosas de Yucatan* (Tozzer 1941), written in the sixteenth century, records calendrical information—day and month names with glyphs, a glyphic alphabet, and a Yucatec sentence written in the Maya script. Evidence that Mayan languages were recorded by the script in other times and places comes, as we have seen, from the match between phonetic, lexical, and syntactic patterns in the texts with those in known Mayan languages. Furthermore, this evidence suggests that languages represented in most of the texts [perhaps all] are related to Greater Tzeltalan or Yucatecan languages (see Table 2.1).

2.6. The Yucatecan/Cholan Question

In the past there have been several attempts to prove that all the hieroglyphic texts are Yucatecan or Cholan, or to show which archaeological sites contain Yucatecan texts and which contain Cholan. Although consensus about linguistic similarities between sets of hieroglyphic texts and modern language groups is beginning to grow, there is still

considerable debate. One reason for this debate is that phonetic variation has been the most common criteria for grouping the sites, but phonetic differences between languages with similar sound systems viewed through a logo-syllabic script are difficult to discern.

In fact, languages in the Yucatecan and Greater Tzeltalan families share a high percentage of cognate roots and have very similar phonetic systems. What most distinguishes these languages from each other is not differences in their lexicons or sound systems, but differences in morphology and syntax.

The second difficulty with the Yucatec/Chol dichotomy is that the wrong question is being asked. The issue is not whether to put each site, vase, and codex into a Yucatec pile or a Chol pile. The issue is, rather, to look at variations and see what kinds of groupings these variations suggest.

2.7. Criteria for Identifying Linguistic Variation

Just as modern Mayan communities dress and speak distinctively, the Classic Period sites are known for sometimes dramatically distinct architectural traditions and artistic styles. Likewise, within the overall unity of the Maya hieroglyphic texts, there is also great variation, some having to do with physical differences, some having to do with differences in content. Physical differences such as depth of carving and size of glyph blocks are formal aspects of art and reflect artistic considerations. Moreover, physical considerations along with length of texts and density of linguistic information (number of signs per glyph block) give no information about language differences.

There are a number of sources that do give direct information about linguistic differences. Some of these are normally associated with differences in language variety, while others are associated with differences in style—which may not signal a difference in language variety (see Table 2.1 below).

Phonological	[seen in the glyphs as variations in the use of syllabic signs] Associated with language change ex: otot ~ o'och
Lexical	[seen in the glyphs as variations in the use of logographic and/or syllabic signs, or groups of signs] Associated with language change or style ex: batab ~ bakab na ~ ix
Morphological	[seen in the glyphs as variations in the use of affixes or symbols for tense/aspect particles] associated with language change ex: iwal ut
Syntactic	[seen in the glyphs as variations in use of function morphemes, word order] associated with language change or style ex: ta/ti differentiation, use of ta/ti as complementizer
Discourse	[seen in the glyphs as variations in patterns at the level of clause or larger segments of texts] associated with style ex: date, event, subj ~ date event, event, event, subj

Table 2.1. Types of Linguistic Differences

Phonological differences are seen in the glyphic texts as variations in the use of syllabic signs used in phonetic spelling, or as phonetic complements with logographs. The word for 'house' is spelled *yotot* at Palenque and Chichen Itza, and as *yotoch* in the Codices, corresponding to similar differences between modern Yucatec *yotoch* and modern Chol *yotot*. Spelling variations which reflect phonological differences are usually associated with differences in language variety.

Lexical differences, seen in the glyphic texts as variations in the use of logographic and/or syllabic signs, or groups of signs, are not exclusively tied into differences in language variety, but may sometimes indicate only style differences within a single language group. The complementary distribution of the titles *batab* and *bakab* may be indicative of dialect/language variation (at some sites only one or the other title occurs), but substitution of female name prefixes *na* and *ix* (T23 and T126) can occur either as stylistic

variants within texts at a single site, or as candidates for diagnostic features of dialect/language differences when they can be shown to be in complementary distribution.

Morphological differences, on the other hand, are nearly always associated with differences in language variety. They can be observed in the glyphic texts as variations in the use of affixes or symbols for tense/aspect particles. One example of this is the absence of the aspect marker *iwal* from certain sites.

Syntactic differences occur as variations in the use of function morphemes or differences in word order. Many of them are indicative of difference in language variety. One example is the distribution of *ti* and *ta* particles at Classic Period Sites, discussed in detail in Chapter 13.

Variations in discourse style can be seen in the inscriptions as variations in patterns at the level of clause or larger segments of the text. It can be expected that sites speaking the same dialect may have different discourse styles, and that sites speaking different dialects may, in fact, employ similar discourse strategies. Discourse features are not in themselves indicative of differing language varieties.

Various justifications have been given for treating all the hieroglyphic texts as if they constituted a unified corpus. One was based on the assumption that the texts recorded a ritual language—like Latin in the Middle Ages—which was unchanging. Another justification was that the script did not record details of phonology or morphology—that it was "picture writing" and thus could be read across language boundaries, much the same as Chinese.

However, with increased understanding of the texts it becomes clear that there are significant morpho-syntactic and phonological variations that do indicate language/dialect differences. In determining the linguistic affiliates of sets of texts there are several practices that should be avoided:

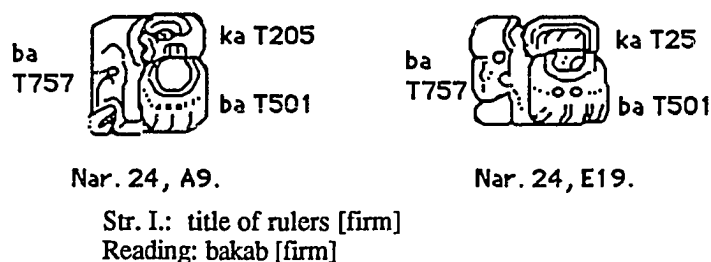
1. confusing linguistic differences with non-linguistic differences
2. associating Classic Period language groups too closely with modern

Mayan languages, that is, superimposing the subgrouping of surviving modern languages on the earlier periods

3. seeing variations in too small a context, thus not being able to tell which variations are significant.

An example of the last is given in the example below. It shows two versions of the title *bakab* from St. 24 at Naranjo. They are identical except that the first uses the fish head for the syllable /ka/ and the second uses the 'comb' variant.

(2.8)



Spelling variations in themselves do not indicate language/dialect differences at all, but rather the expertise and individual preference of the scribe.

2.8. Criteria for Preliminary Identification of Individual Languages

There are some criteria for preliminary identification of texts recording a single language/dialect. In Table 2.2 I have listed conservative time and space parameters in descending order of reliability. In general it is safe to assume as a working hypothesis that a single text represents a single dialect (it is conceivable, of course, that there may be some examples of dialect mixing within a text). A text refers to the hieroglyphic writing occurring on a single stela, lintel, tablet, vase, or codex fragment. Likewise, it can be expected that texts associated with a single ruler, a single building, or a single codex would have a high likelihood of recording a single dialect.

- A single text (stela, lintel, tablet, vase, codex fragment)
- A group of texts associated with a single ruler, or building [less than 100 years]
- A group of texts associated with a single codex
- A group of texts from a single time period at a single site [less than 100 years]
- A group of texts associated with one individual at several sites [less than 100 years]
- A group of texts from associated architecture at a single site [less than 200 years]

Table 2.2. Time and Space Parameters in Descending Order of Reliability for Language/Dialect Identity

Texts from a single time period at a single site, or groups of texts associated with an individual at several sites, or texts associated with related architecture at a single site are also good candidates for recording a single dialect, but with slightly greater possibility of language/dialect variability.

In Table 2.3 I have listed hypothetical time and space parameters which I would judge to have marginal reliability for language identity, until proven otherwise.

- Texts sharing identical phonetic spellings.
- Texts sharing identical logographic collocations.
- Texts sharing identical ti/ta distribution.
- Texts sharing identical event phrases.
- Texts sharing identical lineage statements.
- Texts with similar aspect markings.
- Texts with similar discourse patterns.
- Texts with dates from same time periods but different locations.
- Texts dated indirectly as being from same time period.
- Texts with similar physical characteristics.
- Texts from a single site through time.
- Texts from sites sharing similar architectural, artistic, etc. tradition.
- Texts from a single geographic area through time.

Table 2.3. Possible Time and Space Parameters for Language/Dialect Identity.

As work in this area proceeds I would expect that some traits will prove to be diagnostic of language differences in and of themselves. Other traits will be significant when they are viewed in conjunction with one or more other traits. As we group sites by these traits and draw isoglosses around them, some very interesting patterns may begin to emerge.

From preliminary evidence so far it has become clear that language/dialect differences in the hieroglyphic inscriptions are detectable, and further, that such differences are useful in understanding ancient Maya history and culture. The delineation of these differences will also enrich our understanding of Mayan linguistic prehistory, and possibly of dialectology in general. The first task toward the goal of studying dialects is to describe each of them individually.

2.9. Use of Lexical Sources in Decipherment

Because the Maya inscriptions were written in a logo-syllabic script which is nearly two thousand years old, researchers are dependent on the discipline of diachronic lexical semantics, that is, the study of the processes of semantic change through time. The clues we have with which to discover the meanings of the words represented by the glyphs are:

1. *visual* when the symbol is clearly representative of an identifiable object,
2. *phonetic* when a morpheme is spelled with syllabic signs for which there are established readings,
3. *contextual* when we can determine certain semantic features such as word class or semantic category either by the placement of the glyph within a clause, or in association with certain iconographic images.

The lexicon is that part of grammar which is most intimately tied to the social and material aspects of culture. Semantic change takes place through time within any speech community, but in those speech communities where culture change is rapid or abrupt the natural processes of semantic change are accelerated. In the geographic area of the lowland Maya, traumatic cultural changes have occurred at least three times since the time of the Classic Period: first, at the end of the Classic Period with the disintegration of Classic high culture; second, at the time of the Spanish Conquest; and currently, as a result of increased and accelerating contact with non-Mayan peoples.

Along with the loss of various cultural contexts, certain vocabulary items pertaining

to dress, ceremonial paraphernalia, offerings, ceremonies, political and religious titles were either lost or were extended to refer to more general items. In some cases the loss was of specialized uses for more common words, or the loss of certain metaphors necessary for an understanding of Classic culture. Because of dramatic social, economic, religious, and political changes, modern Mayan vocabularies can be expected to have a limited usefulness for interpreting the Classic inscriptions.

Moreover, published dictionaries of pertinent Mayan languages vary in their completeness. Some, such as the sixteenth century Motul Dictionary of Yucatec (Motul Dictionary 1929) are quite large and include extensive amounts of cultural information. The Colonial dictionaries are especially valuable because they record the language of speech communities less influenced by European culture. Of current dictionaries, The Great Tzotzil Dictionary of San Lorenzo Zinacantán (Laughlin 1975) is notable for its size and its inclusion of grammatical information and lexical detail, including ethnographic detail and special ritual uses of words. These dictionaries, while still falling short of supplying the lexical information held in the mind of a native speaker, are far superior to those dictionaries which provide glosses consisting only of single words or phrases.

The Cholan family of languages is at this time somewhat modestly represented by the Diccionario Ch'ol (Aulie & Aulie 1978), and the Colonial Cholti vocabulary by Moran (1935). The grammar of Chontal of San Carlos (Knowles 1984) contains a lexicon of over 2000 words. Kaufman (Kaufman & Norman 1984) has assembled over 700 cognate sets for proto-Cholan which includes examples from Tzeltal and Tzotzil as well as proto-Mayan forms. Josserand and Hopkins are currently working on a Chol dictionary.

Yucatec is, without doubt, the language family most completely recorded, both in terms of vocabulary and in terms of ethnographic material both from Colonial periods and the present. Thanks to the work of the Chicago and Harvard Chiapas projects, the Tzotzil language comes in a strong second. And, though early sources for Tzotzil are not as extensive as the early sources for Yucatec, the inaccessibility of the Chiapas highlands

allowed the Tzotzil and Tzeltal to reach the end of the twentieth century with considerably more of their indigenous culture intact than, for example, Yucatec speakers who live in the city of Merida.

Ideally, for the study of the glyphs, the student should have access to complete dictionaries of all Yucatecan and Greater Tzeltalan languages, in addition to a lexicon of proto-Cholan forms. Unfortunately, however, 700 cognate sets cannot compare with the wealth of information in the tens of thousands of entries in Laughlin's Tzotzil dictionary. Tzotzil and Yucatec lexicons are obviously going to be of great value, even if they are not the modern languages closest to the ones recorded at a given site. An awareness of sound correspondences between language groups is necessary in hypothesizing about cognate Cholan forms when none is available in published sources.

The glyphic texts themselves present only a fraction of the words of the language as it was spoken, and they always record predictable patterns of elevated speech dealing with a definite limited range of semantic domains. Many of the words recorded have survived into modern times, but seldom without undergoing some amount of semantic change. The epigrapher then must be guided by modern vocabularies, but not limited to them. What, in other circumstances, might look like questionable semantic extensions can be tolerated in the early processes of decipherment and left subject to subsequent corroboration or rejection.

Notes for Chapter 2.

- 1 Fox and Justeson (1980:209) have suggested *nw or *ngw as more accurately describing the proto-sound of the j/ng/n correspondence.
- 2 Hieroglyphic examples are numbered consecutively within each chapter. For each example I am including a structural interpretation (Str. I.) and a reading. Each of these is

labeled for degree of confidence: firm, probable, or speculative. Ideally, at this stage of decipherment, a summary of the arguments for each reading adopted should be presented. In lieu of that I have indicated the degree of confidence with which I offer any given interpretation and reading and I have listed published summaries of readings in Section 3.3. Any interpretation which I am proposing for the first time is explained in the text.

³ Quichean and Mamean languages have not been seriously suggested as languages recorded in Lowland Mayan inscriptions. This linguistic 'proof' only serves to confirm what is already known from cultural and archaeological evidence.

⁴ I don't believe this reflects Justeson's current views.

⁵ In describing the diversification of Tzeltal, Hopkins (1970:203, quoted in Berlin et al. 1974:7) makes a comment about time estimates that applies to other Mayan groups as well: "If allowances are made for dialects that have not been found, and for possible increased cognate retention due to close contact between the various communities, these dates could be moved further back in time."

Chapter 3. The Maya Hieroglyphic Writing System

Because the the Maya hieroglyphic script is only partially deciphered and because it is somewhat unusual even among non-alphabetic writing systems, an understanding of it is more than incidental to this discussion of Palenque Mayan. In this section I introduce some of the terminology used in describing the system, describe the current status of decipherment, and discuss some observed orthographic rules and conventions. I also offer some speculation about literacy at Palenque.

3.1. The Maya Texts as Written Language

Language which is recorded in writing differs from spoken language in significant and predictable ways. Some differences are reflective of the basic differences in the nature of written and spoken language, some reflect the visual component of Maya script, and some are the result of socio-cultural factors.

In almost all scripts there is some amount of under-representation of phonemic elements. Sometimes this is a result of a change in spoken language not being reflected in writing. It may also occur when a script is adopted by speakers of a language other than the one for which it was invented. In this case speakers of the borrowing language may find themselves with more symbols than they need, or without symbols for some of their phonemes. Under-representation of sounds is usually solved by information supplied from context.

Another characteristic of writing is the tendency to under-represent predictable morphemes. A good example of this in English is *5/18/88* for the date read 'May eighteenth, nineteen eighty-eight'. Equivalents of this in the Maya script include the rare

occurrence of obligatory numeral classifiers on dates, and an occasional use of a CV phonetic sign for a CVC root. Abbreviations for common words such as <&> for *and* or titles such as *Mr.* also finds parallels in the Maya script.

As mentioned in Chapter I, the Maya hieroglyphic script was in use for over a thousand years, and many features of the writing system did remain constant through time. Evidence from Landa's *Relación* (Tozzer 1941) written shortly after the Conquest does provide information about some of the same symbols found in inscriptions from the Classic Period. Phonetic and logographic values that have been established for many of the glyphs at other sites can be expected to be valid at the site of Palenque, though ideally, the expected reading should be confirmed by site-internal evidence whenever possible.

3.2. Definitions of Terms

3.2.1. Glyphs

The Maya script employed hundreds of symbols, some of them representing recognizable objects, and others having geometrical forms of unknown significance. The symbols were used both *logographically* (to represent a word or any of its homonyms) and *phonetically*, forming what is called a 'mixed system' in much the same way as Sumerian, Akkadian, Egyptian, or Japanese.

The terms *hieroglyph* and its shortened form *glyph* have been used to name the basic units of the writing system. They have been applied both to individual symbols and to complex symbols composed of central (main signs) and peripheral units (affixes). Knorozov (1967:34) introduced the term *grapheme* for the individual symbol, and used *hieroglyph* to refer to graphic complexes of several graphemes. Kelley (1976:14f) coined the term *glyger* (from *glyph group*) to signify a sequence of two or more glyphs which occur in contexts that suggest together they name an object or an action. Kelley emphasizes that a glyger is not just any sequence of signs, but an analytical unit, "implying some sort

of unitary reference." Bricker refers to similar analytical units as *collocations*, which she defines as "a group of signs that occupies a defined space, or block, in a hieroglyphic text" (1986:1).

I refer to a single symbol as a *simple glyph* or *sign*, and a group of symbols having a single referent as a *complex glyph*. Whenever the term *glyph* is unmodified it retains its customary—and useful—ambiguity. A simple glyph may be further divided into its various elements, such as the Cauac elements over the ear and eye of the face in the personified Cauac sign below,

(3.1)

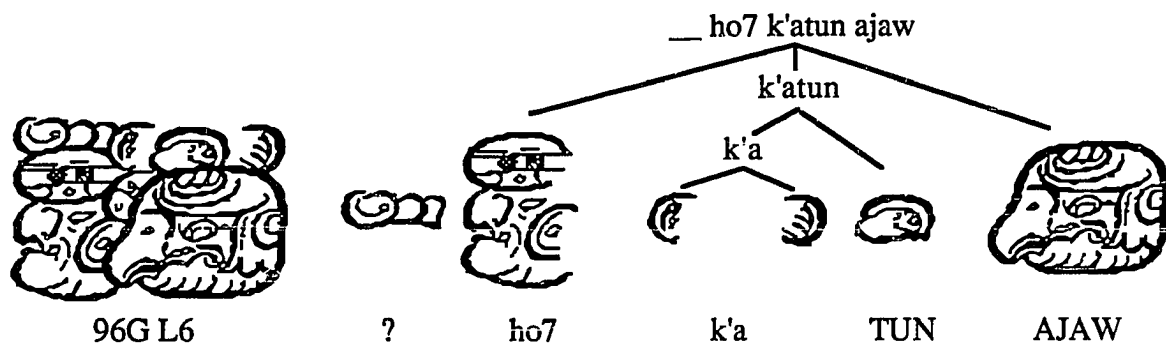


96G I6

but these elements generally do not occur alone as meaningful units in the writing system.

Like Egyptian, the Maya script does contain a number of non-spoken *semantic determinatives*. The presence of semantic determinatives in the script was first proposed by Cordy (1946). Schele (1984:20) cites the 'scarf' as a semantic determinative placed on the vulture head to indicate the reading of *ajaw*, as in Pacal's title below, 'Five katun ajaw', a ruler who lived into his fifth period of 20 tuns (years of 360 days). The number five is represented by the head variant for five, an aged face with the year sign on his head.

(3.2)

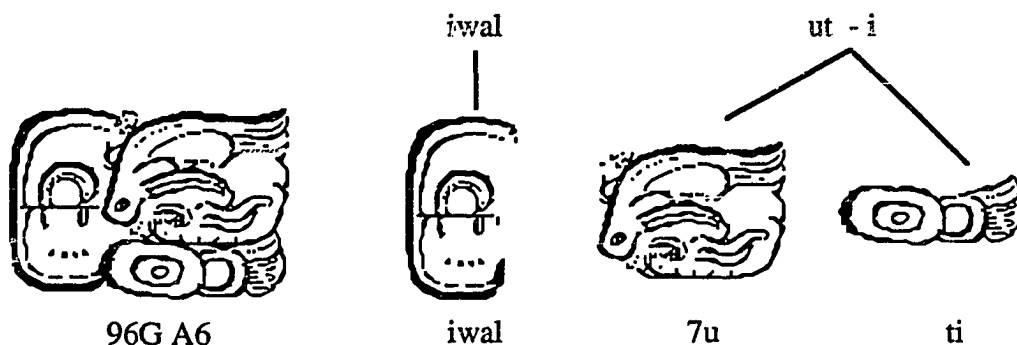


Str.I. a title [firm] 'five katun lord' [firm]
 Reading: ho7 k'atun ajaw [firm].

3.2.2. Compound glyphs

Sometimes two signs which would ordinarily appear consecutively or would be used in the phonetic spelling of a single word—even though there might be an intervening symbol—are joined together. There are three different ways in which glyphs may be compounded.¹ When the contour of one glyph partly covers another, the covered glyph is *suppressed*. In the example below, the *iwal* sign is suppressed by the phonetic signs /u/ and /ti/.²

(3.3)

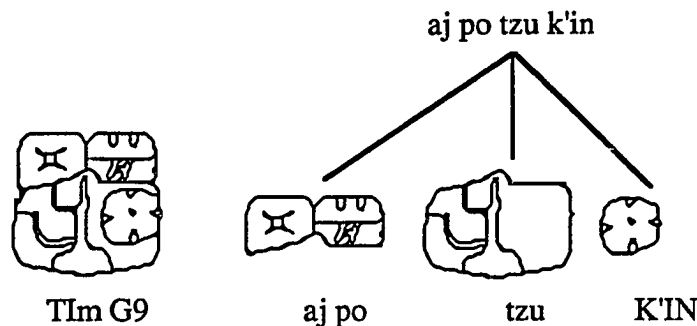


Str. I.: aspect particle/verb [firm]
 Reading: iwal [probable] uti [firm]

When one glyph is put inside another one it is called *infixing*. In the example below from the middle panel from the Temple of the Inscriptions, the *k'in* sign is infixed

inside the month sign Kankin, the phonetic sign /tzu/.

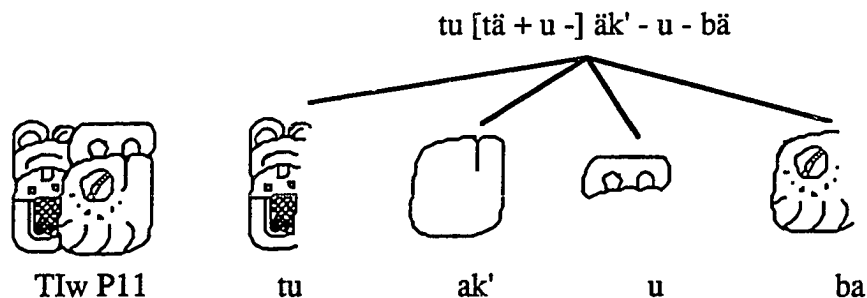
(3.4)



Str. I.: noun related to directions and astronomy [firm] 'alignment' [speculative]
 Reading: ajpo/ajaw [firm] tzu/tzol [speculative] k'in [firm]

When the distinctive features of two glyphs are joined together in a single contour it is called *conflation*. One example from Palenque is the conflation of the phonetic signs /k'a/ and /ba/ in the phrase 'by his offering himself', 'by his bloodletting' (see Chapter 14).

(3.5)

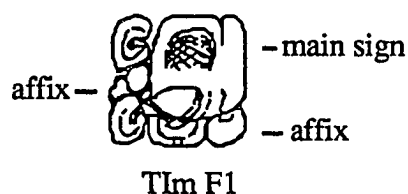


Str. Interpretation: embedded clause [speculative] 'by his offering himself' [speculative]
 Reading: tu [firm] äk' u bä [speculative]

3.2.3. Prefix/Postfix/Main Sign

Various criteria have been suggested for classifying simple glyphs, the most common of which has been the shape and relative size and placement, by which smaller, rectangular glyphs grouped around a central glyph are called *affixes*, and larger square-shaped glyphs which may have smaller glyphs added around them are called *main signs*. In the glyph below there are affixes to the left of and below the main sign.

(3.6)



Thompson (1962:3-29) discusses some of the problems that arise from attempting such a classification, but argues that such a division is warranted, even though a number of signs may occasionally function as a member of either category. His catalog contains prototypical drawings of over 800 different simple glyphs. He assigns the numbers 1-370 to affixes and 500-856 to main signs. Numbers over 1000 (1000-1087 assigned in the catalog) are reserved for what he terms *portrait heads*, that is, profile heads or bodies of humans and animals. Signs above 1300 he lists with sources, but considers them too indistinct to be identified or drawn. Unassigned numbers in each group are left for future discoveries. In the current literature glyphs are commonly referred to by Thompson's designated numbers prefixed by a <T>. A period following a number indicates that the sign following is to the right of the first, a colon if the sign following it is beneath. For example, the *k'a* verb in example (3.6) above would be recorded in T-numbers as T126.669:130.

Beyer (1934) observed that affixes which are bilaterally symmetrical with a vertical axis when used as a superfix, always join to the main signs with their bases, that is, when they are used in different positions (above, below, before, or after a main sign--superfixed, subfixed, prefixed, or postfixed, respectively) they rotate so that they always have the same side touching the main sign.

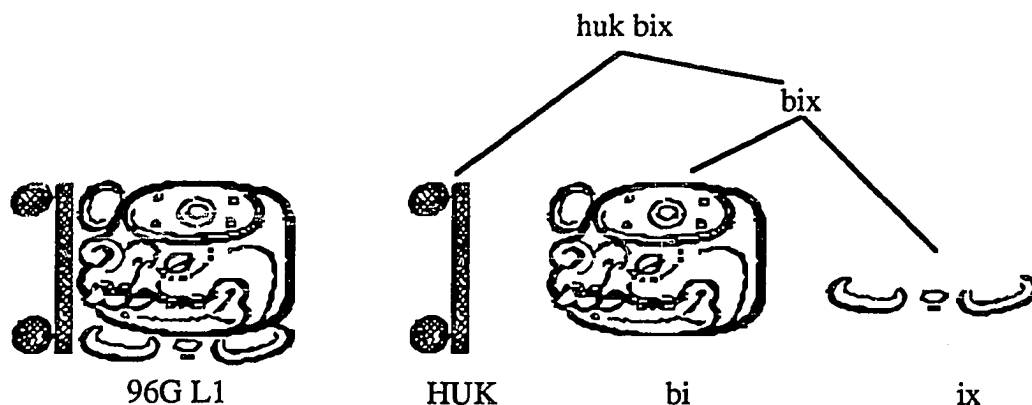
Although rigid criteria for distinguishing affixes from main signs are not available, an examination of patterns of occurrence shows that the distinction is a real one. Not only can nearly all glyphs be clearly identified as being either a main sign or an affix, but nearly

all the affixes can be shown to belong to either the class of prefixes (coming before the main sign, either as a prefix or a superfix) or postfixes (coming after the main sign, either as a postfix or subfix). Of the 370 affixes in Thompson's Catalog, 197 occur only as prefixes, and 48 occur only as postfixes. Of the remaining 125 affixes, many occur overwhelmingly in one category of the other. So there are, in fact, three positions of occurrence that have importance for the majority of simple glyphs: *prefixal*, *central*, and *postfixal*.

3.2.4. Abstract/Personified.

Simple glyphs can also be divided into symbolic, or *abstract*, forms, and human/animal heads, or *personified*, forms. Thompson (1950:44) believed there were very few glyphs which did not have both an abstract and a personified version. The main sign in the glyph below is a personified form of the abstract glyph /bi/. The abstract form is the sign with five circles infixed on the top of the head of the skull.³

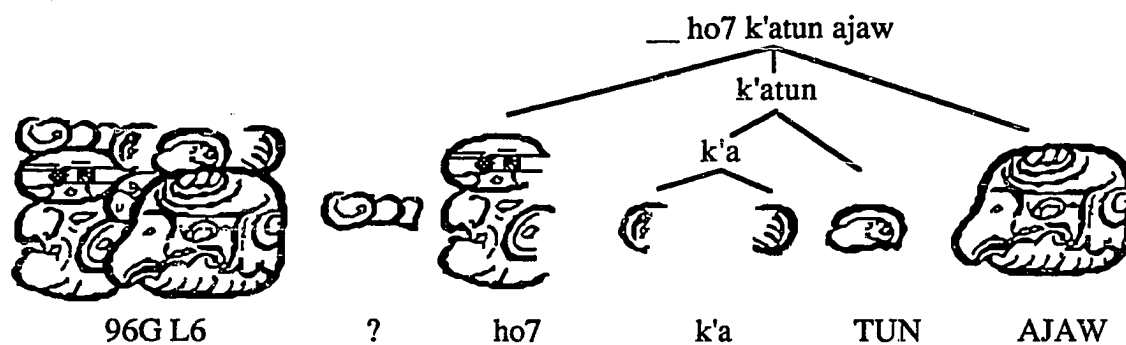
(3.7)



Str. I: 7 days until [firm]
Reading: huk bix [firm]

The following example illustrates the numerical head variant for the number five
ho7.

(3.8)



Str. I.: title, '5 katun lord' [firm]
 Reading: ho7 k'atun ajaw [firm]

Although there are personified forms for the period glyphs, for some of the day signs, and for the numbers (they have a bar/dot and a personified form), the majority of glyphs do not have both variants.

3.2.5. Decipherment

An ideal description of a simple glyph would include the following information:

1. The *object* the scribe intended to draw, or, in cases where the original significance is no longer known, the object the sign originally signified (this presupposes that all glyphs have a pictographic origin, which is unproven, but commonly assumed).
2. The *original word* for the object represented by the glyph.
3. The *word* the scribe intended when he recorded the glyph.
4. The *sound* represented if the glyph was used as a phonetic sign. For Maya writing this normally means the CV syllable represented. This may be, but is not necessarily, related to a known word for the object represented.
5. The *function* of the glyph. That is, for some glyphs no reading is known (or agreed upon), but its patterns of occurrence may indicate a great deal about the activity, title, object, or person it signifies.

Additionally, for each type of information we must consider whether or not polyvalence (that is, more than one meaning) has been a factor synchronically or

diachronically, and whether or not such polyvalence occurred within the same language or cross-linguistically.

Although a full history of the development and literal meanings of each of the glyphs is valuable to the study of Maya epigraphy, it is not essential to a synchronic analysis of Palenque Mayan. What is important in this analysis is to discover as fully as possible what phonetic and logographic values each of the signs had for the literate citizens of Palenque.

3.2.6. Phonetic Sign/Logograph.

A simple glyph may function iconically, as a *pictograph*, in which case it represents the object pictured, or it may function *logographically* and represent the word for the object pictured and its homonyms. Pictographs are not language specific; logographs are. For example, a logographic puzzle of pictures of an eye + a saw + an ant + a rose + a leaf, could signify the sentence "I saw Aunt Rose leave." But this signification applies only if the objects are named in English. If words for the objects in any other language are used, the sequence makes no sense at all. In the Maya script, the picture of a gopher signifies 'gopher': *bah*. It does not signify the idea of a gopher in all languages. The usage of the gopher in phonetic spellings for the syllable /ba/ or the reflexive morpheme *bä* are language specific, not ideographic. Schele (1984n:19) cautions that even though some glyphs are known only as phonetic signs, or as logographs, or as determinatives, all possible uses should be tested for.

3.3. Major Figures in Decipherment

The topics of early investigations were, in large part, dictated by the nature of the texts themselves. The first discoveries, made in the late 1800's, primarily by Förstemann (for example, 1904), Seler (1902-1923), and Goodman (1897) had to do with the

calendrical system.⁴ Calendrical and chronological issues remained important throughout the first half of the twentieth century in the work of Morley (1915, 1920, 1937-38) and Thompson (1929, 1935, 1936, 1950) and were nearly the only areas in which significant progress was made.

One of the first linguists to take an interest in the Maya script was Whorf (1932, 1942). He believed that the script was phonetic, that it represented spoken language, and that the figures in the codices (the bark paper books from the Postclassic Period, approximately 900-1300 A.D.), on ceramic vessels, and on most Classic inscriptions were integrally related to the texts which they accompanied and could be useful in decipherment. Unfortunately, he earned the contempt of Eric Thompson and other eminent epigraphers for his beliefs, which were out of favor from the turn of the century until the 1960's. His hastily offered readings displayed a lack of familiarity with the glyphic texts, which further alienated the archaeologists. Whorf's impact was significant enough, however, that Thompson (1950) included an appendix: *Whorf's Attempts to Decipher the Maya Hieroglyphs*.

Knorozov, a Russian linguist, was a second major figure trained in linguistics to write about the Maya script (1958a, 1958b, 1965, 1967). He was the first to accurately describe it as a mixed logo-syllabic script, composed of logographs, syllabic spellings, phonetic complements, and determinatives.⁵ His work was rather coolly received by Western scholars, particularly Eric Thompson (Thompson 1953a, 1953b, 1959). Kelley was able to select the best of Knorozov's contributions, and as a consequence gave a new impetus to the study of phoneticism in the script (1962a, 1962c, 1976). Decipherment began to gain momentum as his notions about the phonetic component were coupled with the discoveries of Berlin (1958, 1959, 1963, 1965, 1968) and Proskouriakoff (1960, 1961a, 1961b, 1963, 1964) concerning the historical content of the inscriptions and the identification of individual names and events.

As decipherment has progressed, linguistics has become increasingly more important and more useful. Of course, the first contribution of linguists was simply providing information about the vocabulary and grammars of Mayan languages. The next degree of involvement was that scholars trained in linguistics become interested in the script itself and drew directly upon their own first-hand knowledge of Mayan languages in their epigraphic studies. At a conference called *Phoneticism in Maya Writing* held at SUNY-Albany in 1979, linguists provided relevant information about earlier stages of Mayan languages spoken during the Classic Period and phonetic differences between Cholan and Yucatecan languages. The published version of the proceedings (Justeson & Campbell 1984) includes an article on Mayan historical linguistics (Campbell 1984), 714 cognate sets of proto-Cholan vocabulary and a sketch of proto-Cholan morphology (Kaufman & Norman 1984), a paper on verb morphology (MacLeod 1984), and other articles by linguists on interpretations of particular glyphs (Fox & Justeson 1984, Lounsbury 1984, Mathews & Justeson 1984, Schele 1984, Stuart 1984).

In an effort to make linguistic material available to students of the glyphs, MacLeod (n.d.) includes lists of verbal affixes from Cholan and Yucatecan languages coupled with a discussion of verb morphology and affixes found on verbs in the inscriptions. Bricker (1985) and Josserand et al. (1985) both treat verbal constructions in the Maya script, and discuss issues of transitivity and partial ergative systems.

A notable recent linguistic contribution is Bricker's *A Grammar of Mayan Hieroglyphs* (1986). It contains a description of the nature of the script, and a summary of Yucatecan and Cholan pronominal inflection. There are chapters on nominal and verbal inflection in the glyphs and a chapter on syntax. Bricker draws upon her extensive knowledge of modern and Colonial Yucatec and Tzotzil to provide some interesting discussions of glyphic interpretations. Her discussion of tense/aspect is particularly useful. An unfortunate limitation of Bricker's work is that, although she agrees that the script was

used by speakers of several languages, she deals with the script as if all the glyphic texts could be described by a single grammar. This is unfortunate since many of the ambiguities in phonetic readings, logographic interpretations, and morphological processes are clarified when texts are studied one dialect at a time.

Although most of the Classic Mayan people are believed to be speakers of a Cholan language (Campbell 1984, Fox & Justeson 1984, Justeson et al. 1985, Kaufman 1976, Kaufman & Norman 1984, MacLeod 1984), there is evidence from the inscriptions that the Late Classic and Post Classic Codices and Classic inscriptions at some of the northern and central sites record a language related to modern Yucatec.⁶ Preclassic inscriptions from the Guatemalan Highlands and the Pacific Piedmont, which are precursors of the Classic Maya style, may have recorded some Eastern Mayan language, and possibly even non-Mayan languages such as Mixe-Zoque.

3.4. CV Phonetic Signs Recognized at Palenque

Knorozov (1967) was the first to suggest that the Maya script was composed of logographs and CV phonetic signs. Tables 3.1 and 3.2 list the Thompson catalog numbers of glyphs used as CV phonetic signs at Palenque (figures of these signs are given in Appendix II). There are over 80 different glyphs (over 120 Thompson numbers) for about forty different syllables. Evidence for these various phonetic readings have appeared in the scholarly literature, and have been summarized in several sources. Knorozov (1967), proposed readings for several hundred signs. For some readings he gave a brief explanation, but for many he offered no explanation at all. Kelley (1976:182-183) arranged 37 glyphs (for which he considered phonetic values to have been adequately demonstrated) in the form of a syllabary grid. Many of his identifications were based on Knorozov's work, some on Landa's alphabet. In 1979 at a conference on phoneticism in Maya writing at SUNY Albany, a number of prominent Maya glyphicists and linguists,

including Lounsbury, Kelley, Schele, Campbell, Kaufman, Fox, Justeson, MacLeod, and Stuart, compiled an updated version of Kelley's syllabary. Justeson (1984a) lists interpretations of over 400 Thompson numbers by nine of the participants of the SUNY conference. This list was current to 1984. Mathews (1984) shows a syllabic grid based on the SUNY conference illustrating 108 signs/variants of signs for 55 different syllables. The most comprehensive presentation for the entire history of Mayan epigraphy is in Ayala Falcón (1985) which gives full bibliographical references for all glyphic interpretations listed. Phonetic readings which have appeared in publications since those summaries were prepared include Bricker (1986), Grube (1987), Grube & Stuart (1987), Lounsbury (1983), Love (1987), Macri (1985), and Schele (1987n). A notable recent contribution to phonetic decipherment is Stuart (1987). It contains arguments for ten new phonetic readings and includes a syllabary with nearly 98 signs representing 58 different syllables. Schele (1988n) contains a similar syllabary with 62 signs for 37 different syllables. Neither of these includes references for the readings.

None of the above summaries are limited to a single area or time period, but include signs found throughout the Maya area from late Cycle 8 monuments (c.250 A.D.) to the Codices (c. 1300? A.D.). The grid in Tables 3.1. and 3.2., however, is specific to the site. Probable equivalent signs (those with the same referent and the same phonetic reading) are indicated by <=>. I consider most of these signs to be accurate, and I accept these interpretations as a working hypothesis. A few of them may be proven in the future to be incorrect. This inevitable progress may negate some specific readings, but it will not undermine the basic principles of decipherment, our understanding of the structure of the texts, nor most phonetic readings which are based on fairly secure evidence. As with any scientific discipline it is vital, first of all, that we are aware of what our assumptions are, and second, that we repeatedly challenge them, and remain open to new possibilities. This summary includes over 130 signs for 52 different syllables.

	i	e	a	o	u
p	177		202 = 586 = 602 = 1023	141 = 687	785
b'	585a = 1029		60 251 501 = 558 757 = 788		
p'					
t	51 = 53 59	87	51 = 53 102 103 113 245 565 747b	44 = 49 = 138 512? 515?	89 = 90 = 92
t'					
tz	507 758?			559	
tz'	563a 756				
ch	219 = 671	145 = 148		87.512 = 857 = 515 = 601 765a	
ch'	93				
k	102		25 203 = 205 (some) = 738 526 = 1004	110	528
k'			28 669		149b 604

Table 3.1. Syllabic Grid of Signs at Palenque

	i	e	a	o	u
m			74 502	582	19
n	116	120 606	4 = 48 23 117 537 1000a, b		
s	57	520			216
x	126		114?	536	
j/h	88 126? 136		12 84 584 181 = 683b 228 = 229 238 = 743		128
l	24 82	188 610	180 546 217 = 713a 140 = 178 = 534		
y	17 = 575		125? = 126?	115 673	128
w	117		130 506		
7	125 = 126	542a		155 = 279 = 280	1 = 3 = 10 = 11 = 105 = 191 204 = 205 = 738c = 741b 230 = 231 = 232a? 513

Table 3.2. Syllabic Grid of Signs at Palenque.

In the syllabic grids for Palenque there is no column for *Cä* since it was not differentiated from *Ca* signs (see Section 5.1.6). Signs for glottal stop plus a vowel /TV/

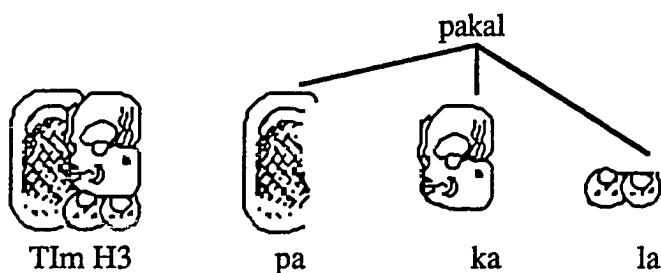
are listed last, since some of these may, in fact, represent the vowel alone. Some syllables have no phonetic signs listed at all. There are several possible explanations for these holes. One is, the sign may exist, but it hasn't been recognized yet. Another explanation is that the syllable may have such a low frequency of occurrence that a syllabic sign for it was never formulated, or if one did exist it was used so infrequently that we will have a difficult time discovering its significance.

3.5. CV₁C(V₁), Synharmony

Knorozov (1967:48ff) proposed that Maya syllabic spellings operate according to the principle of *synharmonic notation*, that is, words which end in a consonant have the final consonant indicated with a syllabic symbol representing that consonant followed by the same vowel as the one preceding, that is, CVC is spelled with two signs CV_i + CV_i. Synharmonic spelling is illustrated by this phonetic version of Pacal's name *pakal*

pa+ka+la:

(3.9)



Str. Interpretation: name of two rulers at Palenque [firm]
Reading: pakal [firm]

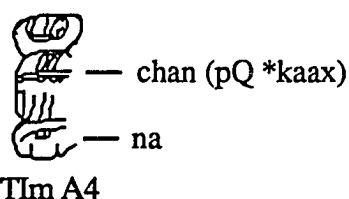
This principle is characteristic of syllabic writing systems throughout the world. There has been some discussion as to whether in the Maya script it might not be just as accurate to say that *kal* is written syllabically as *ka + al*, and that the glyph for *la* is also read *al*. It may be the case that some syllabic Maya signs are used exclusively for VC sequences, but for the most part, whether we have CV signs used for final consonants or

whether we have C with V signs which are used for either CV or VC is not especially relevant to the presentation here.

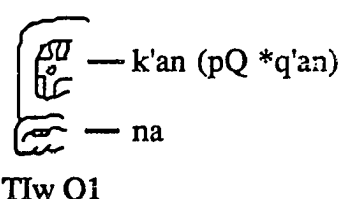
Sometimes the vowel of the second phonetic sign is not the same as the vowel in the first one. There are several possible explanations for this, each of which may be correct some of the time. One is that, in fact, a CVCV reading is intended. A second is that the phonetic value assigned to one of the signs is incorrect. Finally, the Maya scribe may not have held to the principle of synharmony as rigorously as we might have expected. It may be the case that Ca and Ce signs (consonant plus /a/ or /e/) sometimes functioned as vowel neutral syllables (Justeson 1978:291), or that vowels adjacent to each other in the vowel space were interchangeable (Ci ~ Ce, Ce ~ Ca, Ca ~ Co, Co ~ Cu), but this has not yet been convincingly demonstrated.

Bricker (1986:7) differentiates between syllabic and phonetic complement functions of phonetic signs. A phonetic complement is a redundant sign which occurs following logographs as in the representations of *chan* 'sky' CHAN+na and *k'an* 'yellow' KAN+na.

(3.10)



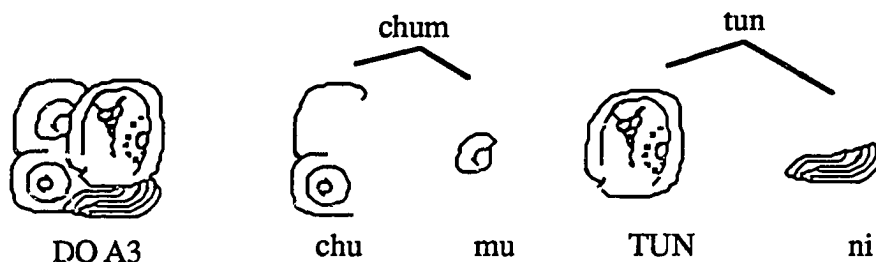
Str. Interpretation: noun, 'sky' [firm]
Reading: chan [firm]



Str. Interpretation: adjective 'yellow' [firm]
Reading: k'an [firm]

Bricker proposes that phonetic complements are less likely to be synharmonic than are signs used in syllabic spellings. Non-harmonic complements occur in representations of the word *tun* 'year' TUN+ni

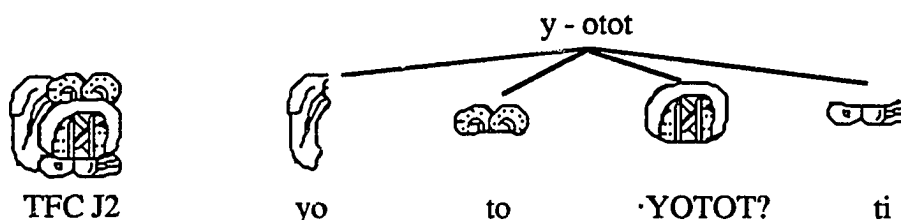
(3.11)



Str. I.: 'the seating of the tun' [firm]
 Reading: chum iun [firm]

and *yotot* 'his house' YOTOT+ti.

(3.12)



Str. I.: possessed noun 'his house' [firm]
 Reading: yotot [firm]

Further, Bricker, following Justeson's suggestion that /e/ and /a/ functioned as neutral vowels in syllabic signs, suggests that this accounts for more Ce and Ca syllabic signs than signs for Ci and Co. As more phonetic signs have been identified, however, this observation does not hold. The totals for syllables identified with each vowel are: Ci 16, Ce 6, Ca 12, Co 9, and Cu 11. The mid vowels are the least well represented, while the extremities of the vowel space are the best represented, high front, low mid, high back, although Co and Cu are very close in number. This same pattern is found in the syllabic grids proposed by Stuart and Schele. The pattern may simply reflect the frequencies of occurrence of particular syllables rather than any substitution patterns among CV signs.

3.6. Acrophony

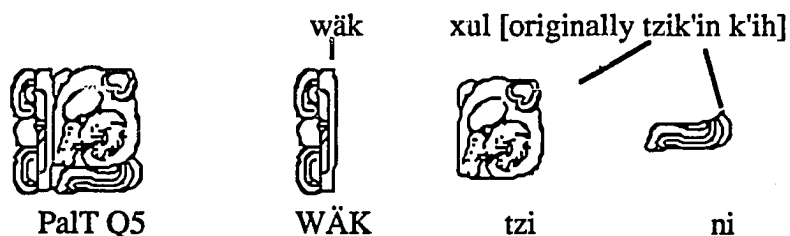
There has been some discussion as to whether or not CVC logographs could, on

occasion, function acrophonically as CV phonetic signs. Ringle (1985:157) suggests that evidence against acrophony is not as conclusive as some epigraphers have believed. He goes on to make a very important point, "The formation of the script probably did not develop along so rational a plan, and we must be wary of imposing *a priori* principles in advance of a more complete understanding of the script."

3.6.1. Acrophonic Origins of CV Syllabic Signs

There are actually two types of acrophony in the Maya script. One is the use of a logographic sign as a syllabic sign representing the first syllable of the word. An example of this is the sign which I propose is the head of a tapir, *tzimin*, which represents the syllable /tzi/. It is part of the glyph for the sixth month sign Xul. The word for this month in Ixil is <Tzikink'i>, in Pocomchi <Tzik'in K'ih>, and in Cakchiquel, <Tzik'in K'ih> (Thompson 1950:106). The hieroglyph for the month is composed of the face of an animal and the 'tail' sign commonly suffixed to *k'in* 'day'. I would like to suggest that it is a conflation (see Section 3.2.2) of the glyphs for *tzimin* 'tapir' used to spell the syllable /tzi/, and *k'in* 'day' (*q'iiij* in proto-Quichean), represented here only by the 'tail' affix T116 (the sound /in/ of the word *k'in* 'day'), and thus represents /tzi/ and /k'ih/, the first two syllables in the Ixil, Pocomchi, and Cakchiquel names for the month.

(3.13)

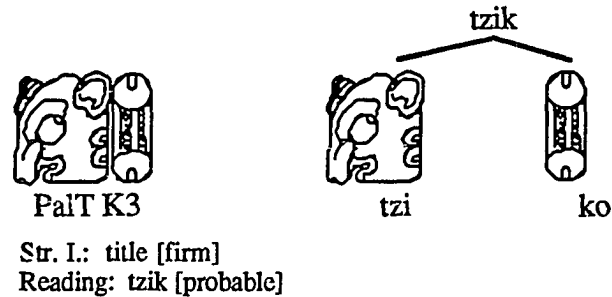


Str. I. day in the Sacred Calendar, 6 Xul [firm]
Reading: wäk [firm] tzik'in [probable]

Although the names of this month in Yucatec and Greater Tzeltalan languages are not cognate, the value of /tzi/ for T758a is confirmed by the reading of *tzik* for the complex

glyph known as the 'rodent bone title', T758a:110. Grube and Stuart (1987) have proposed a reading of /ko/ for T110. The consonantal value of that sign, /k/, combined with the tapir head gives a phonetic reading of *tzik* for this title which is found with rulers' names at Palenque and throughout the Classic Maya area.

(3.14)



The word *tzik* in proto-Cholan and Yucatec is a transitive verb root meaning 'to count'. We can imagine that someone might be entitled 'The One Who Counts', particularly in a Maya society in which keeping track of complex calendrical calculations was a respected occupation. In the early dictionaries of Yucatec, however, there is an even more appropriate meaning. *Tzik* is used as an adjective, 'well bred'; as a verb 'to honor'; and as a title with the meaning of 'honored, important' (Barrera Vasquez 1980:859f):

- ¹TSIK crianza, buena crianza, respeto, veneración, honra, etc.
(breeding, good breeding, respect, veneration, honor, etc.)
- ²TSIK bien criado ser [respetable, reverenciable]
(well bred)
- ³TSIK obedecer, honrar
(to obey, to honor)
- ¹(AH) TSIK hombre cortés y cortesano, galante, afable
(a gracious man, gallant, affable)
- ²(AH) TSIK soberbio
(magnificent, arrogant)

These meanings may not be unrelated to the root for 'count'. In any case, they are

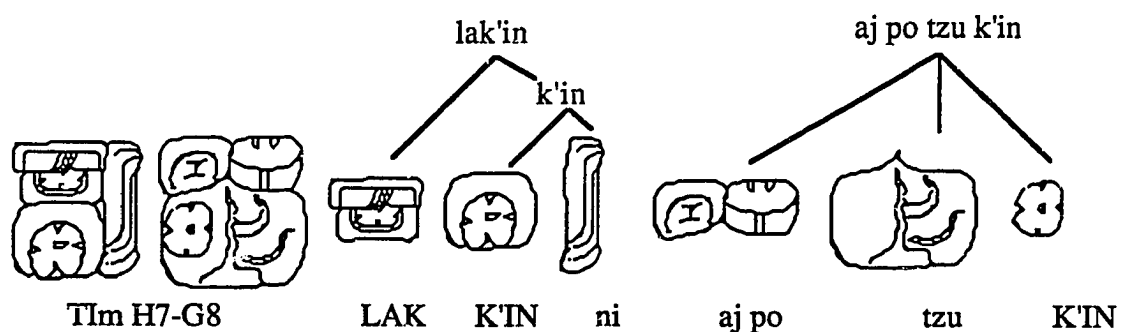
clearly appropriate to the meaning that has already been established for the glyph, that of a title of rulers. The fact that such a title has not survived in Cholan (or rather, does not appear in published lexicons of Cholan languages) is very possibly an artifact of the processes of semantic change and loss discussed in Section 2.9.⁷

3.6.2. Acrophonic Representation of CVC Roots

A second type of acrophony is the use of a CV sign for a CVC root. Such a reading has been tentatively proposed by me for the syllabic sign /tzu/ in the reading *tzol* 'alignment' for two occurrences of /tzu/ in astronomical passages in the middle panel from the Temple of the Inscriptions (see Section 5.2.3).

lak'in aj po tzol k'in 'eastern solar alignment'

(3.15)



Str. I.: phrase relating to an astronomical event [firm] east [firm] eastern solar alignment [speculative]
 Reading: lak'in [firm] aj po [firm] tzol [speculative] k'in [firm]

A rationale for acrophony can be found in the phonological process of the devoicing of final sonorants (*l, r, y, w, m, n*). This is common, not only in Mayan languages, but in so many Mesoamerican language families that Campbell (1979:955) and Campbell et. al. (1986:537) cite it as one of the shared phenomena characteristic of the Mesoamerican linguistic area. The sonorants, the velar and glottal fricatives /j/ and /h/, and the glottal stop /ʔ/ are all likely to be under-represented when they occur in syllable-final position.

3.7. Phonetic Content of Signs

A sign can be labeled phonetic if it represents a CV(C) syllable (even if the syllable happens to be a word, so long as the sign is used phonetically as well as logographically) in phonetic spellings.

It is often the case that a single glyph can function either as a logograph, signifying one of several possible words and the homonyms of each of them, or as a phonetic sign, usually representing a CV syllable. Logographs represent a word and all its homonyms, and in that respect they, like syllabic signs, impart phonetic information. An important distinction is, however, that logographs by definition maintain morpheme boundaries, but syllabic signs maintain phonological boundaries.

In order to avoid potential ambiguity, another glyph, or sequence of glyphs, may be added. The supplemental glyph or glyphs may be logographic, and indicate which of several possible readings is intended. In this case it is called a *semantic determinative*. The semantic determinative is not intended to be read, but is present merely to indicate a particular reading for the glyph in question.

3.8. Glyph Blocks

Up to this point, the discussion has been limited to the smallest unit of Maya writing, the simple glyph. In this section I would like to show how simple glyphs, affixes and main signs, form larger units of writing. Visually, the most striking division of a text is the *glyph block*. A glyph block can be made up of a simple glyph, a complex glyph (a combination of main signs and affixes), or any combination of simple and complex glyphs.

Glyph blocks and double columns are divisions based only on the graphic appearance of the texts, and do not reflect linguistic units. However, the most significant textual units are defined by their meaning, and are based on language. These include

clauses composed of a verb and its argument noun phrases and larger blocks of texts which begin with a date or verb and end with a proper name, title, or emblem glyph.

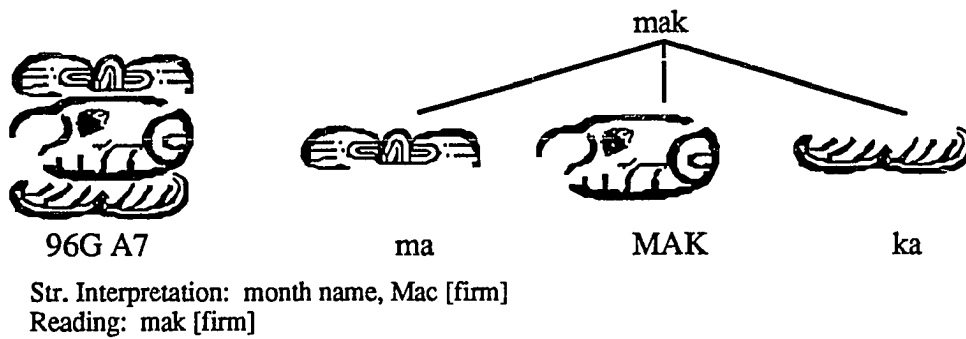
There are a large number of glyphs identified by Thompson (1962) that do not occur at Palenque. In some cases this is simply because Thompson has assigned different catalog numbers to two or more signs which are chronological or geographical variants of one another, with only one variant recorded at this site (since the time-span of Palenque inscriptions is relatively small, Early Classic or Postclassic variants would not be present). In other cases, a word may be represented differently at Palenque because it was cognate with words recorded at other sites, but pronounced differently, or because a non-cognate word or expression was used.

The inscriptions at Palenque appear to have a higher percentage of phonetic spellings than texts at other sites. This may, however, be a reflection of the fact that Palenque has longer texts and thus offers more material for comparison and thus greater opportunity for discovering phonetic readings. It may also be because the Palenque texts have been studied more thoroughly than inscriptions at many other sites (see Section 1.5). In any case, the texts at Palenque do contain a large number of phonetic signs which are readable, and a great many more which have yet to be deciphered.

3.9. Orthographic Trees

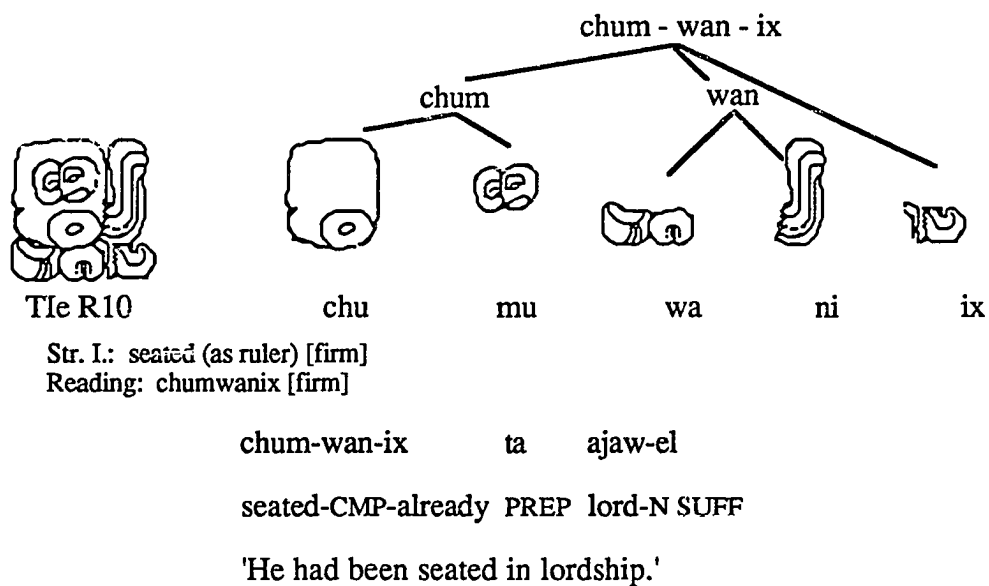
When citing examples of spellings of words in the hieroglyphic texts I have used a device I refer to as *orthographic trees*. The purpose of these diagrams is to separate the visual features of the signs into a linear order to illustrate the relationship between the sign and the phonetic and lexical information it conveys.⁸ The bottom line gives phonetic /CV/ signs usually in CV form. If a logographic sign is used, as in this example of the month name Mac, it is spelled in upper case letters.

(3.16)



The next level is the joining of signs to form morphemes, in the example below, *chum* and *wan* and *ix*. In some cases there is a third level for the inflected word as in *chumwanix*. 's/he was seated' (for analysis of this phrase see Section 8.3).

(3.16)



3.10. Literacy at Palenque

At Palenque nearly all the examples of writing which have survived into the twentieth century are statements of political history carved or painted on the walls of buildings. This is probably a very small and unrepresentative sample of the kinds of things that were once written. The extent of literacy and the identity of the authors of the

monumental texts can only be inferred from ethnohistorical data about sixteenth century Yucatan and the hypotheses of epigraphers and archaeologists. It is very possible that literacy varied from site to site, and century to century; certainly the length, complexity, and artistry of the hieroglyphic texts do.

It clearly was the case that to be fully literate in the writing system, and to have command of the calendrical system, the astronomy, and the history, a considerable amount of training would have been necessary. This full literacy would have been required in order to compose the complex hieroglyphic texts that were found at Palenque. The literacy required to read these texts is somewhat less demanding. A familiarity with the calendrical signs, the signs for birth and accession, and the names of the rulers would be sufficient for a reasonable appreciation of the texts. This amount of information would be potentially accessible to anyone who was interested, or who was allowed to be interested.

The hieroglyphic inscriptions were at least minimally accessible to some portion of the population, or they would not have been placed on public display. Many were not totally public, for example the tablets from the Temple of the Inscriptions and the Group of the Cross were on the back walls of the buildings on the top of the temples. Even if they could be seen, they could only be read by people who were allowed to approach close enough to see the detail. The painted and carved inscriptions of the Palace were likewise, at least, semi-private.

Given the amount of specialized traditional ritual and scientific information shared by Classic Maya literate scribes (whether they were priests or rulers or elite), there must have been a specialized vocabulary with words and phrases and metaphors that were learned along with it. If, however, they recorded this information in a single language or in a single dialect of a language, there would be much less variation in the texts from one site to another. When the texts are submitted to careful linguistic analysis it becomes obvious that they reflect regional and temporal variation.

It is, indeed, occasionally possible to detect hieroglyphic texts that do not seem to fit with the style of a particular site. In these cases it may be that we are dealing with texts composed by non-local scribes—in some cases conquerors, in others possibly captives (Miller 1987). These anomalies become more obvious as our literacy increases, and we become more familiar with signs, spellings, morphology, and syntactic patterns. Investigations into socio-linguistic variation are only beginning. Eventually they will provide reliable and interesting information about the social structure of the Classic Maya civilization, and about interrelationships between the various groups.

Notes for Chapter 3.

¹ This definition of compounding differs from that found in Schele (1987n:7). She defines compounding as the joining of two glyphs into a single glyph block. A glyph block, however, is simply a visual unit, not necessarily reflective of any linguistic process. Suppression, infixation, and conflation, on the other hand, can only occur when the glyphs involved are part of the same word or sentence.

² Explanations for each figure are included in the chapter on phonology unless otherwise noted. Any new interpretations of logographs or phonetic signs are noted in the explanation. Likewise, new semantic interpretations arrived at by applying previously proposed interpretations to complex glyphs are identified as well.

³ These terms are not completely satisfactory. Animal bodies, and human and animal body parts, such as hands, do not fit in the *personified* category, but, at the same time, are not strictly *abstract*.

⁴ I would like to introduce here a few of the calendrical terms used by epigraphers. The

Long Count is a count of years (tuns of 360 days) from the beginning of the current era, almost always counted by the Classic Maya from a base equivalent to (according to most modern scholars) 3114 B.C. It begins with an Initial Series Introductory Glyph. The current date is given in units called baktun (144,000 days/400 years of 360 days), katuns (7,200 days/20 years of 360 days), tuns (360 days), uinals (20 days) and kins (days). The celebration of katun endings, as well as half and quarter katuns, and 3 tuns (at Tikal) and 13 tuns, were very significant to the Classic Maya. The Calendar Round date has two parts, a Sacred Calendar of twenty day names paired with a continuous series of coefficients from 1 to 13, and a 365 day calendar of 18 named months of 20 days each, and a nineteenth month of 5 days. A full Initial Series date consists of a Long Count and a Calendar Round, and is usually accompanied by a Lunar Series which supplies information about the current lunar month. Initial Series dates at Palenque are found on the Olvidado piers, the first panel of the Temple of the Inscriptions, the hieroglyphic stairs of House C, the tablets from the Cross Group, the Palace Tablet, and the jambs from Temple XVIII. Calendrical names are cited by their Yucatec forms in the spelling used by archaeologists (c=k, k=k'). In most cases the pronunciation of these names in Palenque Mayan is not known.

⁵ These concepts will be discussed in Chapter 2.

⁶ I know of no published articles which deal specifically with Yucatecan readings, although it is commonly assumed, and frequently mentioned, that at least some of the sites were Yucatecan speaking.

⁷ Since I wrote this section I have learned that David Stuart, Nikolai Grube, and Barbara MacLeod have independently proposed /ch'o/ as the phonetic value of what I have called the 'tapir head'. *ch'ohok is 'mouse' in proto-Cholan (Kaufman and Norman 1984:119),

an explanation of the animal head, and in Chontal, and in other Cholan languages *ch'o7* is 'intelligent, brave' and *ch'ok* is 'son or daughter, child' (Knowles 1984:416), appropriate meanings for the rodent bone title. The /ch'o/ reading also fits synharmonically with the vowel of the reading /ko/ for T110, the affix on the animal head, while /tzi/ does not. It does not, however, fit with any of the names for the day Xul. Although /ch'o/ is currently favored by several epigraphers I have decided to leave my proposal for /tzi/ as it stands, pending further evidence favoring one reading or the other.

⁸ The hieroglyphic images were created on a Macintosh. Line drawings of hieroglyphic texts (by Linda Schele and Merle Greene Robertson) were digitized using ThunderScan. The orthographic trees were drawn in SuperPaint and imported into Microsoft Word 3.01. Printing was done on a LaserWriter Plus.

Part II. Phonology

Chapter 4. Introduction to Phonology

The phonetic values of the characters in ancient writings can never be surely known; thus, the actual sounds represented even by the alphabetic symbols of languages like Ancient Greek, Latin, Gothic, or Old English, are, in part uncertain.

(Bloomfield 1933:294).

This chapter is a description of the sound system of Palenque Mayan. The problems associated with describing the sound system of a language recorded in an only partially deciphered script are even greater than those encountered by historical linguists working on a known script. Not only is the phonetic data imperfect due to the inevitable limitations of recording spoken language visually, but many of the symbols used in the script are not understood.

4.1. Methods of Investigation

Nevertheless, a description is feasible because the hieroglyphic texts do record language, and because that language can be investigated from two separate, but interactive approaches: comparative reconstruction of the phonologies and lexicons of appropriate languages, and internal evidence within the hieroglyphic texts themselves.

Just as reference to any related language can be helpful in comparative reconstruction, many of the phonetic readings for specific glyphs used at Palenque were discovered through examination of iconographic associations or substitution patterns found in texts from various Maya sites or codices. In spite of recent advances in the field of Maya

epigraphy, there are a number of phonemes which have simply not been identified in the texts. These gaps in the phonology can sometimes be filled in with data available through comparative reconstruction.

The first step in using the comparative method is to consider which languages are spoken in the area of Palenque at the present time, and, if possible, which languages were spoken there at the time of earliest contact. If, based on archaeological and linguistic evidence, a good case can be made for cultural continuity from the seventh century to the time of contact with the Spanish, then we would expect Palenque Maya to be an ancestor of modern Chol. However, given the collapse of the Classic Maya civilization around 900 A.D. and the profound disruption brought about as a result of the Spanish conquest (see, for example, Scholes and Roys 1948) it might be wise to broaden the language possibilities to include neighboring Cholan, Tzeltalan and Yucatecan languages. Phonological evidence, such as the spelling of 'house' *otot* (Yucatec *otoch*), and the locative preposition *tā* (Yucatec *ti*) suggests that Yucatecan is not a likely candidate, so the remaining choices are the Cholan and Tzeltalan families.

The second step in making use of the comparative method is to look at proto-languages in the relevant families at the appropriate time depth. The bulk of the inscriptions at Palenque are from the Seventh Century. According to subgrouping of Mayan languages discussed in Chapter 2, the Cholan subgroup had divided into Eastern and Western Cholan by 550 A.D., and the Tzeltalan subgroup had divided into Tzotzil and Tzeltal by 550 A.D. Western Cholan would be separating into Chol and Chontal by 800 A.D. Given that these dates are approximations, and that the real picture was probably more complex than Figure 2.1 would indicate, data from both proto-Cholan and proto-Tzeltalan is likely to be relevant.

4.2. Proto-Greater Tzeltalan

There have been at least two attempts at reconstructing proto-languages within the Greater Tzeltalan branch, the branch which includes both the Tzeltalan and Cholan language families. The first is Kaufman's *El proto-tzeltal-tzotzil: Fonología comparada y diccionario reconstruido* (1972). This reconstruction includes extensive data from five Tzeltal and four Tzotzil dialects; less extensive data is included from an additional 12 Tzeltal dialects. The lexicon contains over 800 entries. The second reconstruction is Kaufman and Norman's *An Outline of Proto-Cholan Phonology, Morphology, and Vocabulary* (1984). This includes an inventory of Common Greater Tzeltalan phonemes and canonical forms, a listing of internal Cholan sound correspondences, a comparison of Yucatecan and Greater Tzeltalan sound changes, and over 700 lexical reconstructions of proto-Cholan vocabulary frequently citing Tzeltalan and proto-Mayan forms.

The phonemes reconstructed for Common Greater Tzeltalan are identical to those found in most of the modern Greater Tzeltalan languages with the following exceptions. The phonemes /h/ and /j/ have merged in all languages except for Tzeltal Bachajon, /p/ is present in all modern languages in the group, and long and short vowels have merged except in Cholan where /aa/ went to /a/ and /a/ to /ä/. The phonemes posited for Common Greater Tzeltalan are listed below (Kaufman & Norman 1984:84).

consonants:	p	t	tz	ch	k	ʔ
	bʼ	tʼ	tzʼ	chʼ	kʼ	
			s	x	j	h
	m	n				
		l				
	w			y		
vowels:						
	i	u	ii	uu		
	e	o	ee	oo		
		a		aa		

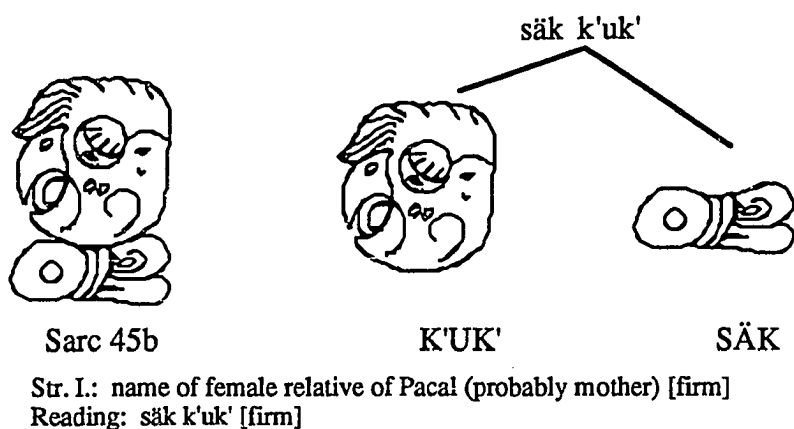
Table 4.1. The Reconstructed Phonemes of Common Greater Tzeltalan.

Because there is only minor variation in the sound systems of Greater Tzeltalan languages, linguistic reconstruction of proto-Cholan, proto-Tzeltalan, and proto-Greater Tzeltalan provides a fairly clear idea of what sounds we would expect to find in Palenque Mayan.

4.3. Representation of Sounds in the Palenque Texts

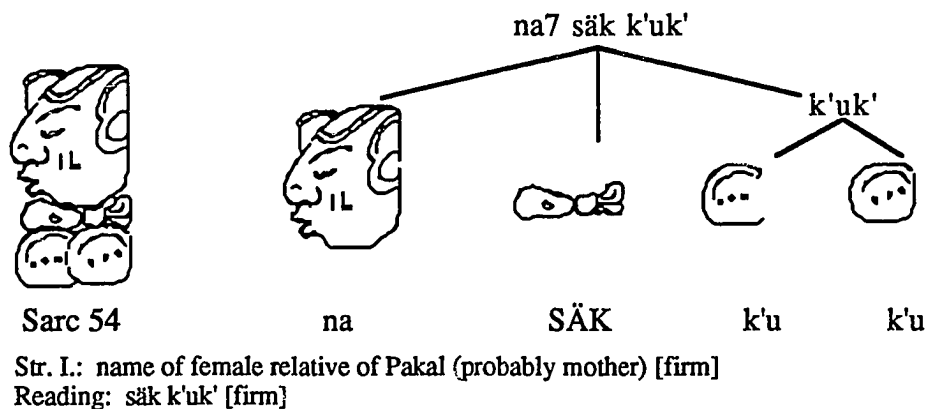
The sound system of Western Palenque Mayan is represented in the hieroglyphic writing by both logographic and syllabic signs. The sounds represented by logographs can be known with some certainty when the protoform of the word for the object pictured is consistent with phonetic complements that sometimes appear with the logograph, or when the word is spelled phonetically in a parallel context. A good example of different kinds of spellings of a single word is the name of the mother of Pacal the Great who was named *Säk Kʼukʼ* 'White Quetzal'. In most of the occurrences of her name we see the head of a quetzal bird (with the distinctive bill and crest) above the glyph for *säk* 'white'.

(4.1)



That the correct phonetic interpretation and morpheme order is *säk k'uk'* (ADJECTIVE + NOUN is what would be expected) is confirmed by an example of the name spelled with two syllabic signs for /k'u/ (T149b) appearing beneath *säk* (T58).² The name is preceded by the face of a woman /na/ T1000 for the title 'lady, woman, mother'.

(4.2)



The following chart lists the phonemes that can be demonstrated with some degree of certainty to be represented either by syllabic or logographic signs in the hieroglyphic texts. The only phoneme from modern Mayan languages not represented by at least a logographic sign is /p/. Its absence is probably due to the fact that it is not found in very many words, thereby making it difficult to detect if it is present. Those phonemes not

represented by any known phonetic signs, that is, known only from logographs, are underlined.

consonants:	p	t	tz	ch	k	ʔ
	b'	<u>t'</u>	tz'	<u>ch'</u>	k'	
			s	x	j	h
	m	n				
		l				
	w			y		
vowels:		i			u	
	e		<u>ä</u>		o	
			a			

Table 4.2. The Phonemes of Palenque Mayan.

Notes for Chapter 4.

¹ The phoneme /b'/ is written *b* without the apostrophe indicating glottalization throughout this work, except for Tables 4.1 and 4.2.

² Within glyph blocks signs above or to the left are generally read before signs below or to the right. Graphic considerations, such as putting a personified glyph on top, sometimes, as in this case, take precedence.

Chapter 5. The Phonemes

5.1. Vowels

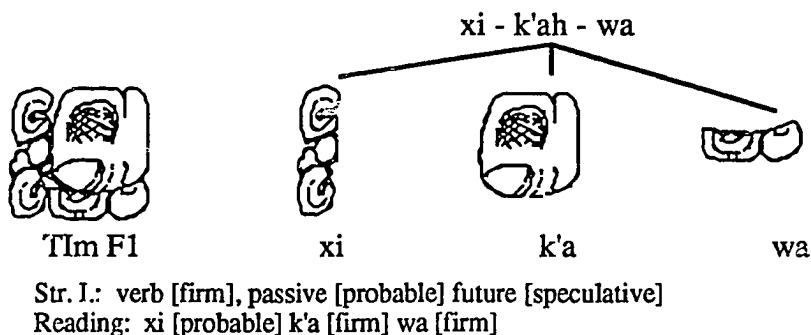
Palenque Mayan has six vowels /i/, /e/, /a/, /o/, /u/, and /ä/. A very good case can be made for the existence in Mayan languages of a glottal stop at the beginning of any root which does not begin with some other consonant. In other words, there are no VC roots, they are really 7VC. It is customary, since initial /ʔ/ before vowels is predictable, that it is often not represented in our spelling system. I have followed that custom here, indicating root-initial glottal stop only when trying to call attention to it.

5.1.1. /i/

The phoneme /i/ appears in the first syllable of the word *xik'ahwa* 'it will be commemorated'.

This verb occurs repeatedly in the count of the katuns in the text from the Temple of the Inscriptions. It is discussed in detail in Section 6.3.

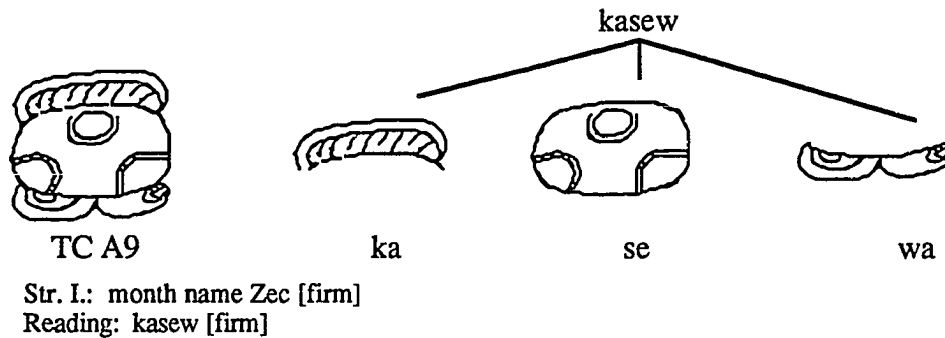
(5.1)



5.1.2. /e/

Here /e/ is represented by the syllabic sign /se/ in the second syllable of *kasew* 'Zec', the name of the fifth month in the 365 day calendar.

(5.2)



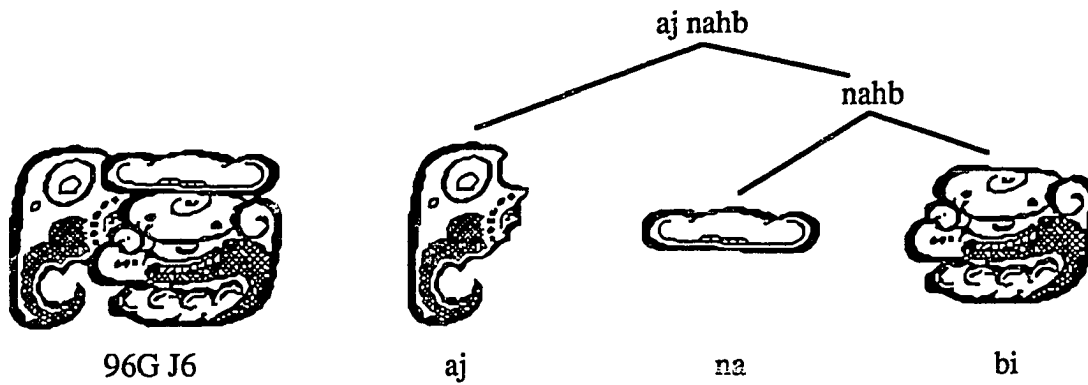
5.1.3. /a/

The sound /a/ is represented by a number of phonetic signs and occurs in many logographs. One example is given here, but there are many examples throughout this chapter.

aj nahb

nahb means 'sea, lake, body of water' or 'waterlily' so this title means literally 'he of the sea/water lily'. This is the second element of Chaacal's name, completing the couplet, 'he of the lightning, he of the sea'. In some examples the /aj/ sign is the same in both phrases; in this one example, which follows 96G I6 (see example (5.44)), the second /aj/ is the turtle beak. It is uncertain whether the final vowel of the /bi/ sign should be read or not.

(5.3)



Str. I.: title of rulers, part of name of Chaacal [firm] 'he of the waterlily', or 'he of the sea' [firm]
 Reading: aj nahb [firm]

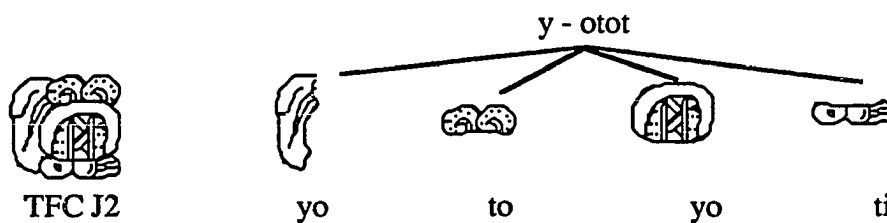
5.1.4. /o/

The example below has three syllabic signs containing /o/, one of which is redundant.

yotot 'his house'

This example is particularly interesting because of detailed phonetic information that it may provide. The second sign which I am proposing be read as /yo/ may only be present as a logograph for 'house'. If, however, it is functioning as the phonetic sign /yo/ it may indicate the presence of palatalization of /t/as it occurs in modern Chol. The Chol pronunciation of house is [yotʲotʲ].

(5.4)



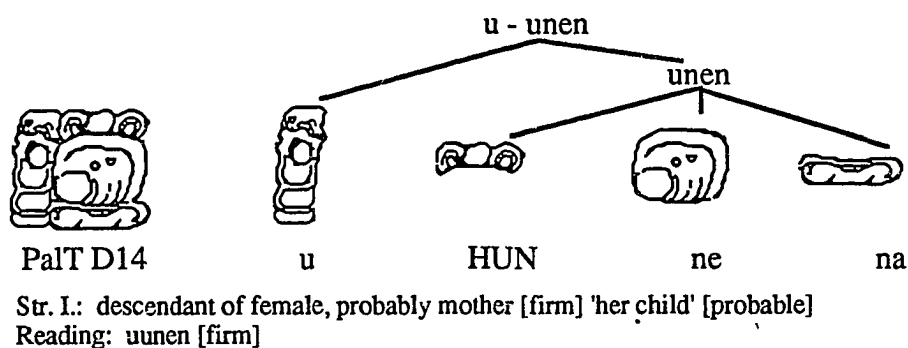
Str. I.: possessed noun 'his house' [firm]
 Reading: yotot [firm]

5.1.5. /u/

In this example the first vowel /u/ is represented by a syllabic sign /ʈu/. The second one is represented by the logograph HUN (a circle for the number 'one' *hun*). It may very well be that /ʈu/ + /hun/ + /nen/ indicates the vowel cluster /uu/, here spelled <uhu>, in the pronunciation /uunen/ in which the initial glottal stop of *ʈunen* is lost following /u/.

uunen 'her child(ren)' (see discussion of this glyph in Chapter 12).

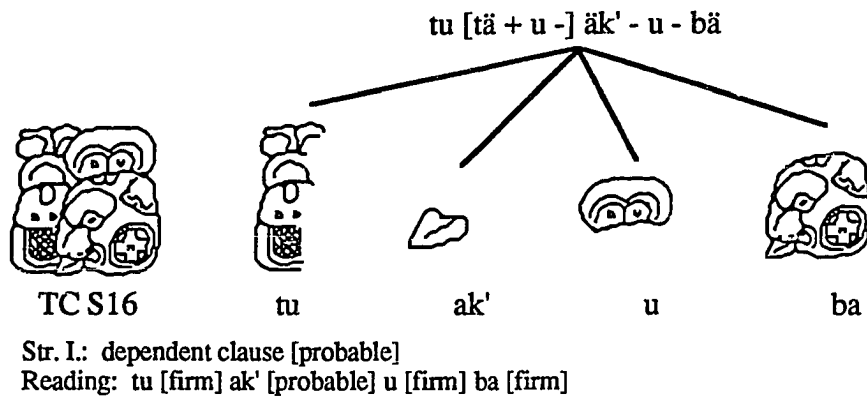
(5.5)



5.1.6. /ä/

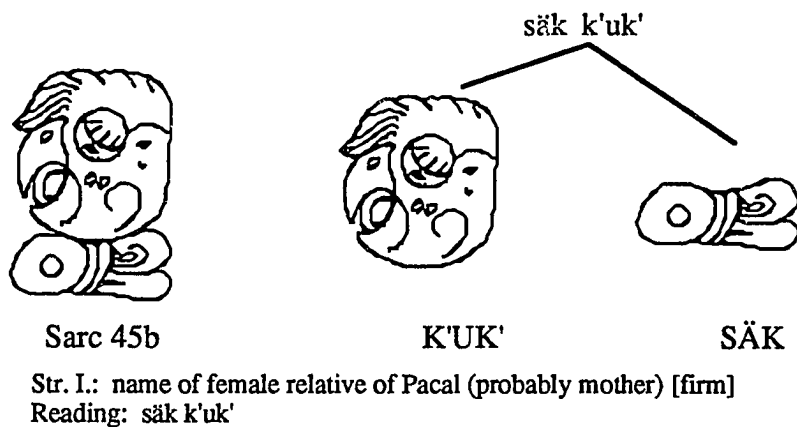
As noted in Section 3.4 /a/ and /ä/ were not differentiated in the writing system although we can be fairly certain from the sound systems of modern Cholan languages that /ä/ was present in the language. There are some phonetic signs and many logographs that certainly would have contained /ä/. Among them are the syllabic sign /ta/ when used for the preposition *tä*, the sign /ba/ when used for the reflexive *bä*. See Section 5.3 and Chapter 14 for more discussion of this glyph.

(5.6)



It would also have been represented in the logographic signs for the colors *chäk* 'red', *k'än* 'yellow', *yäx* 'green', and *säk* 'white'.

(5.7)



Signs for *bahläm* 'jaguar' and *äk'bäl* 'night' are some of the other logographs that are assumed to have contained /ä/.

5.2. Consonants

Palenque Maya has 20 consonants: 3 bilabial stops, 2 alveolar stops, 4 affricates, 2 velar stops, a glottal stop, 3 fricatives (possibly 4), 2 nasals, 1 lateral, and 2 semivowels.

5.2.1. Bilabial stops /p/, /b/

Modern Cholan and Tzeltalan languages have a voiceless bilabial stop /p/, a voiced ejective /b/, and a voiceless ejective /p'/. The phonemes /b/ and /p/ are well-represented in the Palenque texts, but there are no known logographic or syllabic representations of /p'/.

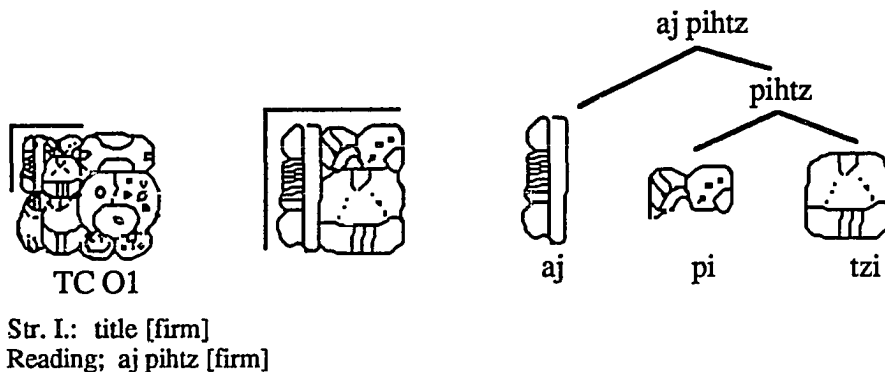
5.2.1.1. /p/

The following words have been written with syllabic signs for the syllables /pi/, /pa/, /po/, and /pu/. There is no known symbol for the syllable /pe/.

pihtz in the title *aj pihtz* 'ballplayer'

The reading of *aj pihtz* was recently identified by David Stuart. The word for 'game' or 'to play' in Cholti is *pihtz* (Moran 1935:39). The Yucatec cognate is *pihtz* 'to play ball' (Barrera Vasquez 1980:657). It is included in this glyph block as part of the Bac Balan Ahau title (Schele 1985).

(5.8)



tup 'earring' in the phrase *u - tup* 'his/her/their earring(s)'

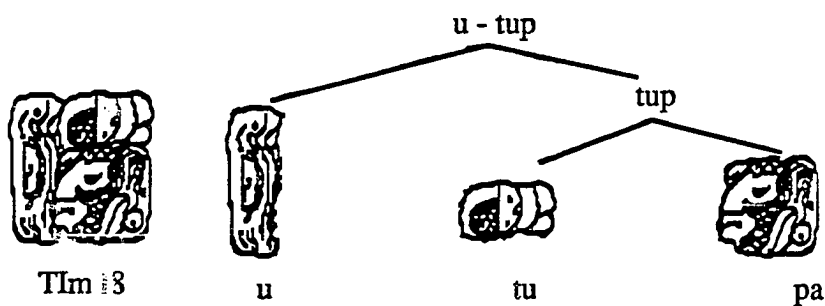
The word 'earring' was first recognized in Maya writing by Mathews (1979:79) on a pair of ear ornaments excavated from a tomb at Altun Ha, Belize.

Name-tagging has now been found on many items from the Classic Period.

Although this glyph has been read as *utup* for some years, I believe this is the first suggestion that it means 'earring'. For more discussion of the passage in which this occurs see Section 6.3. There are several signs listed in Table 3.1 for /pa/, but they are variations of each other all having in common a large cross-hatched area.

Compare the head in this example with the cross-hatched cartouche in the name Pacal in example (5.9).

(5.9)

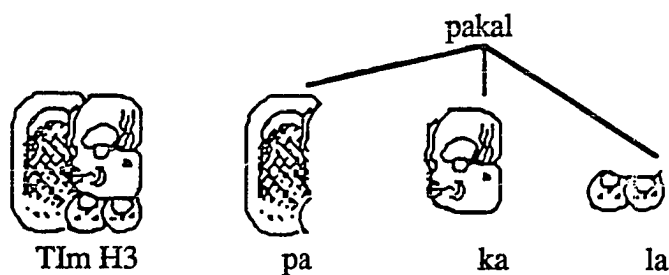


Str. I.: noun [probable] his earring [probable]
Reading: utup [firm]

pakal 'shield' in a phonetic spelling of the name of the ruler Pacal

There is some variation in phonetic spellings of Pacal's name. Sometimes /pa/ is spelled with the head variant version. In this example the fish head for /ka/ is used instead of the more common comb-shaped sign.

(5.10)

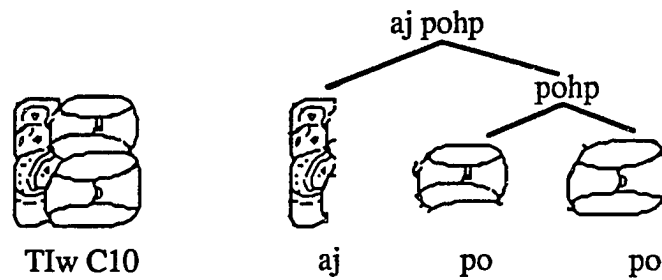


Str. I.: ruler of Palenque [firm]
Reading: pakal [firm]

pohp 'mat' in the title *aj pohp* 'he of the throne'

The symbol for /po/ is found in the iconography on thrones and as part of Landa's version of the month sign Pop. It was identified by Lounsbury (1973) in his paper on the 'aj po' glyph which is prefixed to emblem glyphs.

(5.11)



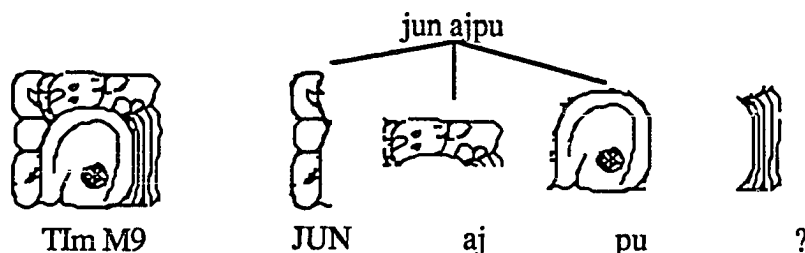
Str. I.: title 'he of the mat' [firm]
Reading: *aj pohp* [firm]

junajpu 'Junajpu', the name of GI of the Palenque Triad

This is a Palenque Mayan phonetic spelling of an important mythological personage best known to us from the Colonial Quiche stories in the Popol Vuh. This name is also the name of the day which corresponds to Ahau in Yucatec and in Western Mayan languages. The birthday of Junajpu is not, however, *jun ajaw* 1 Ahau, but rather 9 Ik '9 wind' (TC E1-F4). 1 Ahau is, rather, the birthdate of GII of the Palenque Triad, also a son of Lady Säk Bak (TFC A1-D2).

The final symbol which resembles the sign for /ni/ is not present in other examples of this name. It may serve merely as a space filler.

(5.12)

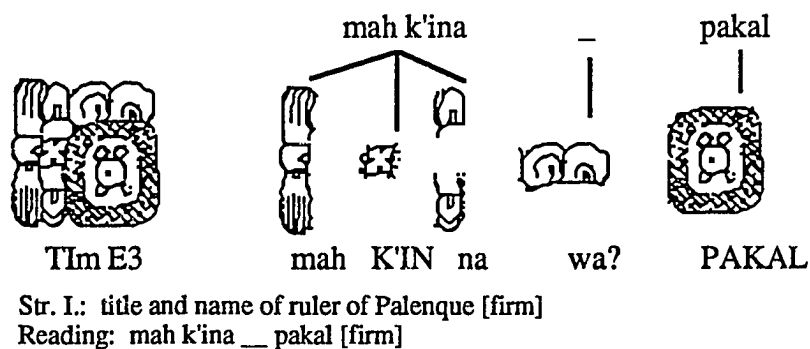


Str. I.: name of GI of the Palenque Triad [firm]
Reading: *jun ajpu* [firm]

The phoneme /p/ is also represented logographically in the shield glyph for the name *pakal*. Names of rulers at Palenque are frequently preceded by an honorific title read as *mah k'ina*. (Lounsbury 1985:47ff).

mah k'ina pakal 'Great Lord Pacal'

(5.13)



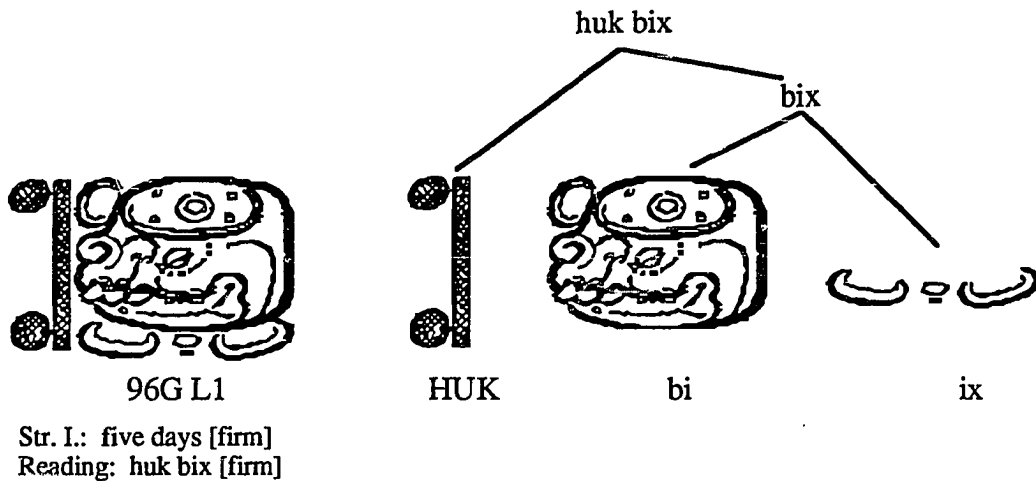
5.2.1.2. /b/

There are phonetic signs for /bi/ and /ba/.

huk bix 'five days'

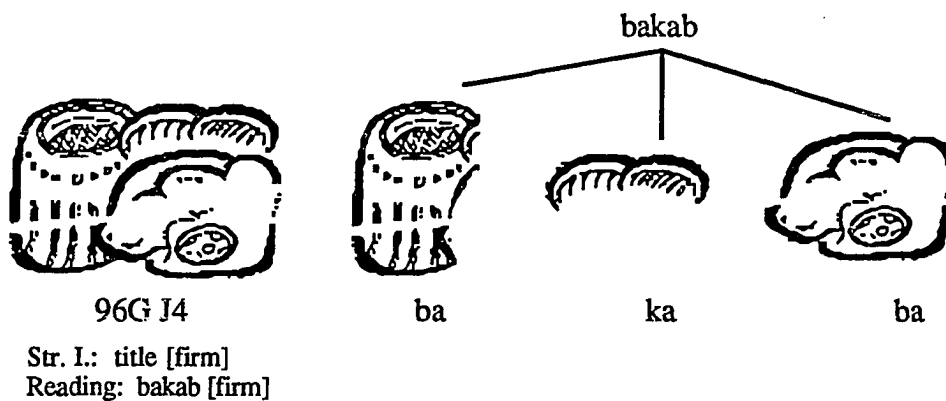
This example contains the skull head variant of the phonetic glyph for /bi/. It is certain that this glyph indicated the passage of five days. It is probably 'five' accompanied with the numeral classifier specific to 'five days' as Thompson suggested (1950:170f). A less satisfactory explanation is that it is a sentence 'Five [days] passed' *huk bixi* containing the intransitive verb *bix* 'to go away' (Kaufman & Norman 1984:117, Knowles 1984:407).

(5.14)



In example (5.15) syllable /ba/ is spelled with two different signs. The first one is the glyph for the day sign Imix and second is the jog glyph which derives the /ba/ reading from *bah* 'gopher'.

(5.15)



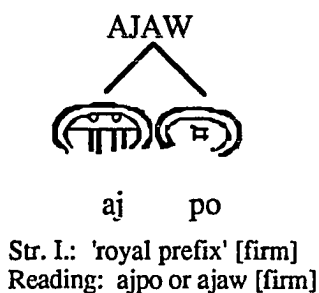
The phoneme /b/ is also represented logographically in a number of signs, most notably in the variations of the Palenque emblem glyph. The equivalency of these three signs is phonetic, based on the homophony of the words *bak* 'heron', *bak* 'skull', and *bak* 'bone'.

ch'ich' aj po bak 'of the royal blood (lineage) of *bak* (heron)'

The bird's head in this example is identical to the one in the name of the ancestral mother at Palenque. Her name, however, is preceded by *säk* 'white' and it probably signifies *säk bak* 'white heron, egret'.

Emblem glyphs usually have two prefixes. The *aj po* prefix above the main sign signifies 'great, royal' (see for example, Barrera Vasquez 1980:962).

(5.16)



In various Mayan language families there is variation between the forms *ajaw*, *ajpo*, and *ajpu* as they are used both in titles (c.f. Lounsbury 1973:129ff) and in the word for the twentieth day name (Thompson 1950:68). *Aj* is presumably the agentive prefix 's/he who. . ., s/he of. . .' In Mayan languages there are three words for moon, *iik' in proto-Quichean (Campbell 1977:58) and proto-Mayan (Kaufman & Norman 1984:135), *uh in proto-Cholan (*uuh in Western Mayan and Yucatec) (Kaufman & Norman 1984:135), and *poh* found in Kekchi, Pocomam and Pocomchi, probably a Mixe Zoquean loan (Campbell 1977:58).

I would like to suggest that the *ajpo* title is from *aj + uuh* and *aj + poh*, and that originally was a title meaning 's/he of the moon'. I would date its origin after the differentiation of the Greater Quichean group (by 650 B.C.), which would explain its occurrence in the Pocom and its absence in Quichen Proper, and prior to the beginning of Cycle 8 (c. 37 A.D.) or at least early enough to explain the prevalence of the *ajpo* prefix throughout the Maya writing system. In Yucatec the

possessed form of *ajaw*, *yajaw* means 'something great in quality and in quantity' (Barrera Vasquez 1980:962). The *ajpo* prefix on emblem glyphs may be interpreted as an adjective meaning 'royal' or 'great'.

The prefix to the left of the main sign of emblem glyphs is one of the members of what Thompson called the 'water group' prefixes (1950:274ff), but which have subsequently been accepted as symbols for blood. Schele (Workshop 1988) has mentioned a new reading for this prefix as the 'God C head' (see Section 5.2.3) which means 'divine', 'idol', 'precious, holy thing': *ch'uh* in proto-Cholan (Kaufman & Norman 1984:119) and *k'ul* in Yucatec (Barrera Vasquez 1980:421). For evidence that the 'God C' head was read *ch'ich'* 'blood' see Section 5.2.3.

The emblem glyphs frequently follow royal names and probably meant 'of the royal blood of __', as in 'Pacal, of the royal blood of Bak (Palenque)'.

(5.17)



TS D13



CH'UL



aj po (ajaw)



BAK

Str. I.: Palenque emblem glyph [firm]
Reading: __ aj po bak [firm]

ch'ich' aj po bak 'of the royal blood (lineage) of *bak* (skull)'

(5.18)



96G F5



CH'UL



aj po (ajaw)



BAK

Str. I.: Palenque emblem glyph [firm]
Reading: __ aj po bak [firm]

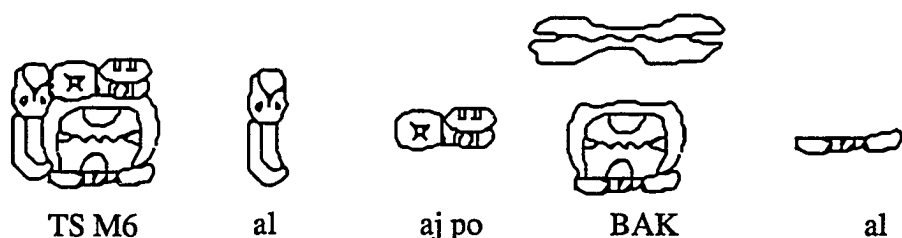
al aj po bakal 'child of the royal lineage of *bak* (bone)'

In example (5.19) the 'blood' prefix is replaced (or prefixed) by the phonetic sign /la/. The word for 'child of woman' in proto-Cholan is *al. The emblem glyph would then read 'child of the royal blood of Palenque'.

The digitized image of the main sign in this emblem glyph has been copied and elongated to illustrate how the image of a long bone has been compressed to accommodate the squarish shape of the glyphic space.

There is also a variation of the /la/ sign subfixed to the bone (it is clearer in other examples). It is probably the nominal suffix -*VI* in the spelling *bakal*. In some cases, such as TFC N17, *bak* is followed by /wa/, the phonetic complement of the *aj po* prefix indicating that a reading of *ajaw* is intended.

(5.19)



Str. I.: Palenque emblem glyph [firm] 'child of the royal line of Palenque' [probable]
Reading: al aj po bak [firm]

No logographic or phonetic signs for /bo/ or /bu/ have been recognized.

5.2.2. Alveolar Stops /t/, /t'/

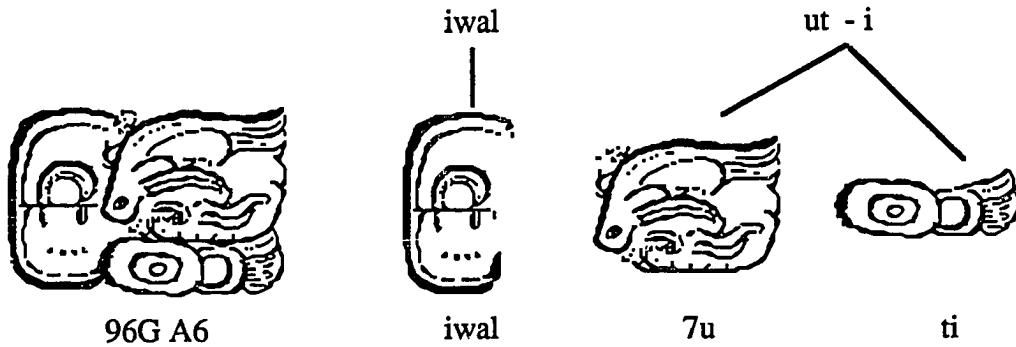
There is a plain alveolar stop /t/ and an ejective /t'.

5.2.2.1. /t/

The consonant /t/ is represented by a syllabic sign for every CV combination.

iwal uti 'it happened'

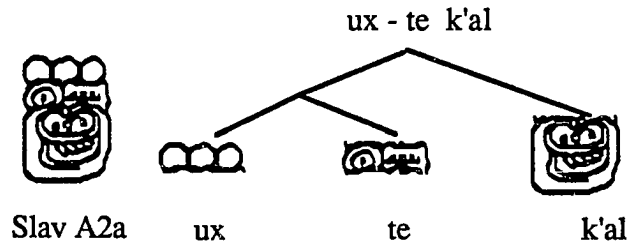
(5.20)



Str. I.: aspect particle/verb [firm]
 Reading: iwal [probable] uti [firm]

te a numeral classifier in the phrase *uxte k'al* 'three 20's; 60'

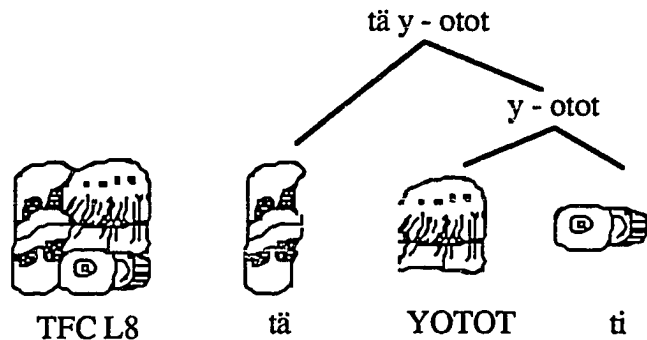
(5.21)



Str. I.: 60 [firm]
 Reading: uxte [firm] k'al [probable]

tä 'in' and *otot* 'house' in the phrase *tä yotot* 'in his house'

(5.22)

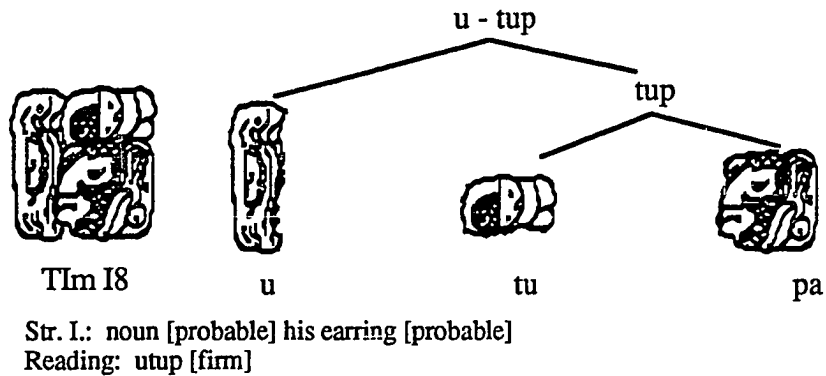


Str. I.: locative phrase, 'in his house' [firm]
 Reading: tä (or ta) [firm] yotot [firm]

tup 'earring' in *u tup* 'his earring'

See discussion in Sections 5.2.1 and 6.3.

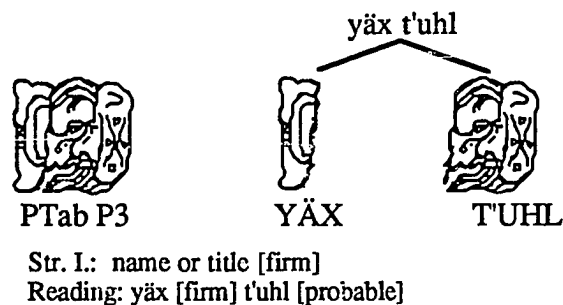
(5.23)



5.2.2.2. /t'/

There are no known syllabic signs for the ejective /t'/, but it is represented logographically by the glyph for 'rabbit' *t'uhl in the name or title of Kan Xul, *yäx t'uhl* literally 'green or first rabbit'.

(5.24)



5.2.3. Affricates /tz/, /tz'/, /ch/, /ch'/'

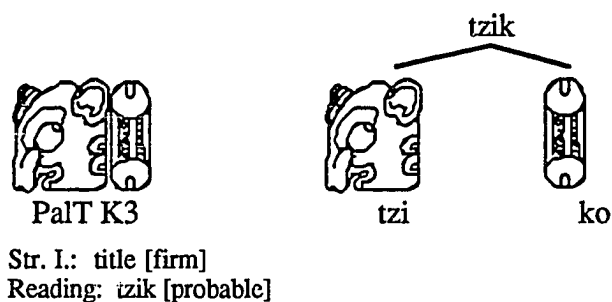
There are two sets of affricates in Palenque Mayan, a voiceless alveolar affricate /tz/ and a corresponding ejective /tz'/; and a voiceless alveo-palatal affricate /ch/ and a corresponding ejective /ch'/.

5.2.3.1. /tz/

tzik a title

See discussion Section 3.6.1.

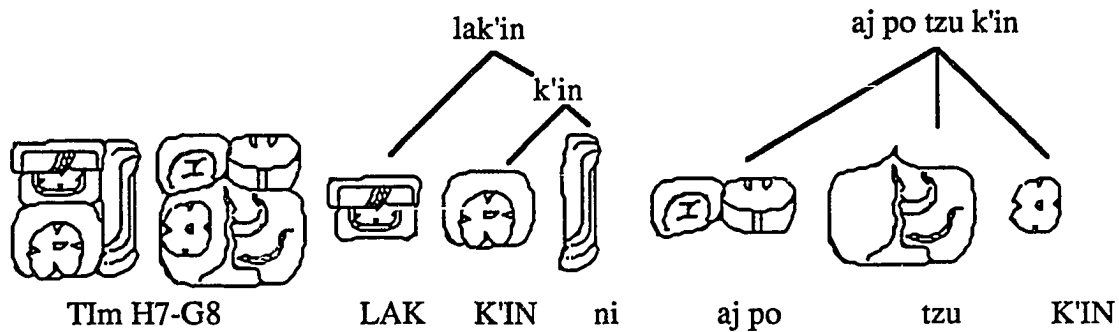
(5.25)

*lak'in aj po tzol k'in* 'the eastern royal solar alignment' (?)

It has been established that T559 is read /tzu/ in the Codices in spelling of 'dog' *tzul*, and 'turkey' *kutz*. Fox and Justeson (1980:212f) suggest that T559 is read /on/ or /un/ in the phonetic spelling of the Cholan name of the month Kankin, /uniw/. They suggest that the /tzu/ reading originated from the Yucatec and proto-Cholan word for 'gourd' *tzu. In the two examples below T559 does have a broad shape which is pointed at the top resembling a bottlegourd. I originally intended to omit these examples of a possible phonetic reading for /tz/ since /tzu/ did not seem to make any sense in this context, and since the reading had only been posited for the Codices. I did however find the proto-Cholan verb *tzol 'to line up'. The examples below occur in the context of an easternmost and westernmost astronomical alignment of Venus described as part of the count of the katuns in the middle panel of the Temple of the Inscriptions. The infixation of the k'in glyph suggests a reading found in Classical Yucatec *tzol k'in*, the calendar of 260 days, the 'count of the days'. If T559 can be read as /tzol/ then the examples below

contain the Classic Maya version of a word previously—to my knowledge—known only from Yucatec, here probably used as 'solar alignment' rather than 'count of days'. For discussion of acrophic representation of CVC roots see Section 3.6.2.

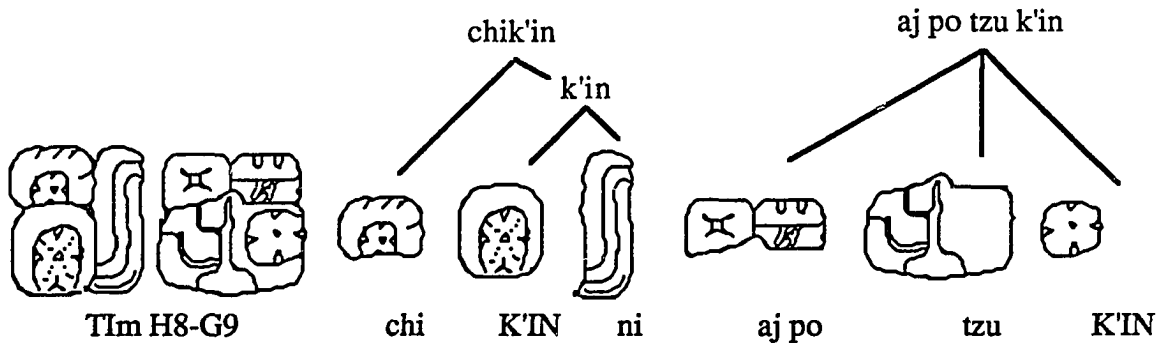
(5.26)



Str. I.: phrase relating to an astronomical event [firm] east [firm] eastern solar alignment [speculative]
 Reading: lak'in [firm] aj po [firm] tzol [speculative] k'in [firm]

chik'in aj po tzu k'in 'the western royal solar alignment' (?)

(5.27)

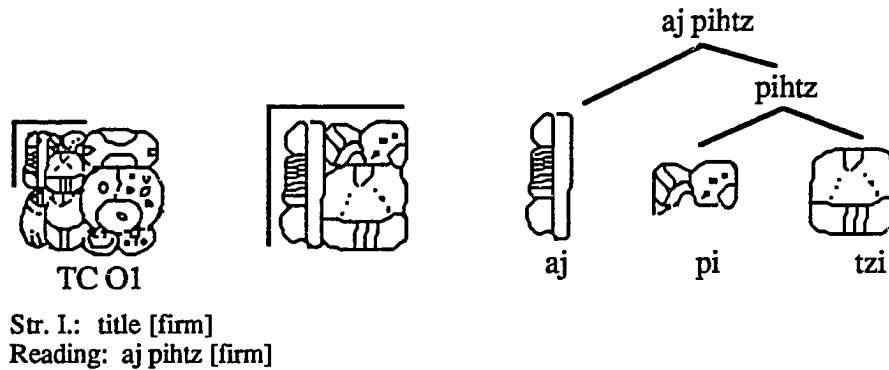


Str. I.: phrase relating to an astronomical event [firm] west [firm] western solar alignment [speculative]
 Reading: chik'in [firm] aj po [firm] tzol [speculative] k'in [firm]

pihtz in the title *aj pihtz* 'ballplayer'

See Section 5.2.1. for discussion.

(5.28)

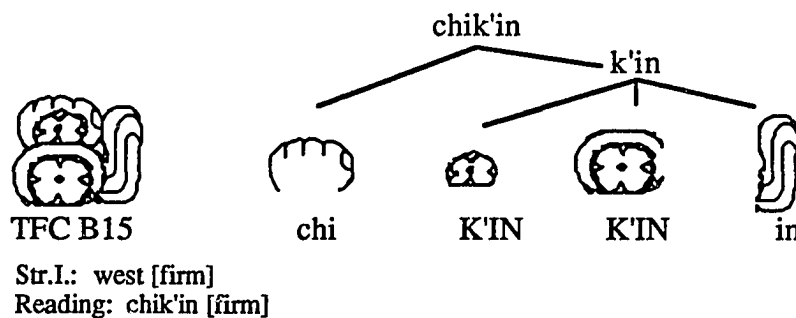


5.2.3.2. /ch/

The following examples have /ch/ represented by the syllabic signs /chi/, /och/, and /chu/ and by the logograph *chajuk* 'lightning' in the name of the ruler Chaacal.

chik'in 'west'

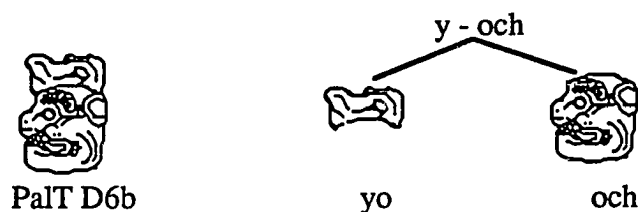
(5.29)



yoch 'he enters, takes office', 'his entering, his taking office'

A second possible reading is *yok* 'his foot/feet', but if that were the case, we would expect a -VI, probably -il suffix *yokil* indicating a part-relation possessed form (see Section 9.1.2).

(5.30)



PalT D6b

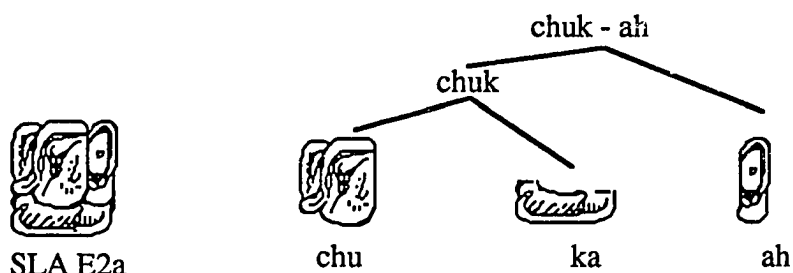
yo

och

Str. I.: part of Kan Xul's name phrase [firm] he enters, takes office [probable]
 Reading: yoch [firm]

chukaj 'he was captured'

(5.31)



SLA E2a

chu

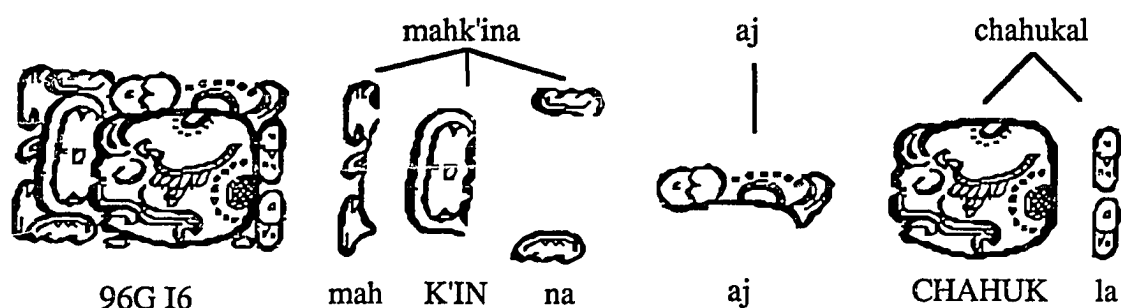
ka

ah

Str. I.: verb in captive expressions [firm] 'he was captured' [firm]
 Reading: chukah [firm]

mahk'ina aj chahukal 'Great Sun Lord, He of the Lightning' the name Chaacal (three Palenque rulers by that name).

(5.32)



96G I6

mah

K'IN

na

aj

CHAHUK

la

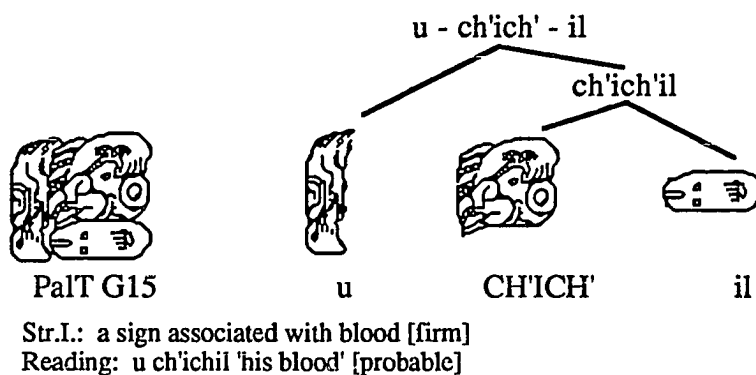
Str. I.: name of ruler Chaacal [firm] with mah k'ina title [firm]
 Reading: mah k'ina aj chahukal [firm]

5.2.3.3. /ch'/

No syllabic signs for /ch'/ have been identified, but it probably was represented logographically in the word for blood, *ch'ich'* and may have been represented logographically by the glyph for temple *ch'ul na*.

uch'ich'il his blood

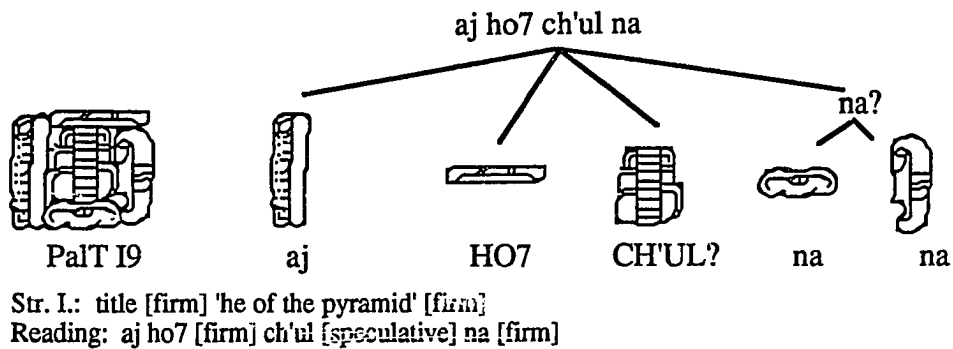
(5.33)



aj ho7 ch'ul na 'he of the five [doorway] temple'

This is a title of the ruler Pacal, who was buried inside the Temple of the Inscriptions. The bar across the top for 'five' probably refers to the five doorways which are a prominent feature of the temple. *ch'ul na* is the word for 'church', 'temple', literally 'god house'. *na* is indicated by two syllabic signs for /na/. The identification of the pyramid glyph as *ch'ul* is speculation. It is unusual that there are two /na/ signs, and one may be a phonetic complement for some word other than *ch'ul* which ends with /n/. Evidence in support of *ch'ul* comes from two other examples of the pyramid glyph (TC I1 and TS I2) which appear to be suffixed by the syllabic sign /il/.

(5.34)



5.2.4 Velar Stops /k/ and /k'/'

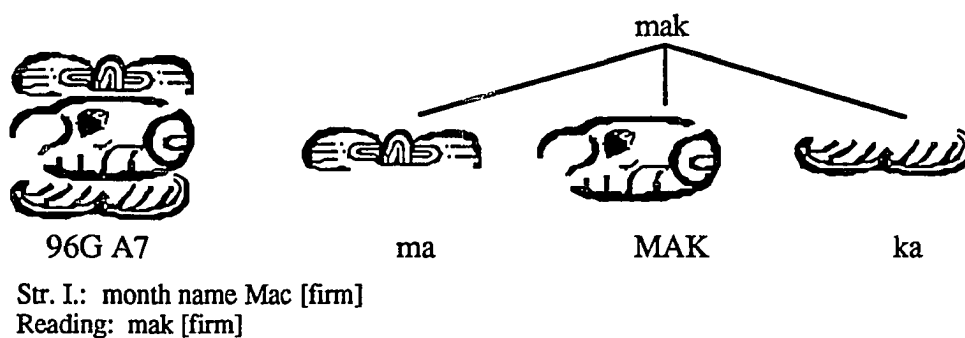
There are two velar stops in Palenque Mayan, a plain stop /k/ and an ejective /k'/'.

5.2.4.1. /k/'

mak 'Mak'

A word for 'turtle' or 'turtle shell' in Yucatec is *mak*. This logograph for 'turtle shell' is preceded and followed by syllabic signs which spell out the name of this month sign.

(5.35)

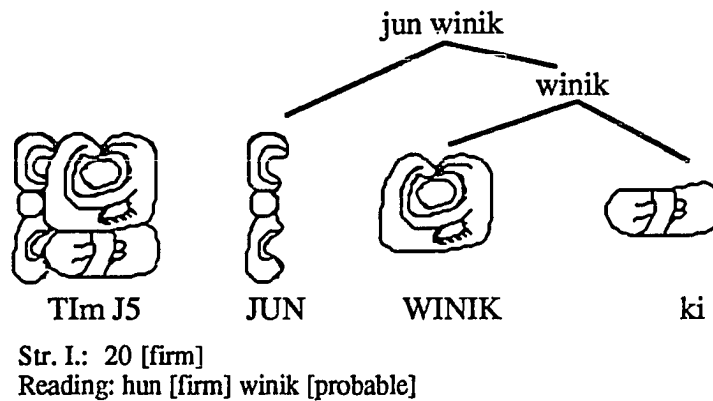


winik in the phrase *jun winik* 'one twenty'

In this glyph, the phonetic complement /ki/ indicates that the sign for the number 20 is read as *winik* a word meaning both 'man' and '20' in a number of Mayan languages. Another possibility is that, whether the 20 sign is read *winik* or

k'al the /ki/ sign could be a numeral classifier. There is a classifier *ki7* listed in B. Berlin (1968:200) that is used for 'objects in semi-spread position, indication of being taken up from extended state.'

(5.36)



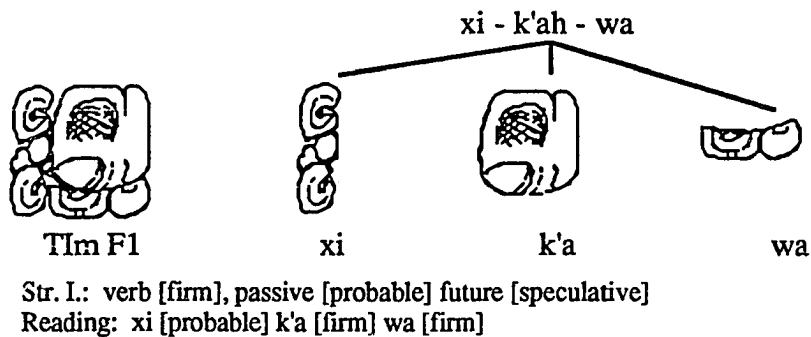
5.2.4.2. /k'/

The ejective /k'/ is one represented by syllabic signs for /k'a/ and /k'u/, and by several logographs.

xik'ahwa 'it will be commemorated'

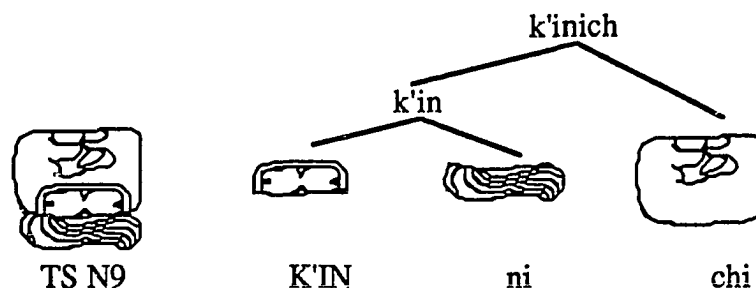
This verb occurs repeatedly in the count of the katuns in the text from the Temple of the Inscriptions. It is discussed in more detail in Section 6.3.

(5.37)



k'inich a royal title, literally 'sunface'

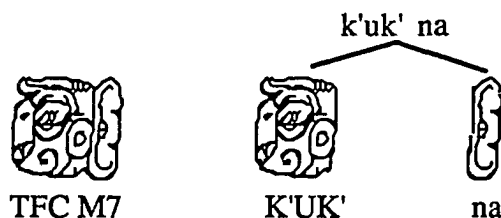
(5.38)



Str. I.: title [firm]
Reading: k'inich [firm]

k'uk' na 'Kuk's house'

(5.39)



Str. I.: house of Lord Quetzal [firm]
Reading: k'uk' na [firm]

5.2.5. Glottal Stop /ʔ/

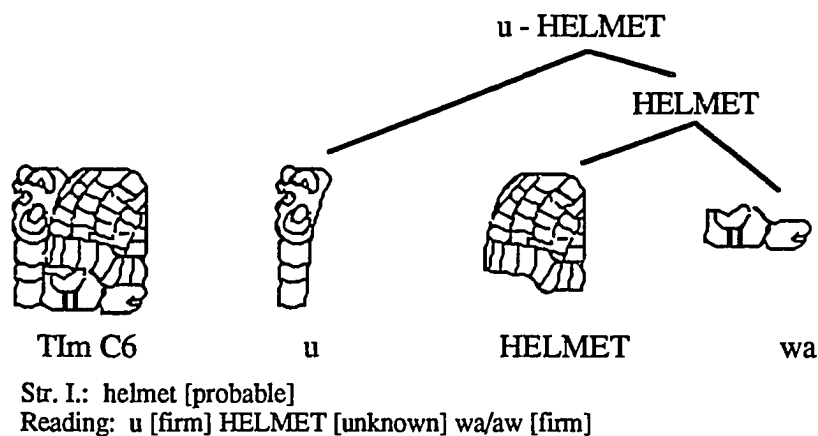
Two examples of words containing 7V are given below.

u - HELMET 'his helmet'

Both Bricker (1986:129) and Schele (1986n:106) interpret this glyph as a verb, 'to cover' and 'to rule' respectively. They are also in agreement that the main sign represents a helmet, such as the ones found on the Palace Tablet and the Tablet of the Slaves. Bricker suggests that the /wa/ suffix is the transitive imperfective suffix *-aw*. I have not found a transitive imperfective suffix *-aw* in Cholan

languages. There is, however, an unproductive derivational suffix *-äw* in Chontal (Knowles 1984:386) which derives nouns. I suggest that the glyph reads 'his/their helmet(s)' and that */wa/* is a nominal derivational suffix or a phonetic complement for a word for 'helmet'. I prefer a nominal reading because *xik'aw* is the main verb of all six clauses in the middle panel of the Temple of the Inscriptions in which it occurs, and because it appears to be part of a list of ceremonial accouterments which includes a phonetic spelling of 'earring'. For more arguments supporting this interpretation see Section 6.3.

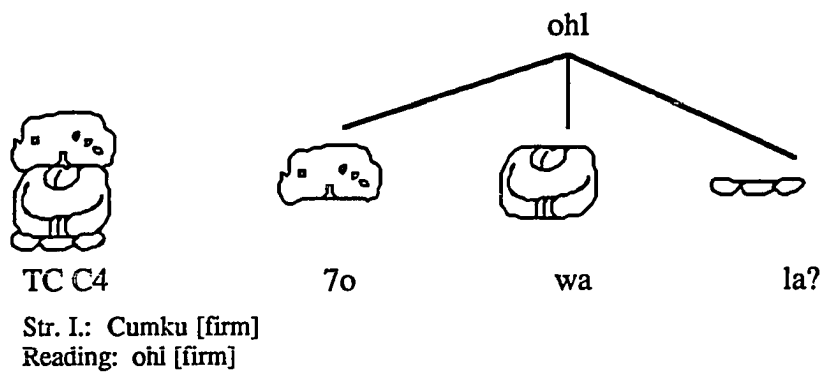
(5.40)



ohl 'Cumku' the eighteenth month of the 365 day calendar.

The first symbol in this sign has been identified by Lounsbury (1983) as the syllable */ʈo/* (1983). Love (In press) showed that the second symbol (the day sign Kan) has the phonetic reading */wa/*. When these interpretations are applied here, the phonetic reading of this month sign is the same as the Chol name for the eighteenth month (Thompson 1950:106). Note that although the name was not recorded with *<w>*, the phonetic sign */wa/* serves to extend the feature of rounding, which occurs with the post-vocalic */h/* following */o/*.

(5.41)



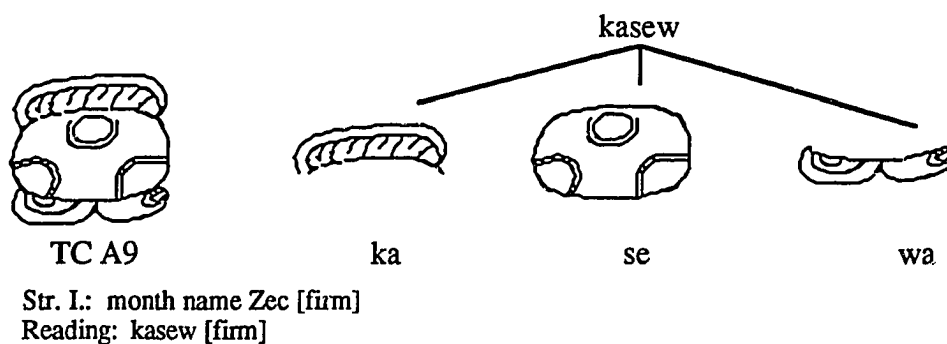
5.2.6. Fricatives /s/, /x/, /j/

There are three fricatives, an alveolar fricative /s/, a palatal fricative /x/, and a glottal fricative /j/. The velar fricative *j and the glottal fricative *h have merged in modern Cholan languages, but it is not apparent whether or not they had merged in Palenque Mayan. Kaufman and Norman (1984) have differentiated these phonemes in their reconstruction of proto-Cholan, and I am using their reconstructions whenever they are available.

5.2.6.1. /s/

The alveolar fricative is represented by at least one syllabic sign /se/ used in the month name *kasew* which corresponds to the Yucatec month name *Zec*.

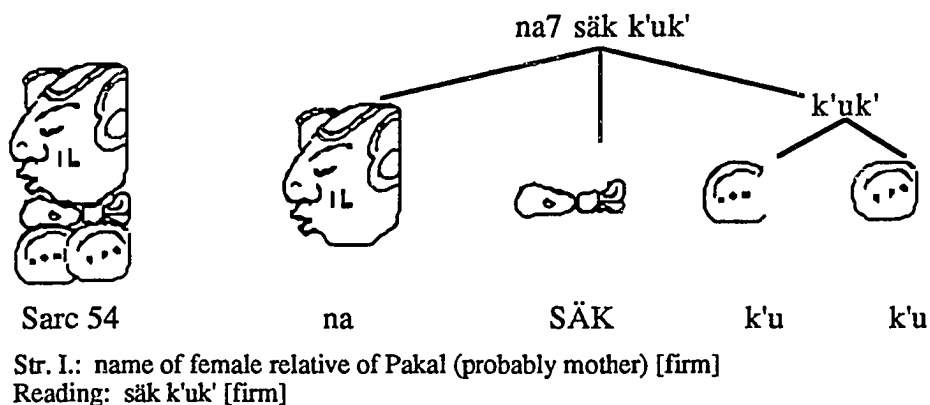
(5.42)



The alveolar fricative is also represented in logographic signs such as the symbol for *säk* 'white, bright' in the name *säk bak* 'white heron, egret' the name of the mother of the Palenque Triad, and in this example of the name of Pacal's mother *na7 säk k'uk'* 'Lady White Quetzal':

na7 säk k'uk'

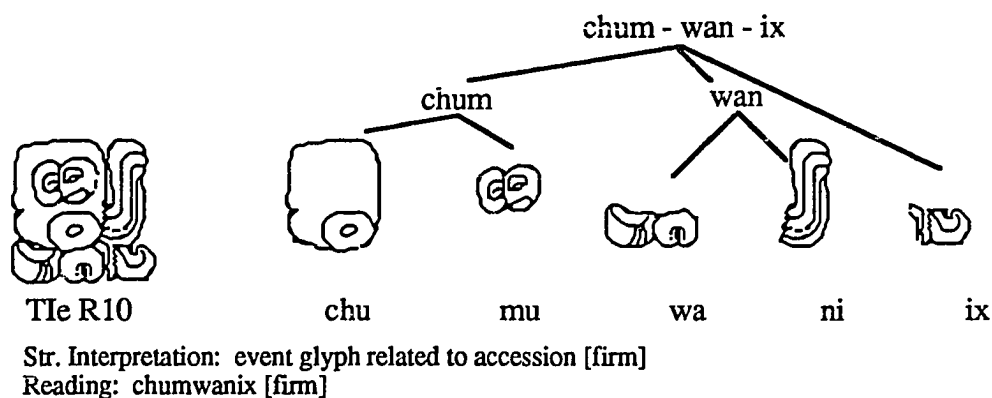
(5.43)



5.2.6.2. /x/

ix an aspectual particle indicating the completive aspect in the verb *chumwanix* 'he was seated'.

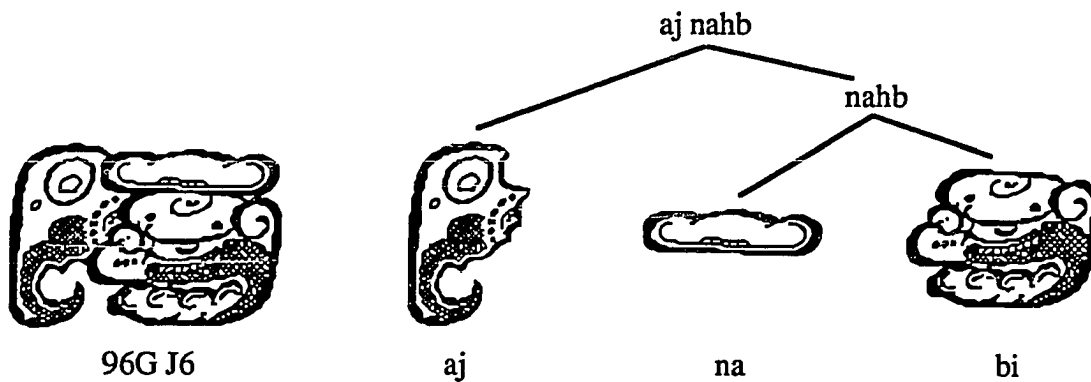
(5.44)



5.2.6.3. /j/

The phoneme /j/ is found in the agentive particle *ah-* used in names and titles such as *aj nahb* 'he of the seas/waterlily'.

(5.45)



Str. I.: title of rulers, part of name of Chaacal [firm] 'he of the waterlily', or 'he of the sea' [firm]
Reading: aj nahb [firm]

5.2.7. Nasals /m/, /n/

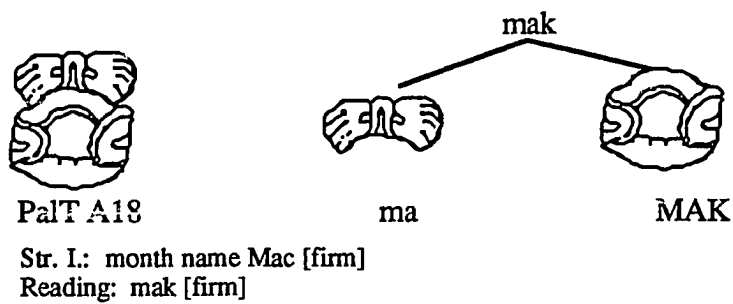
There are two nasals in Palenque Mayan, /m/ and /n/. Both are represented in logographs and in phonetic spellings.

5.2.7.1. /m/

mak 'Mak'

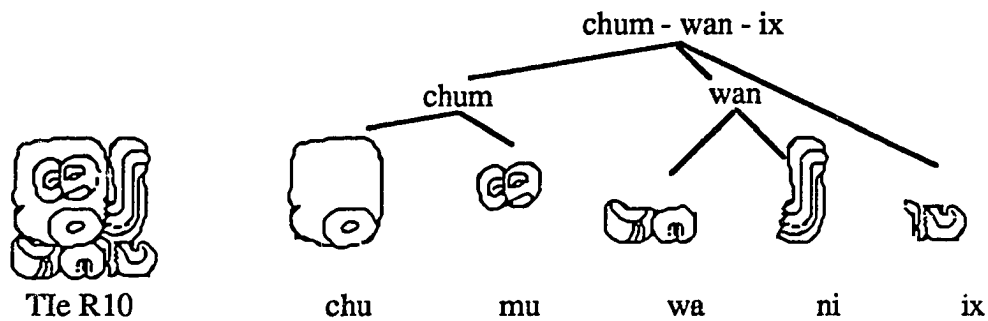
This example of the thirteenth month contains a logograph *mak* prefixed by a phonetic complement, the syllabic sign /ma/. This spelling alternates with the spelling of Mak given above (example (5.34)), in which the central logograph is preceded and followed by a syllabic sign.

(5.46)



chum a positional root meaning 'seated' in the verb *chumwanix* 'he was seated'

(5.47)



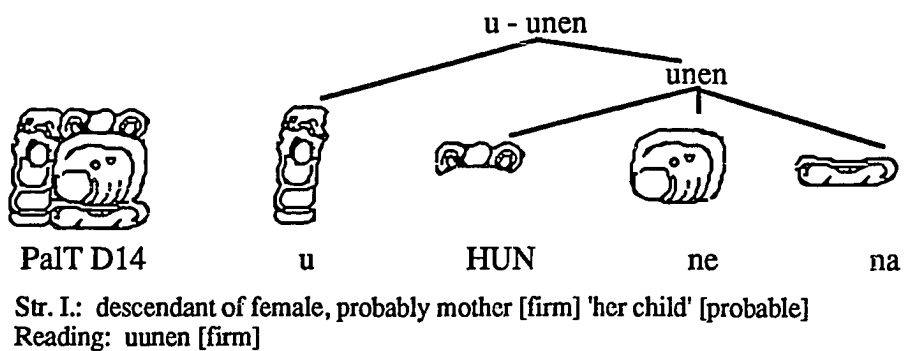
Str. Interpretation: event glyph related to accession [firm]
Reading: chumwanix [firm]

5.2.7.2. /n/

In the following example /n/ is represented logographically by the numeral 'one' and phonetically by the syllabic signs /ne/ and /na/.

uunen 'her child(ren)'

(5.48)



5.2.8. Lateral /l/

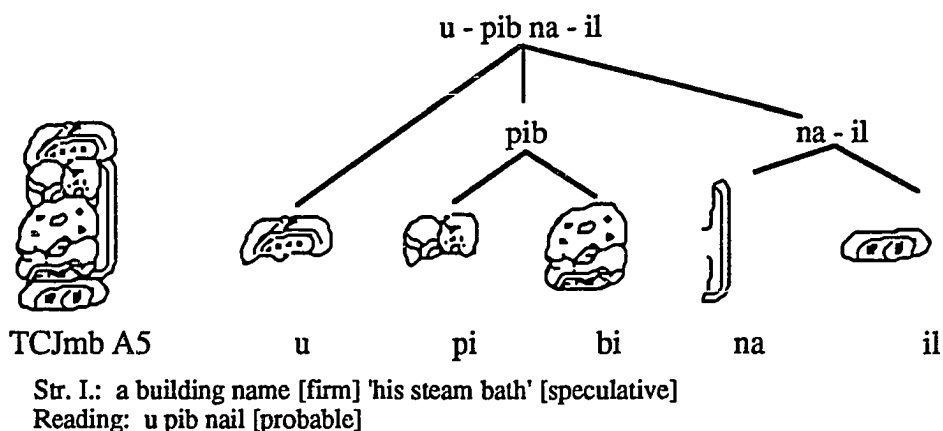
There is one lateral in Palenque Mayan. The syllables /li/, /le/, and /la/ are recognized at Palenque in phonetic spellings as in the following examples:

upib nail 'his sanctuary', 'his sweathouse', 'his hearth'

This glyph is part of a passage describing an event that occurred on 5 Eb 5 Kayab. It is recorded on an alfarda from the Temple of the Cross and an alfarda from the Temple of the Foliated Cross in addition to this example from the Temple of the Cross door jamb (Schele 1987n:140). In each case it follows a 'house event verb' and what appears to be a proper name of a building. It is a possessed phrase, and because of the context the second word can be fairly certainly identified as *na* the word for 'house, building' also used in the name of the Temple of the Inscriptions *ch'ul na*. Here it is followed by the suffix *-il*. In Chontal this suffix limits the referent of the noun to one specific possessed example (Knowles 1984:197). In all three examples the glyph is part of a couplet, the other member of which is *u ch'ich'il* 'his blood'.

In Yucatec *pib* is glossed as 'horno subterráneo, barbacoa, baño a base de agua caliente y vapor de agua. . .' (Barrera Vasquez 1980:651), or in English, 'underground oven; roasting pit; steam bath'. I have not been able to find the word in any non-Yucatecan sources.

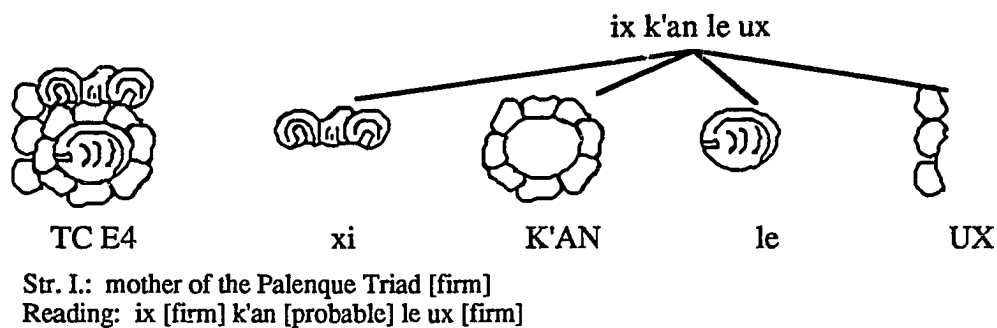
(5.49)



ix k'an le ux 'Lady of the Sacred Lineage of the Triad'

This glyph is part of the name phrase of Lady Säk Bak, the ancestral mother of the Palenque Triad. Schele (1980n:65) quotes Peter Mathews (personal communication) as having recognized the similarity of elements of this glyph to the name XKan Le Ox (this is the Yucatecan form of the name, *ux* is the Cholan word for 'three'), named in various ethnohistorical sources as the wife of the creator, the mother of the gods. *ix* 'lady', *k'an* 'precious' here represented by corn shoots or possibly corn grains, *le* 'lineage', and *ux* 'triad (three)'. Schele suggests the reading order here is *ux k'an le*, but the placement of the three circles may simply reflect the convention of placing numbers to the left of the glyph block, and not have been intended to be read first. Other related names for this ancestral mother have been discussed in Macri (1985a:58-62).

(5.50)



5.2.9 Semivowels /y/, /w/

There are two semi-vowels in Palenque Mayan, /y/ and /w/.

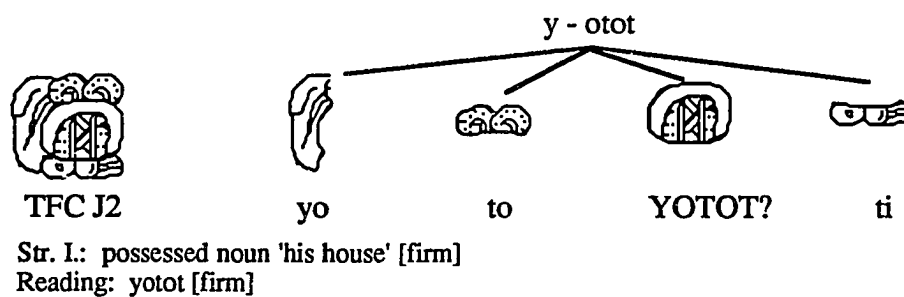
5.2.9.1. /y/

/y/ is recognized in at least one phonetic sign, /yo/.

yotot 'his house'

See discussion Section 5.1.4.

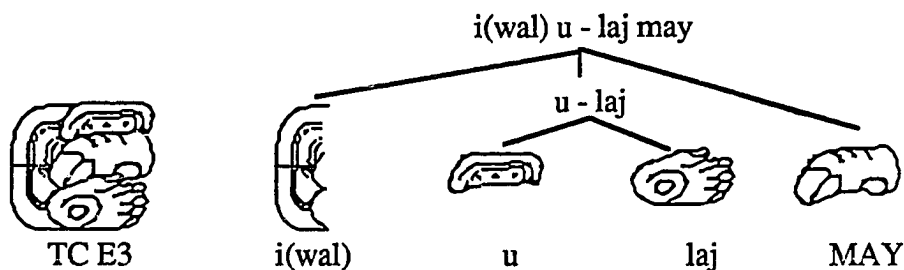
(5.51)



/y/ is represented logographically in a number of signs, including *may* 'deer hoof', a homophone of *may* 'a count of 13'.

i(wal) ulaj may 'until he ended the *may*'

(5.52)

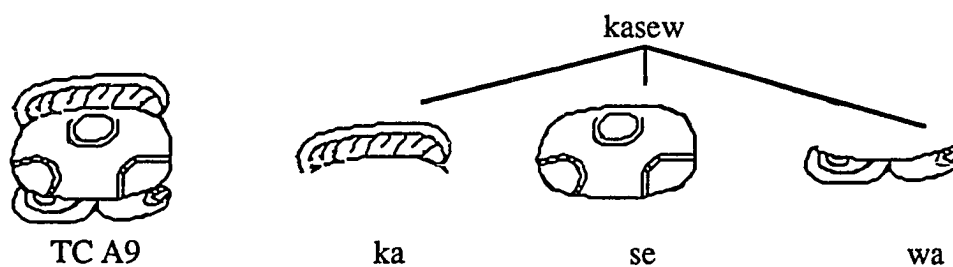


Str. I.: 'until he ended the *may*' [firm]
 Reading: iwal [probable] ulaj may [firm]

5.2.9.2. /w/

The phonetic syllable /wa/ is the last sign in the phonetic spelling of the month *kasew*, in Yucatec, 'Zec', the name of the fifth month in the 365 day calendar.

(5.53)



Str. I.: month name Zec [firm]
 Reading: kasew [firm]

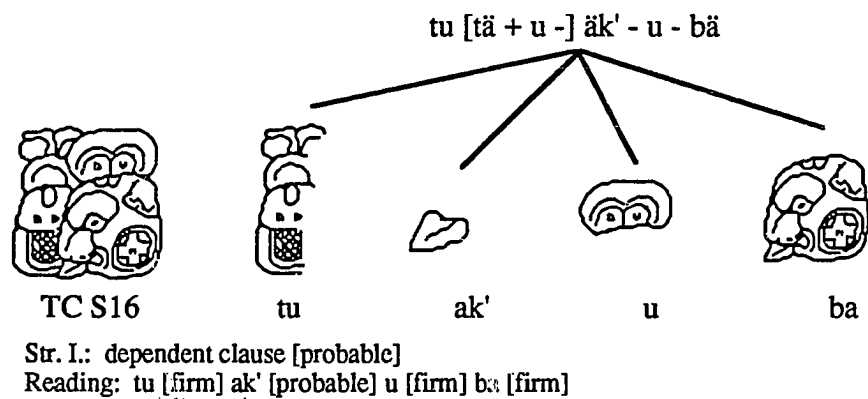
5.3. Contraction

Thompson was the first to recognize that what we now interpret as the phonetic sign /tu/ was sometimes used to represent the contraction of *ti* + *u* (1950:54). This is the Yucatec combination of the preposition *ti* and the ergative third person marker *u*. Since the preposition at Palenque was probably pronounced /ta/ (see Chapter 13), the contraction in the example below is *ta* + *u*.

tu äk'ubä 'he offers himself'

The interpretation of /tu/, the first sign in the example below, is agreed upon by virtually all epigraphers. For an explanation of the rest of the interpretation please see Chapter 14. The second sign is the tongue of the gopher, which is shown enlarged in this example.

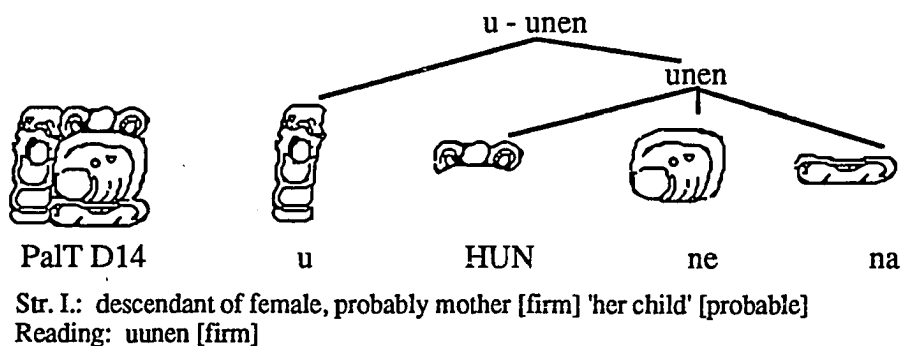
(5.54)



A second example of contraction is found in the loss of the initial glottal stop on the word *unen* 'child' when it follows the third person possessive marker indicated here by the presence of the /h/ in the word *hun* 'one': $u + \text{?}unen > uunen$, [ʔu/ + /hun/ + /nen/].

uunen 'her child(ren)'

(5.55)



Part III. Morphology.

Chapter 6. Introduction to Morphology

6.1. Methods of Investigation

The first word classes to be identified in the Maya writing system were nouns: numbers, names of calendrical periods, representations of objects, animals, and mythological personages. Scholars in the nineteenth and early twentieth centuries generally had better access to the codices than to the inscriptions on monuments. One of the advantages of studying the writing in the codices is that the series of pictures which accompany nearly all the glyphic texts are very useful in the identification of nouns. Although many glyphs are representational, whether an animal head is that of a dog or a deer or a jaguar is not always immediately apparent. However, when a particular head glyph occurs consistently with a full figure of a dog, an identification can be made. This method is useful not only for animals and objects, but also for identifying the costumed human figures commonly referred to as gods. Schellhas (1904) identified 16 deities and 6 different animals in this way.

The most common pattern in the codices is a set of four glyph blocks accompanying a small figure. Schele (1982:14-20) explains that once the subject of a verb (usually one of Schellhas' deities (Schellhas 1904) and the object of a verb (often a food offering, sometimes another deity) are identified in each of the sets of four glyphs, there remain only two positions in which a verb may occur, assuming that there is one. Since the basic word order of Mayan languages is verb-initial (VOS for Greater Tzeltalan and Yucatecan) it is reasonable to look for the verb in initial position. Schele shows that usually pictures showing similar activities are accompanied by the same initial glyph.

Proskouriakoff (1960), who was not a linguist, was the first person to identify a number of glyphs in the Classic inscriptions as event glyphs, that is, verbs marking birth, accession to office, and death. The position of these verbs within the texts—immediately following calendrical information and preceding personal names—suggested that other glyphs occupying this slot were also verbs.

Therefore, one clue to the word class of a glyph is its co-occurrence with identifiable figures, and a second is its position in the sentence. Now that more of the hieroglyphs can actually be read, morphological and semantic criteria can be applied to confirm previous identifications, and to find new ones. With the growing number of phonetic readings epigraphers find that not only does the word order of the texts match the word order of Greater Tzeltalan and Yucatecan, but that derivational and inflectional endings match as well.

6.2. Previous Problems in Morphological Description

Because of the high percentage of cognates and the relatively minor phonological variations within the Greater Tzeltalan and Yucatecan language families, applying a pan-Lowland Mayan vocabulary to epigraphic studies has been possible, if sometimes misleading. But trying to apply the principles of linguistic description to the morphology represented has resulted in sometimes puzzling inconsistencies. There are several reasons for this. First of all, epigraphers, and even linguists who have studied the script, have tended either to analyze all the hieroglyphic materials as a whole or to divide them into two groups, Classic Period inscriptions and the Postclassic Codices. What has been lacking up to this point is a description of the morphological processes in texts recording a single language/dialect.

Another problem had been the nearly exclusive use of Yucatec in interpreting the script. This is understandable in light of the fact that archaeologists and ethnohistorians have had much more contact with Yucatec than with Cholan languages both through

personal contact with speakers, and through published sources: grammars, dictionaries, and the native records of Yucatec culture composed by Mayan speakers using the Roman alphabet, such as the books of Chilam Balam. It has only been comparatively recently that linguistic sources on Cholan languages have become available.

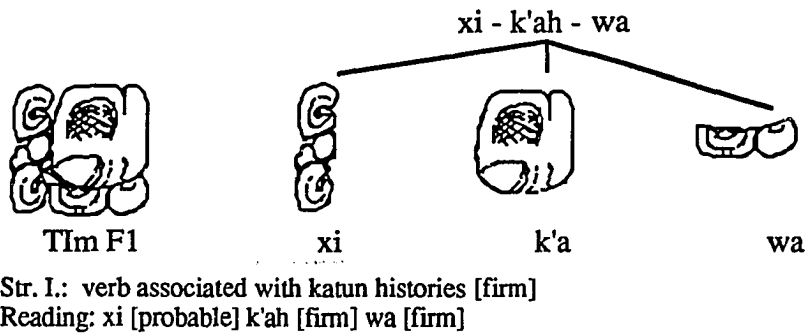
Even though Palenque Mayan is clearly a Cholan language (see Chapter 2), it is unrealistic to expect that the grammar of any modern language is going to match a language recorded 1300 years ago. Nor is it realistic to expect that it will exactly match the hypothetical reconstruction of proto-Cholan.

Whenever possible, morphological analysis should rely solely on the texts themselves. Due, however, to limitations imposed by incomplete decipherment of a relatively small corpus, data from modern Cholan languages is sometimes necessary to support internal analysis. Just as indiscriminate dictionary hopping is to be discouraged (Section 2.9), indiscriminate grammar hopping is likewise fraught with dangers. Happily, there are many cognate inflectional and derivational affixes in Greater Tzeltalan languages. Unhappily, there are also many which are not. One of the tasks of the epigrapher linguist is to determine when to incorporate evidence which is only found in a few (or one) modern languages. Unwise exclusion of information can be just as damaging to the process of discovery as unwise inclusion.

6.3. The /k'a/ Verb

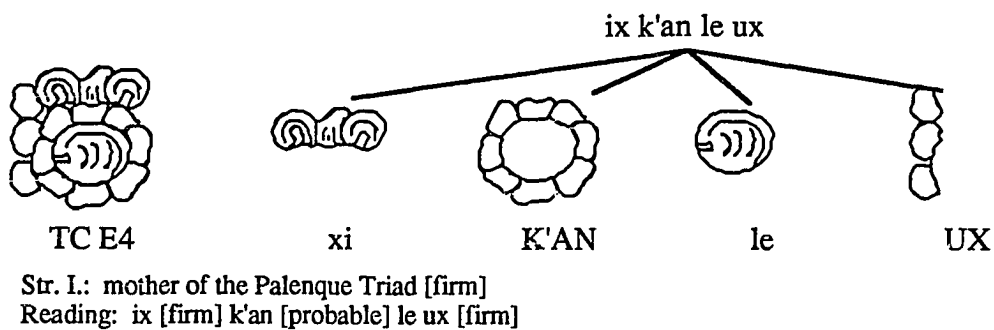
One illustration of this process is the interpretation of the /k'a/ verb (T669) which occurs repeatedly in the count of the katuns from the Temple of the Inscriptions tablets. It is composed of three signs /xi/, /k'a/, and /wa/ (T126.669:130).

(6.1)



The first sign (T126) signifies /ix/ or /x/ as a feminine title on names of women, as in the name of the ancestral mother discussed in Section 5.2.8:

(6.2)



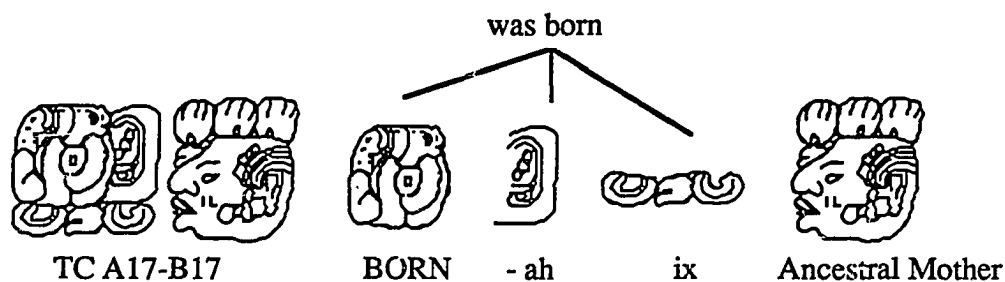
ix k'an le ux

FEM precious lineage three

'Lady/Mother of the Precious Triad Lineage

T126 also serves as the aspect particle /ix/, which contrasts with the completive aspect suffix /-i/ (written with a variety of signs). In the sentence "On _ (date) the Ancestral Mother was (had been) born" the 'birth' verb is followed by the particle /ix/.

(6.3)



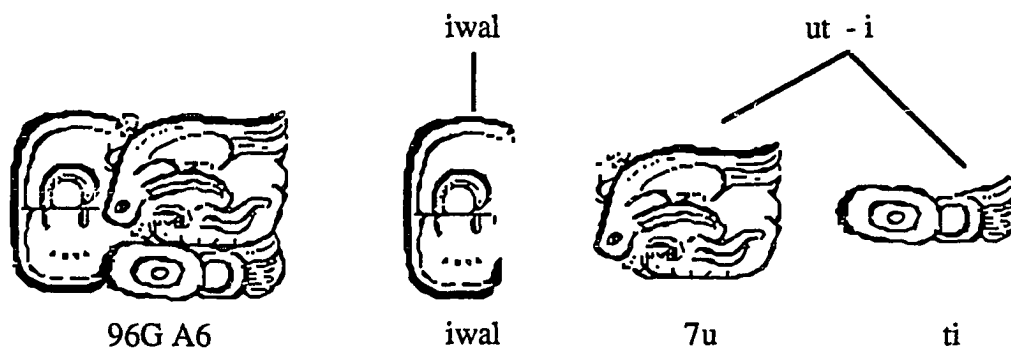
Str. I.: 'the ancestral mother was born' [firm]

Reading: no Mayan reading proposed

BORN-ah ix ux na
 born-PASS FEM three mother
 'Lady Triad Mother was born.'

In the word "it happened" the verb *ut* is suffixed by the completive aspect marker *-i*.

(6.4)



Str. I.: aspect particle/verb [firm]

Reading: iwal [probable] uti [firm]

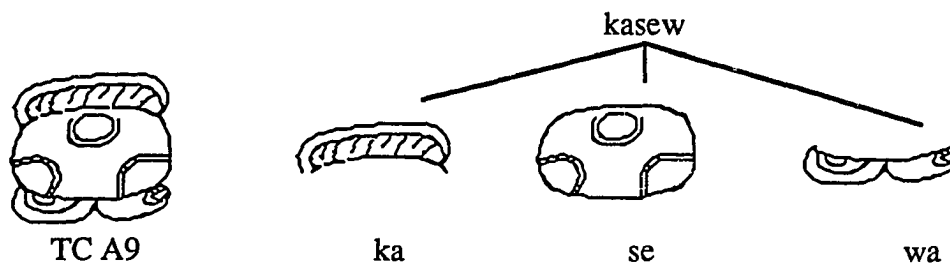
iwal ut-i
 CONJ happen-CMP
 'and then (until) it happened'

The fact that T126 can be suffixed to words of any word class strongly supports its identification as the clitic /ix/. Presumably in phonetic spellings this sign, like the other

syllabic signs, can be read CV or VC, /ix/ or /xi/.

The last sign is T130, which is read /wa/ (or /wV/) in a number of contexts. In the example below it is used for the final consonant in the phonetic spelling of the Chol word for the month *Zec*, *kasew*.

(6.5)



Str. I.: month name *Zec* [firm]

Reading: *kasew* [firm]

MacLeod (1983) gives convincing arguments that T669 represents the root *k'ah*, a transitive verb meaning 'to remember', and that T130 /wa/ is a passivizing suffix. The only survival of this suffix in modern Cholan languages is *-wa*, an unproductive suffix which passivizes nominals in Chorti. Additional support for *-wa* as a passivizer comes from the presence of a passivizer *-w* in Chuj (Kaufman 1987, class notes). Kaufman and Norman (1984) list *-a* as a passivizer in proto-Eastern Cholan.

My analysis differs from MacLeod's only in her interpretation of the first element which she tentatively reads as *a-*, the third person marker used in modern Chorti with intransitive incomplete verbs. I think that a reading of /ix/ for T126 at Palenque is fairly secure: first, because it is a prefix on female names, *ix-*; second, as a glyptic suffix it patterns as the aspect particle *-ix*, being attached to verbs, nouns, and calendrical names; and third, it occurs in the phonetic spelling of the numeral classifier *bix*. There is a future marker in Cholti which is *x-* (Fought 1984:52, Kaufman & Norman 1984:104).¹ The verb would then be read as a future:

x-u-k'ah-aw
 FUT-3ERG-remember-PASS
 'It/they will be remembered.'

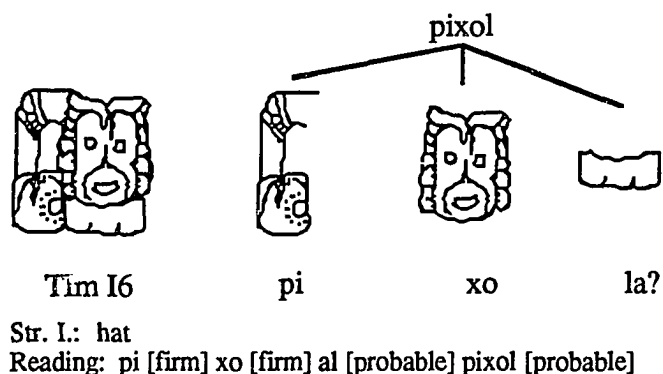
A future tense, passive voice reading of the /k'a/ verbs does fit well in the context of the count of the katuns in the tablets from the Temple of the Inscriptions, where at least six of the seven /k'a/ sentences in the Middle Panel have one or more members of the Palenque Triad as possessors of the objects being commemorated. This suggests a ceremonial activity rather than a historical event.

The /k'a/ sentences in the Middle Panel occur in two sets. The first set is three sentences which begins with the /k'a/ verb followed by the helmet phrase, followed by 20, followed by a sign meaning 'cycle' (here probably signifying a katun—20 years), and ending with the name of one or more names of the Palenque Triad. In the second set of sentences in this panel, the first, third, and fourth begin with the /k'a/ verb followed by 'cycle', followed by 20, followed by 'decorated ajaw', followed by 'his white ', followed by two unknown words followed by the helmet phrase, followed by the names of the Triad. The second sentence is very short. Here the /k'a/ verb is followed by katun and Pacal.

In the first three sentences the helmet is prefixed by one of three glyphs which are repeated with it in three of the second set of sentences. These may be associated with the names of GI, GII, and GIII with which they correspond in each set. I have previously suggested that *utup* is 'earring' (Section 5.2.1.) and that the helmet glyph actually represents a helmet (Section 5.2.5.), or perhaps three different kinds of helmets, distinguished by one of the three varying glyphs that precede the helmet.

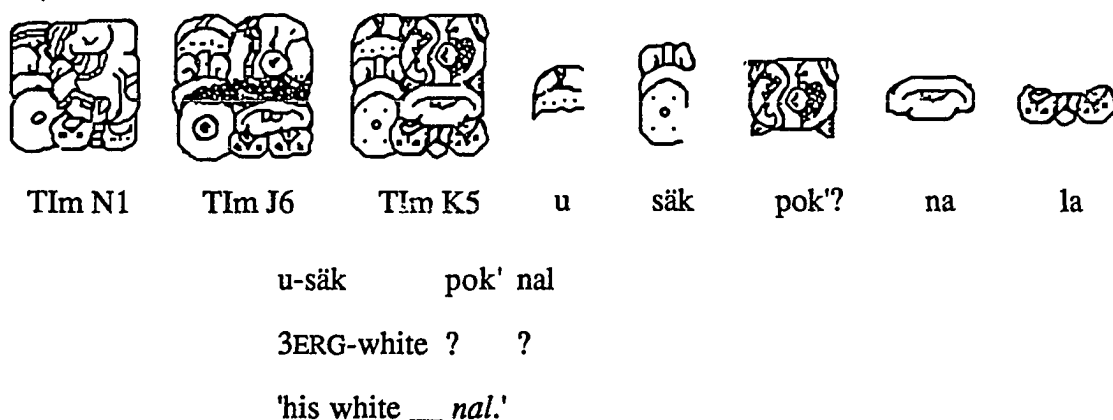
Another item of clothing in this list is *pixol*. The first sign is /pi/, the 'decorated ajaw' is /xo/ (Stuart 1987:47), and the last sign appears to be /la/ (in all three examples the suffix is indistinct). This is the word for 'hat' in virtually all Greater Tzeltalan languages.

(6.6)



Another glyph that appears to represent a ceremonial object is the one which is prefixed by *u-* and the sign for 'white', and is suffixed by the phonetic signs /*na/* and /*la/*. It occurs twice (TIm J6 and K5), each time in the same position in the phrase, following *pixol*. The third time the phrase occurs there is a different face in place of the upturned frog and the /*na/* sign. It is not possible to determine if this different face signifies an alternative spelling or if it signifies a variation in the type of object intended. All three are shown in the figure below, with the individual signs separated out for the last example.

(6.7)



The fact that the glyph is prefixed by the possessive marker and the adjective 'white' suggests that it is indeed some kind of object. To date there is still no accepted phonetic reading for the upturned frog (T740) which functions as the verb 'be born'. Bricker (1986:151) suggests that it is read *ay*, Justeson (1984:354) has proposed proto-

Yucatecan **yi7h* or **si:h*, and Riese (Justeson 1984:354) has offered *tohk*. So far, none of these readings have been confirmed.

There is an older reading that is consistent with several important facts. Proskouriakoff (1960) demonstrated that the upended frog was the 'initial date' associated with each ruler, which Kelley interpreted as birth dates (1962b). Barthel (1968:134-135 quoted in Kelley 1976:123) proposed that the reading for the glyph is **pok'* which means both 'to be born' and 'frog' (language source not given in Kelley). Thompson (1950:47f, 239) had earlier offered the reading *po* 'frog, toad' for *po* 'moon' as an explanation of the presence of the upturned frog in the lunar statement given with Initial Series dates. Kelley (1976:123) notes correctly that the presence of the upturned frog in the lunar series simply refers to the count of days from the birth of the moon.²

In checking through lexical sources for a connection between 'birth' and 'frog' and 'ceremonial object' I found associations that were interesting, complex, and certainly not conclusive, as far as establishing an unambiguous homophonic relationship:

frog, toad: *pok*

**pok* toad (Kaufman & Norman 1984:129) PROTO-CHOLAN

pokok: xpokok frog, toad (Laughlin 1975:281) TZOTZIL

poc'oc', *xpococ* ~sapo (toad) (Hurley & Ruíz Sánchez 1978:100) TZOTZIL

pococ sapo (toad) (Slocum & Gerdel 1980:174) TZELTAL

popoc sapo (toad) (Aulie 1978:94) CHOL

pococ sapo (toad) (Aulie 1978:95) CHOL

birth SET 1: *pok'*

pok'an ba sit (woman) (Laughlin 1975:281) TZOTZIL

pok'et chak sitting (woman, man with baggy pants) (Laughlin 1975:281) TZOTZIL

pok'etik sitting (women) (Laughlin 1975:281) TZOTZIL

pok'i sit (woman) (Laughlin 1975:281) TZOTZIL

pok'leh sitting /woman/ (Laughlin 1975:281) TZOTZIL

poq'oh (v) sprout, multiply, be born, hatch, burst open, split (Edmonson 1965:91)

QUICHE

birth SET 2: *pohk*

pojki nacer reventar (to be born, to burst) (Lenkersdorf 1979.1:299) TOJOLABAL

pojki ja alatzi El niño nació (The child was born.) (Lenkersdorf 1979.1:299)

TOJOLABAL

pojkel parto (birth) (Lenkersdorf 1979.1:299) TOJOLABAL

birth SET 3: *p'ohl*

p'ojlel vi reproducirse (reproduce) (Aulie & Aulie 1978:99) CHOL

**p'ol* abound (Kaufman & Norman 1984:129) PROTO-CHOLAN

**p'ohl* aumentarse, multiplicarse (to increase, multiply) (Kaufman & Norman
1984:129) TZELTALAN

**p'ol* aumentarse, multiplicarse (to increase, multiply) (Kaufman & Norman
1984:129) LOWLAND and GREATER TZELTALAN

ceremonial object: TZOTZIL: *pok'*; YUCATECAN: *p'ok*

sakil pok' white head cloth /worn by angels, holy elders, ensign-bearers and sir
spook/ (Laughlin 1975:304) TZOTZIL

pok' neckerchief, scarf material, clothing, inan. poss.; usu. bag /for tortillas, bread,
salt, candles or chaplet/ (Laughlin 1975:264) TZOTZIL

tz'il pak'al red striped turban (Laughlin 1975:264) TZOTZIL

tzahal pok' red turban /worn by ritual tutors, governors, ensign-bearers (Laughlin
1975:264) TZOTZIL

yaxal pok' blue cloth with white cross hung behind cross on Good Friday
(Laughlin 1975:264) TZOTZIL

poc' pañuelo, tela (handkerchief, shawl, cloth) (Hurley & Ruíz Sánchez 1978:100)
TZOTZIL

spac'al servilleta (de tortillas, pan, etc.), ropa (de una persona) (cloth for tortillas,

bread, etc.; clothes) (Hurley & Ruíz Sánchez 1978:100) TZOTZIL

p'ok sombrero o caperuza o bonete, sombrero de palma, casquete, casco, yelmo
(hat or hood or bonnet, palm hat, helmet) (Barrera Vasquez 1980:696)

YUCATEC

p'ok corona (crown) (Barrera Vasquez 1980:697) YUCATEC

(*ah*) *p'oknal* ensombrerado, el que tiene o usa sombrero (hatted, he who has or
uses a hat) (Barrera Vasquez 1980:697) YUCATEC

p'ook sombrero (hat) (Ulrich & Ulrich 1976:375) MOPAN

p'ook hat (Bruce 1975.2: 257) LACANDON

All of these words have initial /p/ or /p'/. The words for 'hat' and some of the words for birth have a final /k/ or /k'/. The Yucatecan words for 'hat' *p'ook* and the Tzotzil words for 'types of head cloth' *pok'* differ in glottalization of the consonants. It is possible that these words are true cognates; the consonants in one of them have undergone metathesis of the feature of glottalization.

Without going into further discussion of these words here, I would simply like to suggest that there is some support for the notion that the head of a frog may represent the word for 'hat' or 'head cloth' in the two examples shown above. With more complete lexical evidence it may be possible to establish a phonetic link between 'birth' and 'frog' (to parallel the functional link in the writing system which has been demonstrated), but such a link may be dependent on the notion that Eastern Mayan languages were involved with the script during its formative phase.

Before offering a rough gloss of the /k'a/ sentences from the middle panel of the Temple of the Inscriptions (see Appendix I for hieroglyphic version of these passages), I would like to give one of the shorter sentences which follows the same pattern as the others, and differs only in having a single subject. This sentence is the second one in the second set:

(6.8)

TIm J10-L2



x-u-k'aw k'atun pakal ch'ich' ajaw bak
 FUT-3ERG-remember katun Pacal blood royal Heron (Palenque)
 'The katun of Pacal of the royal blood of Palenque will be remembered.'

The subjects of the first set of three sentences are the helmet and the cycle (?) of each of the members of the Palenque Triad. The subjects of the second set are the cycle (?) and a series of ceremonial objects of each of the members of the Triad, except for the shorter second sentence illustrated above.

The helmet, the 20 cycle of GI will be remembered. (TI C5-D7)

The helmet, the 20 cycle of GII will be remembered. (TI C8-E1)

The helmet, the 20 cycle of GIII will be remembered. . . . (TI F1-E9)

The 20 cycle, the hat, the white headband, the __, the __, the earring, the helmet of
 GI will be remembered. (TI F9-G4)

The katun of Pacal, Lord of Palenque, will be remembered. (TI J10-L2)

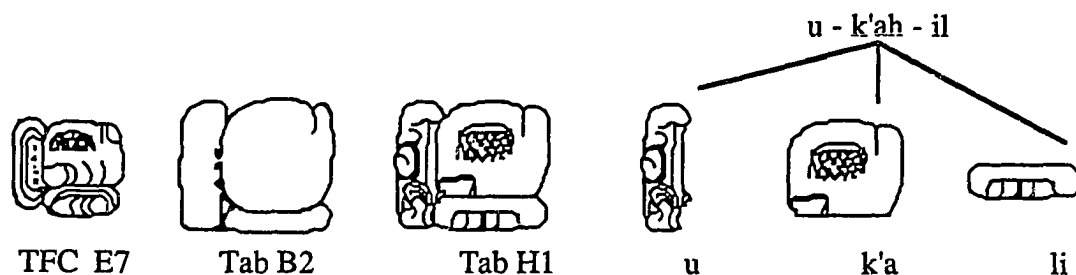
The 20 cycle, the hat, the white headband, the __, the __, the earring, the helmet of
 GII will be remembered. (TI K3-K9)

The 20 cycle, the hat, the white headband (?), the __, the __, the earring, the helmet
 of GIII of the Triad will be remembered. (TI L9-N5)

A second inflected form of *k'ah* is found in some other passages at Palenque. One

example occurs on the Table of the Foliated Cross, and two examples occur on the Tableritos from the Palace. MacLeod (1983:54f) analyzes these examples as possessed nouns which are prefixed by the third person ergative person marker and suffixed by the nominal suffix *-il*.

(6.9)



Str. I.: a possessed noun [firm] 'his commemoration' [probable]
Reading: uk'ahil [firm]

u-k'ah-il

3ERG-remember-N SUF

'his commemoration'

This construction is very similar to one found in the count of the katun section of the Yucatec Book of Chilam Balam of Chumayel *He u kahlay uchci bal tu mentahob* (Roys 1933:20) 'this is a record of the things they have done'; *U kahlay katunob utial Ah Itzaob* 'this is a record of the katuns of the Itza' (Roys 1933:50). Here the Yucatec verb root *k'ah* is inflected as a possessed noun:

u-k'ah-lay

3ERG-remember-NOM SUF

his/their commemoration

This rather lengthy explanation of the occurrences of a single verb illustrates some of the problems faced by the epigrapher linguist in trying to use supportive lexical and

morphological data from related Mayan languages in ways which are not misrepresentative of those languages, and which maintain the integrity of the phonological and morphological data preserved in the hieroglyphic record. In this example Cholti supplies information for both the prefix and the suffix. Most linguists would feel more comfortable if the language were a Western Cholan language, Chol or Chontal. The Eastern Cholan data may just be fortuitous or it may be indicative that in these cases Cholti had preserved some older features that were lost in Western Cholan. A third possibility is that, in fact, there was some connection between Palenque and Eastern Cholan speakers, but this last possibility would be credible only in the face of additional supporting linguistic evidence.

6.4. Limitations of This Description

Having demonstrated in detail the decipherment of one verb *xik'aw* and the sentences in which it occurs, I will now present, with less detail, some of the aspects of morphology in Palenque Mayan. When a particular reading is being suggested here for the first time, I will make note of that. Otherwise, particular interpretations are the work of one or more of the many scholars who have contributed to our present state of knowledge.

What follows is a somewhat incomplete description of the morphology of Palenque Mayan. The primary difficulty is that the script is still not thoroughly understood. A few fairly common signs have not been deciphered, and some of the phonetic and logographic values which have been proposed will undoubtedly be revised. And even for those words for which there are secure readings, a much more comprehensive morphological analysis will be possible with the completion of a relational database which includes completely coded digitized images of all the texts, so that every example of every morpheme can be called up instantly and be compared, each one in context.

What follows is a first attempt to describe the word-formation processes of Classic Period texts from a single site and a single time period from within a traditional linguistic framework. The Palenque texts record exclusively the political-historical genre of a spoken

language that was used in every aspect of living, so even when a comprehensive morphological analysis of these texts has been completed there will be some significant gaps in the data.

6.5. Morpheme Types Not Identified in the Inscriptions

Some of the gaps which exist in the hieroglyphic texts include a lack of first and second person markers, plural marking on nouns or verbs, imperatives, negation, and affect roots. The lack of first and second person markers, imperatives, and negation is simply a reflection of the narrative style of the texts. There are examples of nouns and verbs which are clearly plural, but since plurality is not consistently marked in many Mayan languages it would not be surprising if it were omitted from hieroglyphic texts. Plural affixes may yet be identified.

One word class found in Greater Tzeltalan languages which is missing is affect verbs. They are a class of intransitive verbs which are 'vividly descriptive' (Ringe 1981:62) and are identifiable by certain morphological and semantic characteristics. They refer to 'dynamic attributes and situations such as sound, motion, and a few internal feelings' (Knowles 1984:268). The formal register of the Maya texts would probably have excluded the use of these words.

6.6. Morpheme Classes in Palenque Mayan

The morphemes found in Palenque Mayan are of the same types as are found in proto-Cholan (Kaufman & Norman 1984:89ff). They can be divided into roots, affixes, and particles. Roots include transitive verb roots, intransitive verb roots, positionals, and adjectives. Affixes can be derivational (forming a new word from a root) or inflectional (marking a word for person, number, case, or tense). In the next chapter I describe the person markers, verbs, nouns, particles, numerals, adjectives, and adverbs found in Palenque Mayan, and the derivational and inflectional processes which apply to them.

Notes for Chapter 6.

¹ Knowles notes that *h-e/x-e* is often used as a future in the sense of 'going to. . .', but that is probably a totally different construction than the *x-* in Cholti.

² There may, in fact, be a 'moon' connection in that the head variant for the uinal period of 20 days is a frog, though instead of facing up, it faces to the left as do all the head variants. As noted above, *po* is 'moon' in only three Mayan languages, all of which are Greater Quichean languages to the north and east of Quichean Proper, and a direct link between the 20-day period and a month has yet to be demonstrated.

Chapter 7. Person Markers

Mayan languages have two sets of person markers.¹ The absolutive person markers are verbal suffixes which index subjects of intransitive verbs and direct objects of transitive verbs. The ergative person markers are prefixes. They are prefixed to verbs to index the subjects of transitive verbs, and to nouns to indicate person and number of possessors. When the subjects of transitive verbs are marked differently from subjects of intransitive verbs and direct objects, they are said to be marked in an ergative pattern. When subject of both classes of verbs are marked alike, and objects are marked differently, the marking is nominative/accusative.

Ergative/Absolutive Marking:	subjects of transitive verbs
	subjects of intransitive verbs and objects of transitive verbs
Nominative/Accusative Marking:	subjects of transitive and intransitive verbs
	objects of transitive verbs

Figure 7.1. Patterns of Argument Marking.

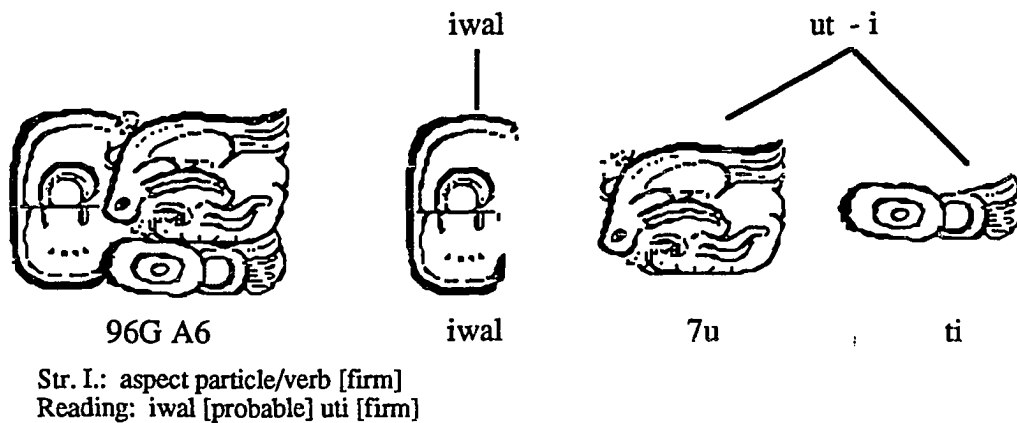
Most Mayan languages exhibit nominative/accusative marking in certain environments. In modern Yucatecan and Cholan languages the nominative/accusative pattern occurs in the incompletive aspect, that is, subjects of intransitive verbs can be marked with the ergative person marker, just like subjects of transitive verbs, in the incompletive aspect. This combination of ergative and nominative/accusative marking is

called a split ergative pattern. In some Eastern Mayan languages nominative /accusative constructions occur in subordinate constructions. The Tzeltalan languages Tzeltal and Tzotzil mark all verbal constructions ergatively, whether completive or incompletive; that is, subjects of intransitive verbs are never marked with the ergative person marker.

The difference in argument marking patterns between the Tzeltalan and Cholan families has some implications for the Classic Period inscriptions. First of all, since Tzeltalan (and other Western Mayan groups) does not have a split ergative system, the feature must have spread to, or developed in, Cholan after Cholan split from Tzeltalan. Second, it is uncertain when this change might have taken place, though it was probably before Cholan split into Eastern Cholan and Western Cholan. Figure 2.1 shows that this split is estimated to have taken place by 550 A.D., that is, not very long before the carving of the texts at Palenque. If these dates are correct, Palenque Mayan probably had a split ergative pattern for marking arguments in the incompletive aspect, but because of the difficulty in estimating the time precisely, that is not a certainty.

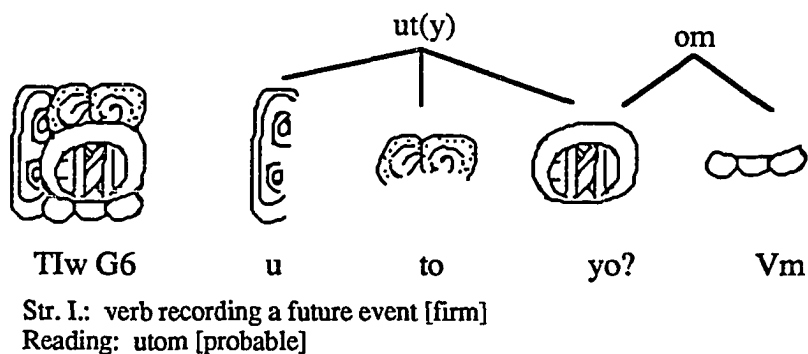
In the past I have stated that I could not find evidence of split ergativity in the Classic Inscriptions (Macri 1986a, 1986b, 1986c). Part of my objections arise from the fact that the initial evidence given for nominative/accusative markings was based on an incorrect interpretation of the 'jog' glyph as an intransitive verb (Bricker 1985, Josserand et. al. 1985, Schele 1984:9ff, 57ff), which I have demonstrated is better interpreted as a reflexive construction (see Chapter 14). It was also based on a failure to recognize the incorporation of direct objects in the verbal glyph. I still see no compelling evidence that there was nominative/accusative marking at Palenque. That is to say, I find no examples of the occurrence of an ergative person marker on an intransitive verb in the incompletive aspect. Every example of /u/ at Palenque is either the phoneme /u/ in a phonetic spelling as in spellings of the root *ut* in the phrases *iwal uti* and *utom* below,

(7.1)



iwal ut-i
CONJ happen-CMP
'and then (until) it happened'

(7.2)



or is an ergative third person marker modifying a noun to indicate possession, or an ergative third person marker modifying a transitive verb to indicate the subject.

So far, there has been no evidence that anything but third person is marked on the verbs in the inscriptions. One reason for assuming this is the historical nature of the inscriptions. There do not appear to be any exhortations or questions addressed to the reader, as is the case with some of the Colonial Yucatecan books of *Chilam Balam* (Craine

and Reindorp 1979, Edmonson 1982, Roys 1933), or with the *Ritual of the Bacabs* (Roys 1965), a collection of incantations.

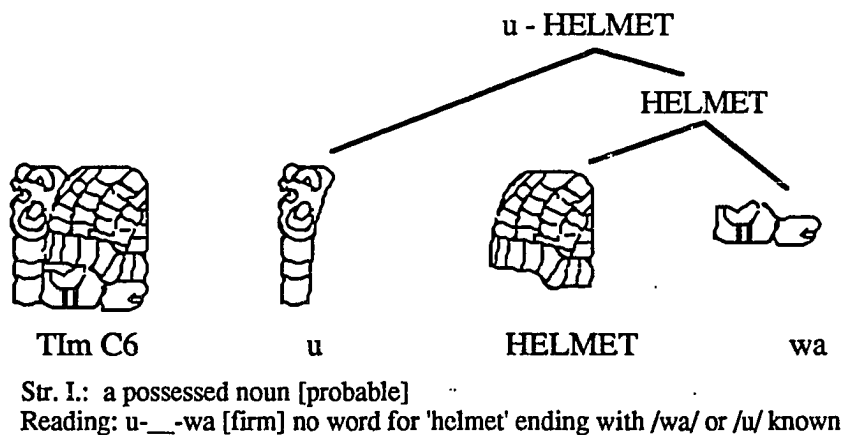
7.1. Ergative Person Markers

The ergative third person marker in Palenque Mayan is represented by any one of the many symbols for /ʌu/. The ergative third person marker is *u-* in Yucatecan, Cholti, Chorti, and Chontal. In modern Chol it is *i-*, and in Tzeltal and Tzotzil it is *s-*.

In the following example of one of the variants of /ʌu/, the ergative third person marker is prefixed to the glyph of a helmet, to form 'his helmet' (see discussion in Sections 5.2.5 and 6.3).

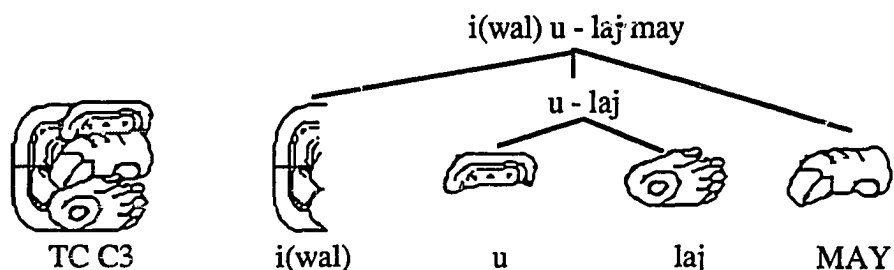
u - HELMET 'his helmet'

(7.3)



The next example shows a variant of /ʌu/, the ergative third person marker, as the subject marker with the transitive verb *laj* 'to end' in the phrase 'until he ended the *may* (a count of 13)'.
 (7.4)

(7.4)



Str. I.: period ending event [firm]
 Reading: i(wal) ulaj [probable] may [firm]

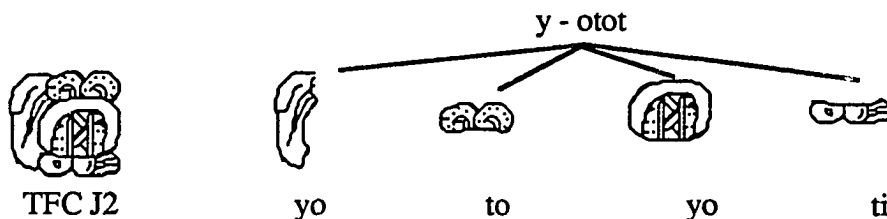
i(wal) u-laj may
 until 3ERG-end count of 13

'Until she ends the count of 13 (baktuns)'

The form of the ergative third person marker which occurs before roots beginning with /*(7)V*/ is *(i)y-* in Modern Chol, and *(u)y-* in the other Cholan languages. In Palenque Mayan there are at least two examples of the syllabic sign /*yo*/ used before roots beginning with /*(7)o*/ to indicate the 'pre-vocalic' form /*y-*/.

The first example is the possessed noun 'his house'.

(7.5)

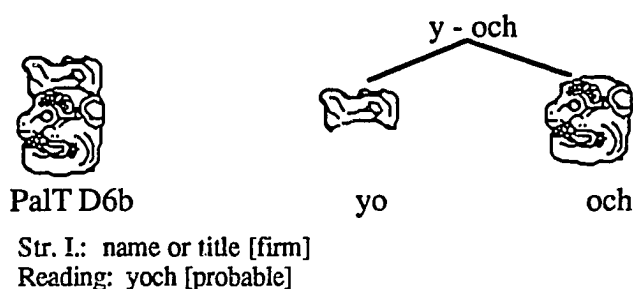


Str.I.: his house [firm]
 Reading: yotot [firm]

y-otot
 3ERG-house
 'his house'

The second example of the pre-vocalic form is /yo/ prefixed to the intransitive root *och* 'to enter'. It either means 'he enters' (nominative/accusative marking in the imperfective aspect) or 'his entering', a possessed noun. It occurs as part of Kan Xul's name phrase, and is the second part of a glyph block (implying that it is not the beginning of a clause, the most usual position for a verb). Both of these features favor the nominal interpretation.

(7.6)



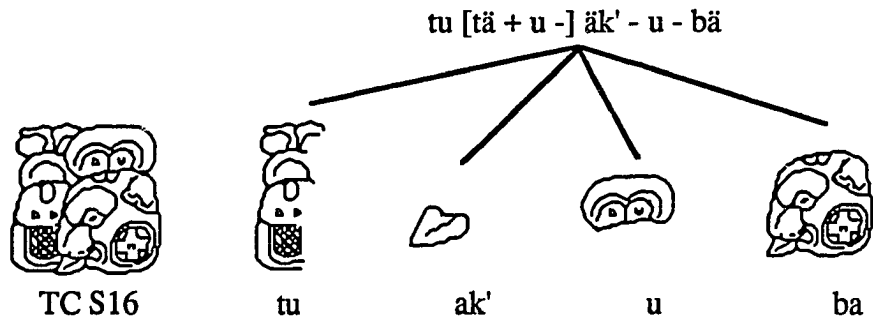
y-och

3ERG-enter

'he/his entering'

A prefix T89/90/91, phonetic *tu*, frequently records the elision of the preposition *tä* or *ta* and the third person ergative marker *u*, as in the phrase 'by his offering himself (bloodletting)', *tu äk-u-bä* (see Chapter 14 for discussion).

(7.7)



Str. I.: dependent clause [probable]
 Reading: tu [firm] ak' [probable] u [firm] ba [firm]

tä-u-ak'-u-ba

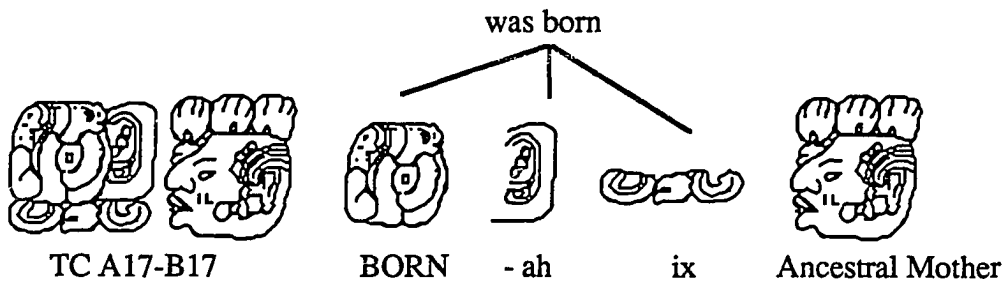
CML-3ERG-give-3ERG-RFL

'by his offering himself', 'by his bloodletting'

7.2. Absolutive Person Markers

The absolutive third person marker is Ø. An example of the intransitive verb 'to be born' with the third person absolutive, Ø, is shown in the phrase below, which is part of a much longer clause: 'On 12.19.13.4.0 8 Ahau 18 Zec, 9 in the count of 9, 5 days after the new moon in the second month of the 6 month period, a month of 29 days, the Ancestral Mother, Säk Bak, was born.'

(7.8)

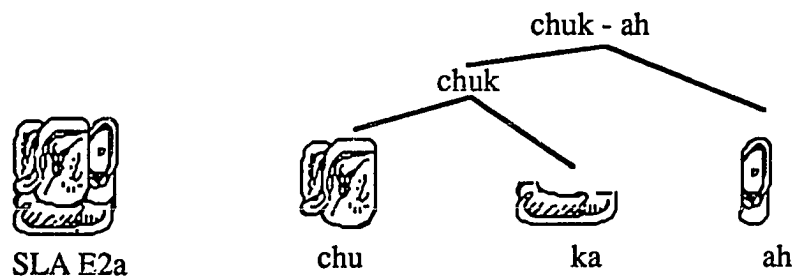


Str. I.: 'the ancestral mother was born' [firm]
 Reading: no Mayan reading proposed

BORN-ah ix ux na
 born-PASS FEM three mother
 'Lady Triad Mother was born.'

The subject of the passive construction with the verb *chukah-Ø* 'he was captured' is also marked by the absolutive Ø.

(7.9)



Str. I.: he captured [firm]
 Reading: chukah [firm]

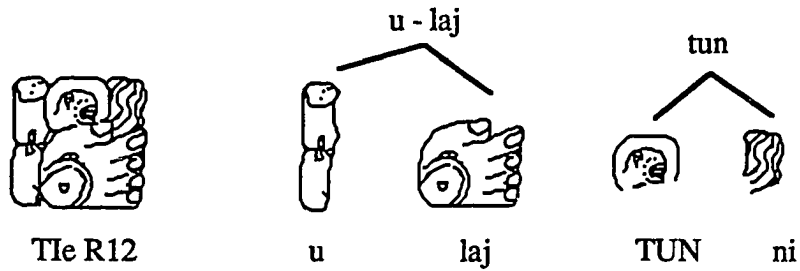
chuk-ah-Ø

capture-PASS-3ABS

'he was captured'

In the next example the absolutive marks the direct object in a transitive construction.

(7.10)



Str. I.: event that occurs at period endings [firm]

Reading: u [firm] laj [probable] tun [firm]

u-laj-Ø tun

3ERG-end-3ABS tun

'He ended the tun.'

Note for Chapter 7.

¹ Chorti has a third set which mark the subjects of intransitive verbs in the incomplete aspect.

Chapter 8. Verbs

Verb roots in Late Classic Palenque Mayan may be transitive or intransitive. A third root class from which adjectives and intransitive verbs are derived is positionals.

8.1. Transitive Verbs

Because some event glyphs which are preceded by *u-* are immediately followed by subject noun phrases, it has been assumed there is no direct object, and that since there is no direct object, the verbs must be intransitive verbs marked with ergative person markers in a partially ergative—split ergative—system. There are two observations to be made about this assumption.

The first is that the third person absolutive marker, which marks the direct object on a transitive verb, is \emptyset , so it would not be present phonologically or glyphically. But because of the presence of person markers on verbs it is characteristic of Mayan languages that independent subject or object NPs are optional. DuBois's work on Sacapultec shows that, in fact, the presence of two NPs in sentences is rare (DuBois 1981, 1987).

A second observation is that, whether or not true linguistic object incorporation is present, there is evidence of visual object incorporation within the glyph block itself. Examples of transitive expressions with glyphic object incorporation are given below. The first example is the 'fish in hand' glyph, which is associated with blood-letting (Proskouriakoff 1973). The fish may be a direct object or it may be a phonetic complement. If it is an object, it is interesting to observe that the fish is present whether or not the glyph is preceded by the ergative person marker. In the absence of the ergative person marker the fish would have to be interpreted as a true incorporated object.

(8.1)



TFC C9



u



HAND



FISH

Str. I.: a verb associated with bloodletting [firm]

Reading: u- [firm] no accepted reading for the fish-in-hand

u-HAND-Ø FISH

3ERG-HAND-3ABS FISH

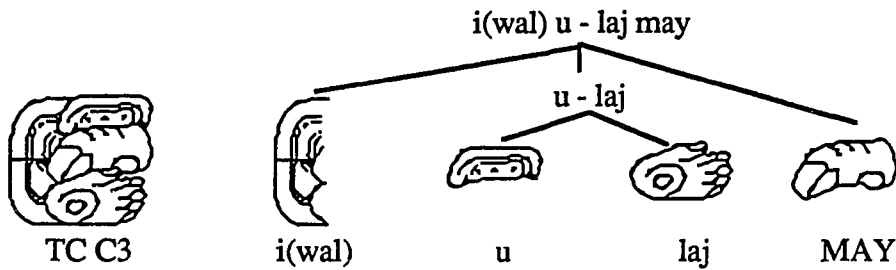
'He __ fish.'

A set of verbs that are better understood in terms of meaning and phonetic reading than the 'fish in hand' are verbs with the flat hand, T713a, which I have suggested be read /la/ (Macri 1985b:218) following Kelley's suggestion that a smaller, affix hand sign T217 be read *lah* (Kelley 1976:137ff). This was based on Thompson's observation of the homophony of the Yucatec root *lah* 'to end, finish' and *lah* 'to buffet with the palm of the hand' (Thompson 1950:280). This reading seems appropriate to the 'end' verbs shown here, and the 'hand over earth' glyph for birth. In all of these cases the direct object is placed to the thumb side of the hand.

iwal ulaj may 'he ended the *may*'

A *may* is a count of 13. It is used for a count of 13 baktuns in the following example, and for a count of 13 years on the Tableritos from the Palace.

(8.2)



Str. I.: period ending event [firm]
 Reading: i(wal) ulaj [probable] may [firm]

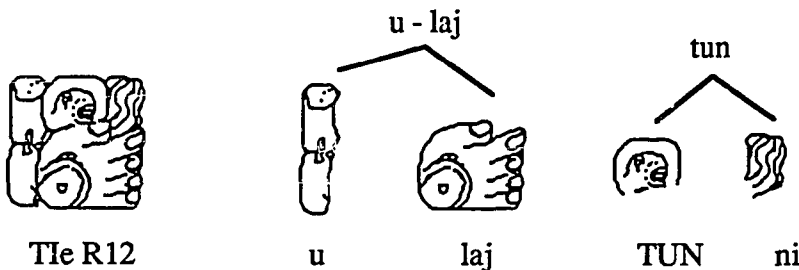
i(wal) u-laj-Ø may
 then 3ERG-end-3ABS count of 13

'... then she ended the count of 13 (baktuns)'

The tun ending event glyph occurs frequently in the inscriptions. It is patterned the same as the phrase above.

u laj tun 'he ended the tun'

(8.3)



Str. I.: event that occurs at period endings [firm]
 Reading: u [firm] laj [probable] tun [firm]

u-laj-Ø tun
 3ERG-end-3ABS tun

'He ended the tun.'

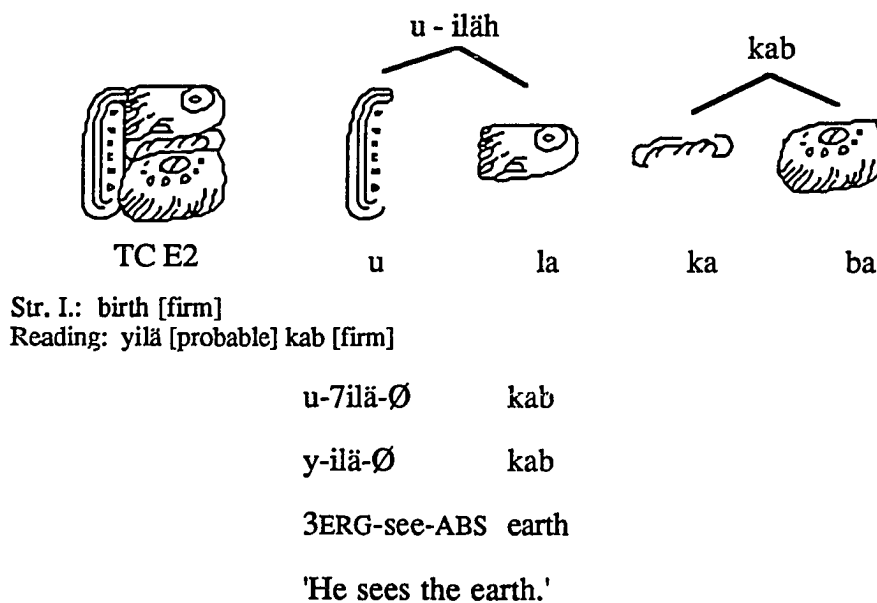
The 'hand over earth' glyph is used four times at Palenque and substitutes for the up-ended frog glyph. It was read by Lounsbury as a Chol metaphor for birth 'he

sees/touches/experiences the earth' (Lounsbury 1980:113f). It is always preceded by the ergative person marker. The hand is positioned above the glyph for 'earth' *kab*.

Sometimes *kab* is spelled out phonetically with the syllabic signs T25 *ka* and T501 *ba* as in the example below, and sometimes it is indicated logographically by the Caban day sign which stands for 'earth'.

u laj kab 'he saw the earth'

(8.4)



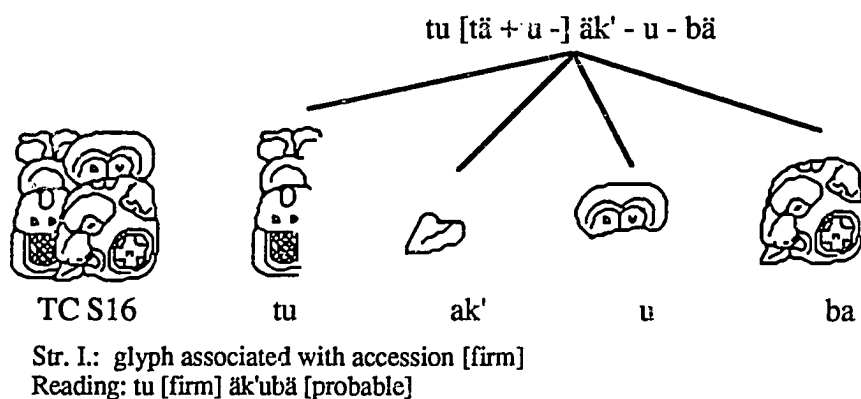
The phrase for 'nacer', 'to be born' in modern Chol is *ilan pañimil* literally 'to see the earth' (Aulie & Aulie 1978:60). The ergative third person marker would be pronounced /y-/ before the glottal stop initial root. *Pañimil* has replaced *kab*, 'earth'.

8.1.1. Reflexive Verb

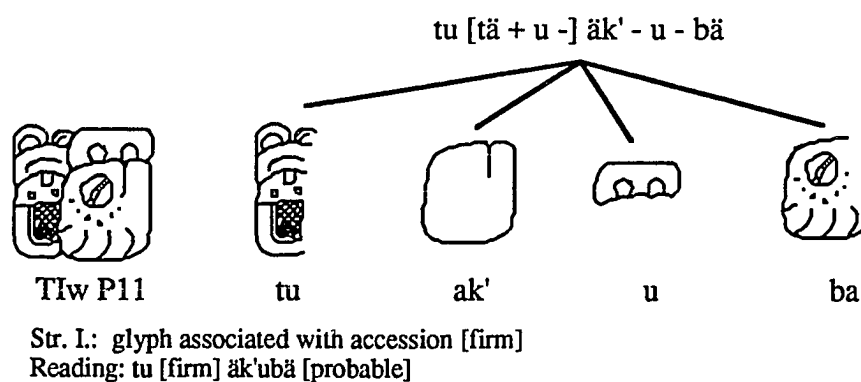
There is only one reflexive construction that I am aware of in the Classic Period inscriptions, the verbal use of the 'jog' glyph, T757, in the phrase 'to offer oneself'

meaning 'to let blood'. It occurs at Palenque primarily in a subordinate construction, found frequently in the tablets from the Cross Group (for evidence in support of this reading, and for a discussion of the syntax involved see Chapter 14). The second example below is an alternative spelling of the more common form, which has the gopher head, and adds support for the reading proposed: *tu äk'ubä*.

(8.5)



(8.6)



tä u-äk-Ø u-bä

tu äk-Ø u-bä

CML-3ERG give-3ERG-RFL

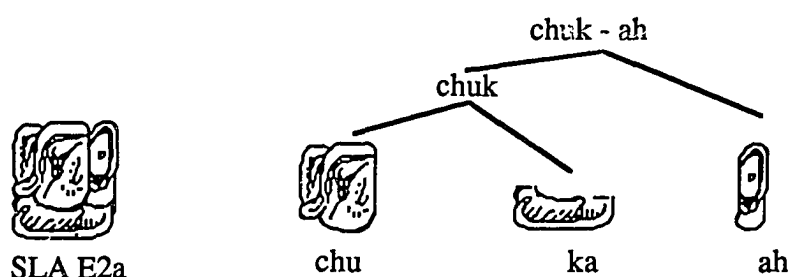
'by his offering himself'

8.1.2. Passive Voice

The passive voice is indicated in the Palenque texts by the verbal suffix *-ah* usually spelled with the sign T181. Kaufman and Norman (1984) reconstruct **-aj* as the thematic suffix for passives in Eastern Cholan. In my analysis I have spelled the passivizing suffix as *-ah*. It occurs on a number of verbs in the Palenque text.

One widely recognized occurrence is on the verb *chuk* 'to capture'. Here a transitive verb root spelled with phonetic signs for /chu/ and /ka/ is followed by the passivizing suffix *-ah*; it appears without an ergative person marker and is accompanied by only one argument, the name of the captive.

(8.7)



SLA E2a

Str. I.: capture verb [firm]
Reading: chukah [firm]

chuk-ah-Ø

capture-PASS-3ABS

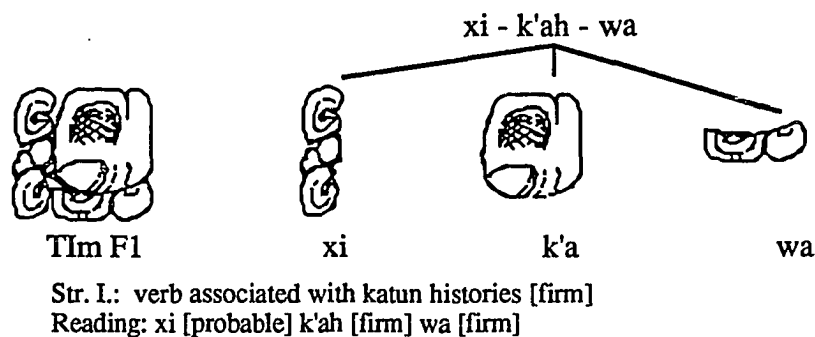
'He was captured.'

In occurrences other than at Palenque the name of the captive is followed by a stative construction which identifies the name of the captor:

chuk-aj-Ø u-bak NAME OF CAPTOR
capture-PASS-3ABS 3ERG-captive NAME OF CAPTOR
'X was captured. [X was] Y's captive.'

Another example of a passive is the *k'a* verb which occurs on the tablets from the Temple of the Inscriptions (see Section 6.3). In the *k'a* verb the passive morpheme is *-wa*.

(8.8)



x-u-k'ah-aw

FUT-3ERG-remember-PASS

'It/they will be remembered.'

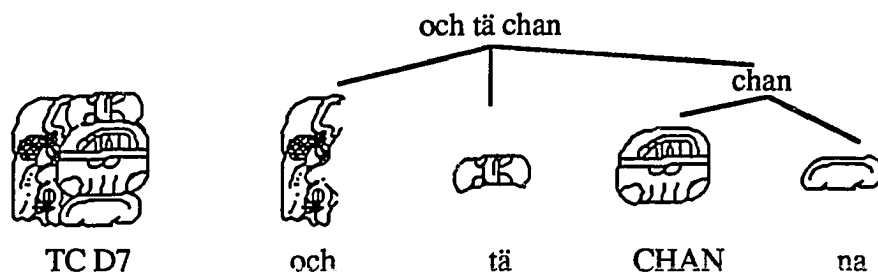
There are several possible explanations for the difference between this example and *chukah*. The first is that one of the identifications is incorrect. Preferred explanations would be that the /w/ is a result of the sequence /kah/ + /ah/, or that the endings are different because *chukah* is a present or complete, and *kahwa* is future. If only one of these forms is a passive, the stronger argument is for *chukah*.

8.2. Intransitive Verbs

There are far more intransitive verbs than transitive verbs in the hieroglyphic texts. They are not prefixed by an ergative third person marker.

In the first example, the intransitive root *och* 'enter' is followed by a prepositional phrase *tā chan*, which literally means 'in the sky', but in modern Cholan languages has the meaning 'up there' (Kaufman & Norman 1984:117).

(8.9)



Str. I.: enter [probable] into the sky [firm]

Reading: och [probable] tä chan [firm]

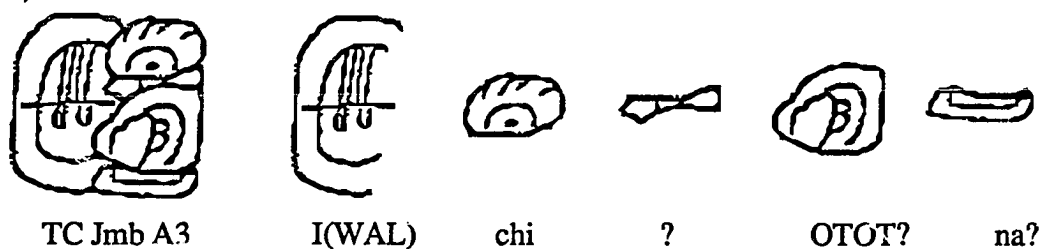
och-Ø tä chan

enters-3ABS PREP sky

'He enters into the sky.'

The verb known as the 'house event verb' is intransitive, since it is never prefixed by an ergative person marker, and it is associated with what appear to be dedications of ceremonial buildings (Schele 1987n:140). Very little is understood about the phonetic reading for this glyph.

(8.10)



Str. I.: Intransitive verb associated with house dedications [firm]

Reading: none proposed

iwal chi ? otot? na

then ?-3ABS ? house building

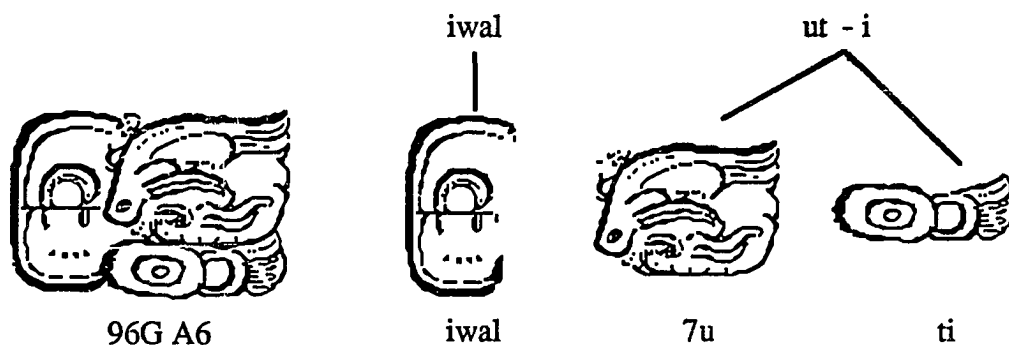
'then . . .'

8.2.1. Completive Aspect

The following verb follows the particle *iwal* which may be roughly glossed as

'until'. The root *ut* means 'to happen'. It is followed here by the completive suffix *-i*.

(8.11)



Str. I.: aspect particle/verb [firm]
Reading: iwal [probable] uti [firm]

iwal ut-i

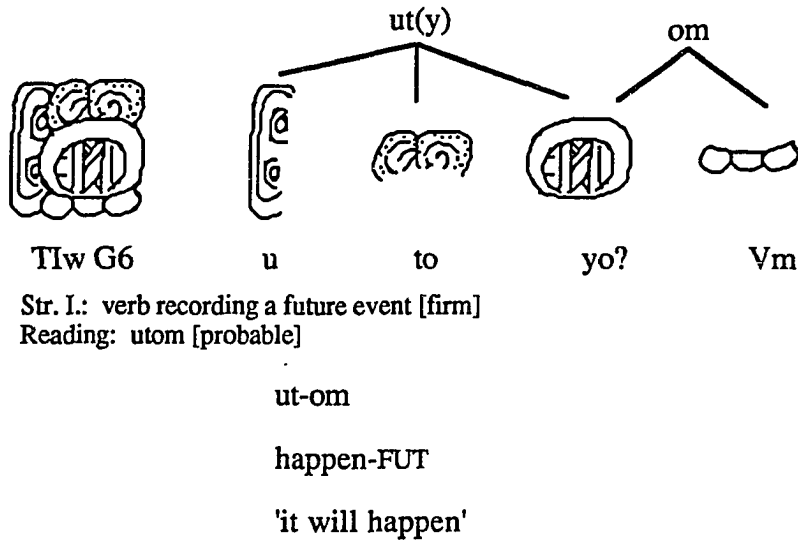
CONJ happen-CMP

'and then (until) it happened'

8.2.2. Future

The glyph shown in the example below has been recognized for some time as a marker of a period ending event that had not yet happened at the time of the writing, that is, that it marked a future period ending. It was assumed that the /u/ sign prefixed to it was an ergative person marker indicating possession on a noun, or cross-referencing the subject of a transitive verb, or the subject of an intransitive verb in the incomplete aspect in a split ergative system. Over time phonetic values were assigned to more of the signs, the dotted circles above the main sign were identified as /to/ (Justeson 1984:319), and /Vm/ was tentatively proposed for the three part suffix (Stuart 1987). With the syllabic signs /u/, /to/, and /Vm/ identified, Terrence Kaufman suggested that it is a future form of the verb *ut* 'happen, occur' (personal communication Kathryn Jossierand, 1987).

(8.12)



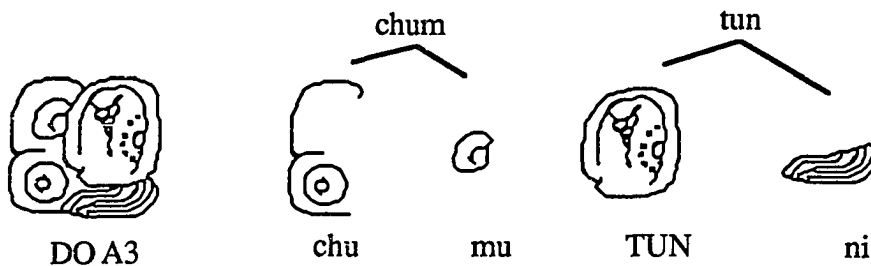
This interpretation fits perfectly in the contexts in which it occurs. The example above relates to the eightieth calendar round (a calendar round is 52 years, so 80×52 , or 4,160 years!) anniversary of Pacal's accession to office on 5 Lamat 1 Mol (Maya date 9.9.2.4.8): 'In 8 days, 5 uinals (20 day periods), 10 tuns (years of 360 days), 11 katuns (20 year periods), and 10 baktuns (400 year periods), 5 Lamat 1 Mol (Maya date 1.0.0.0.8) will occur. It is one pictun with 8 days from the seating of the tun on 10 Ahau, 13 Yaxkin (Maya date 1.0.0.0.0). Then 5 Lamat 1 Mol will occur.'

8.3. Positionals

There are probably several positional stems that occur in the Palenque texts. So far, however, only one positional root has been confidently read, *chum*, which means 'seated' (MacLeod 1984:66ff). In the first example below the root *chum* occurs in a compound glyph block with the sign for *tun*, the 360 day period. It immediately follows a calendar round date giving the date of the first day of a tun, which itself is preceded by a distance number of 7 uinals and 4 tuns (4 years of 360 days and 7 20-day periods) indicating the length of time from this tun ending to a future 'house dedication' event. No inflectional

endings are indicated on the sign. Presumably the sentence would read: '[It was] 7 uinals and 4 tuns from the seating of the tun. . .' In this case the positional would appear to be used as a nominalized verb.

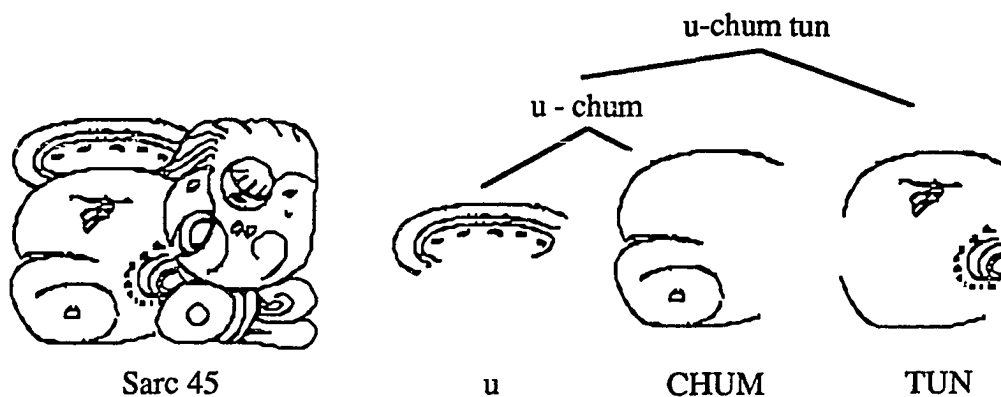
(8.13)



Str. I.: seating of the tun [firm]
Reading: chum tun [firm]

In the second example *chum* and *tun* have been conflated into a single sign and put in a compound glyph block with the name of Sak Kuk, the mother of Pacal. Here the ergative third person marker is prefixed to the tun seating sign, but there is no evidence of other inflectional or derivational morphemes. It may be read as a transitive verb, 'Sak Kuk seated the tun' or as a possessed nominal 'Sak Kuk's tun seating'.

(8.14)



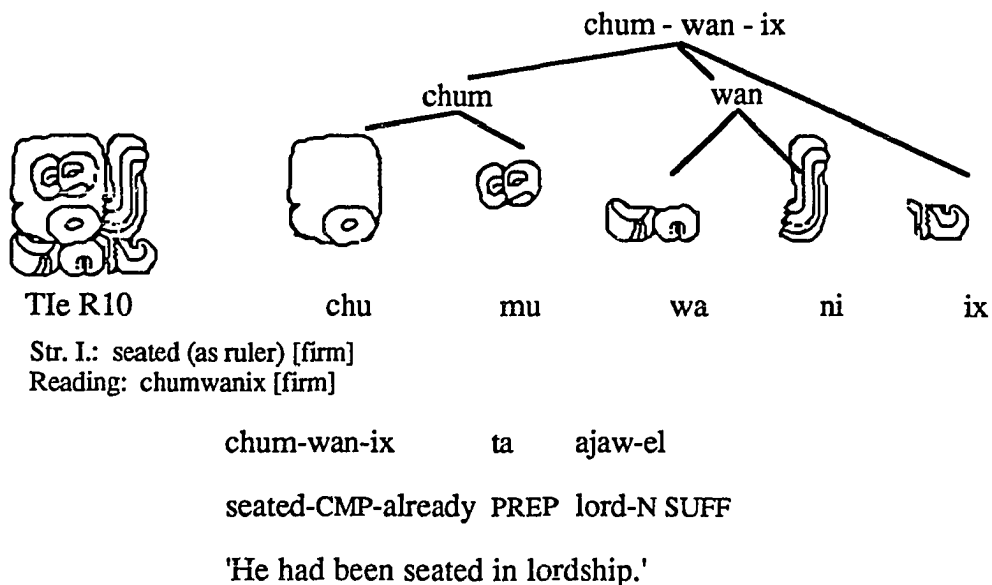
Str. I.: records a tun seating during the rule of Sak Kuk
Reading: u chum [firm] Säk K'uk' [firm]

u-chum tun Säk K'uk'
 3ERG-seating tun Sak Kuk (lit. white heron, egret)
 'Sak Kuk seated the tun' or 'Sak Kuk's tun seating'

Both this example and the previous one violate the rule that positional roots never appear without some derivational inflection. This, then, would appear to be a clear example of under-representation of morphological affixes in the script. That is not to say that they were simply ignored, but rather that the reader could be relied on to supply certain predictable morphemes.

The third example of *chum* does, however, occur with the expected derivational ending **-wan*, the the proto-Cholan ending which indicates completive aspect on positional roots. Here it occurs with the clitic *-ix*, 'already'. This verb refers to the seating of a ruler as lord, and is found several times at Palenque in the East Panel from the Temple of the Inscriptions.

(8.15)



This form of *chum* appears twice in the Acalan documents (Smailus 1975:32,69).

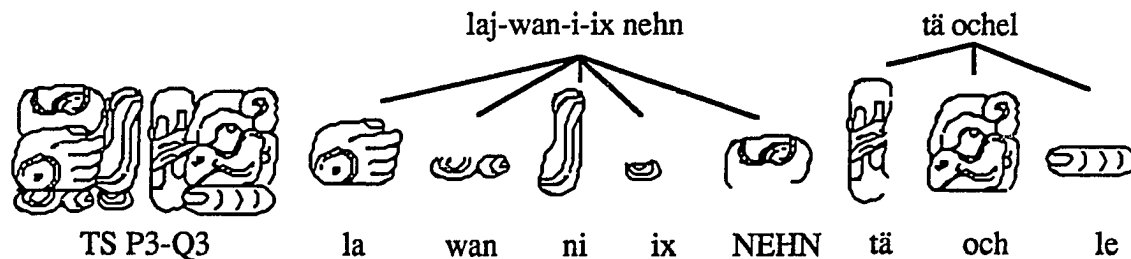
For example:

<chumvanix	ta	ahaulel	macvaabin. . >
chum-wan-ix	ta	ajaw-l-el	makwaabin
seated-CMP-already	PREP	ruler-N SUF-N SUF	Makwaabin
'Makwaabin had been seated in lordship. . .'			(Smailus 1975:32)

In this case we have an exact parallel between a Seventh Century hieroglyphic passage and a passage recorded with the Spanish alphabet in the Seventeenth Century.

Another example of a positional with *-wan* occurs in connection with heir designation, an event recorded on the Temple of the Sun which happened to Kan Xul I and Chan Bahlum II at the age of six years. The subject of the first example is Kan Xul I:

(8.16)



Str. I.: a phrase associated with heir designation [firm]
 Reading: no reading for the verb root, wanix [firm] tä ochel [firm]

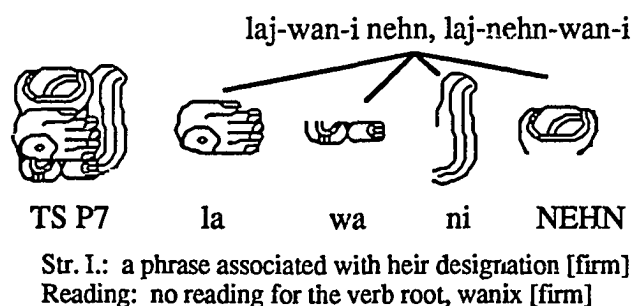
laj-wan-ix	nehn	ta	ochel
end-CMP-already	mirror	as	heir designate
'He ended (?) the mirror (?) as heir designate.'			

This has been glossed roughly by Schele as 'he had become the mirror (or 'he took the mirror') as enterer' (1987n:95). The first glyph is inflected as a positional verb in the completive aspect, here with the clitic *-ix* 'already'. The second glyph contains the verb

och 'to enter', here with a nominal ending *-el* with the meaning of 'enterer'. Laughlin (1975:65) gives the form *7ochel* 'beginning', *h7ochel* 'incoming official', and *7ochebal* 'entrance /into religious post/'. So the phrase could be glossed 'he ___ by his entering', 'he ___ in the beginning', or 'he ___ as incoming official (heir designate)'. The meaning of the first verb, other than that it has to do with heir designation, is not clear. I have glossed it above as 'ended' which is consistent with other examples of the T713 hand. This is probably not the correct gloss since *laj* is not a positional root. *Nehn* is the word for mirror which is what appears to be above the hand. *Unen* is the word for child or baby. The phrase could mean 'he ended his infancy'.

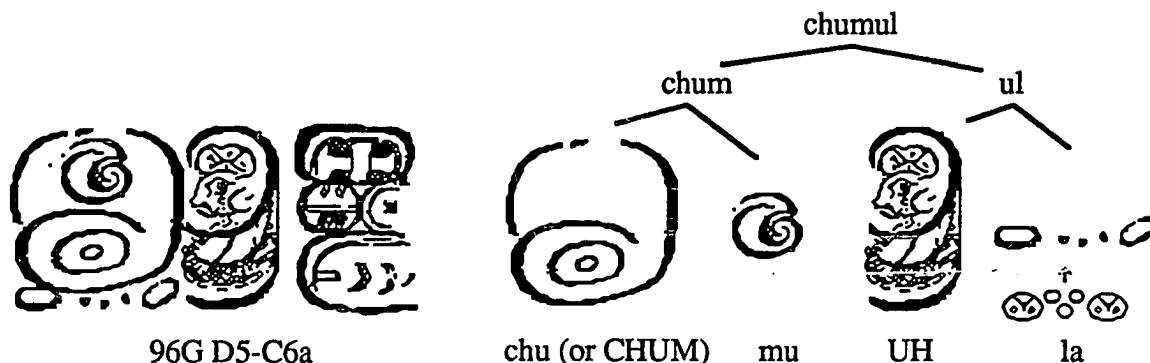
The verb occurs a second time, this time with Chan Bahlum as the subject. The inflection is identical except that particle 'already' is not present. The figure illustrates two possible reading orders for the morphemes. The first one allows that the object in the hand is a separate word, the second one incorporates it into the verb stem.

(8.17)



There is another affix pattern found at Palenque in three seating expressions on the Tablet of the 96 Glyphs at D5, F3, and H2. In the first example /la/ is beneath the seating glyph, and /ah/, the 'moon' sign follows it.

(8.18)

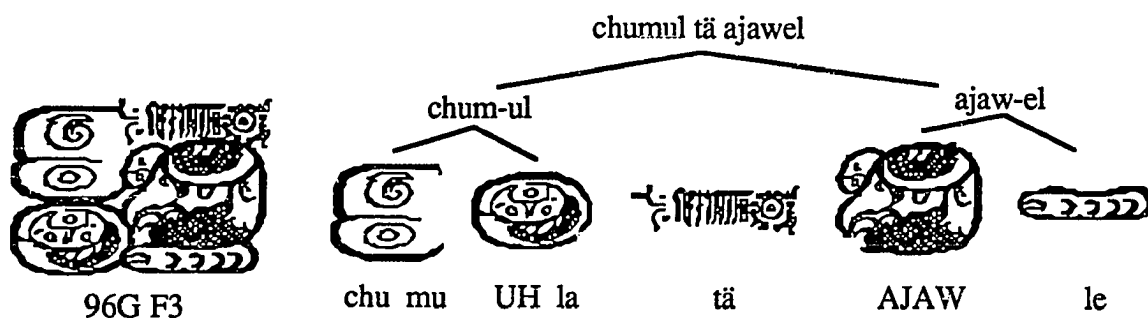


96G D5-C6a
 Str. I.: 'he was seated as ruler' [firm]
 Reading: chumul tä ajawel [firm]

chum-ul
 seated-STAT

In the example at F3 shown below (and the glyph at H2) the sign for /la/ is infixed in the 'moon' sign, which has previously been interpreted as T181 and has the phonetic value /ah/, suggesting the reading /(h)al/ or /lah/.

(8.19)



96G F3
 Str. I.: 'he was seated as ruler' [firm]
 Reading: chumul tä ajawel [firm]

All three glyphs immediately follow a date which is preceded by *awal uti* 'then it occurred, it happened' and precede the expression *ta ajawel* 'in lordship'. In these cases the proto-Cholan stative ending *-Vɫ* would predict the suffix *-ul*. A closer look at the

glyphs reveals that, in fact, what appears to be T181 really is a 'moon' sign. In the first example at D5 this is emphasized by the presence of the rabbit infix in it. In the other two examples /la/ is infix, but the sign is completely rounded, not cut off on the left side as is characteristic of T181. Thompson (1962), in fact, identifies this as a separate glyph, T180. The proto-Cholan word for moon is *uh, and it may very well be that the moon is shown here with /la/ to spell *-ul*, the stative affix for positional stems.

This explanation holds very well for the site of Palenque, but it does not explain the presence of /la/ T178 with (or infix in) /ah/ T181 which occurs frequently on the seating verb, and other likely positional verbs at other sites. Schele lists over 40 occurrences of T178.181 in the verb catalog (Schele 1982:334). The suffix *-wan* discussed above is the proto-Cholan completive suffix. It would appear that positional inflection during the Classic Period differed to some degree from the positional inflection reconstructed for proto-Cholan (Kaufman & Norman 1984:107), at least in the case of /lah/ T178.181, which is not a proto-Cholan ending, but which is consistent with the Yucatecan completive suffix for positionals.

Further investigation into this problem needs to be done with attention to variations in patterns from site to site and with an awareness of variations within certain time frames, so that language/dialect differences are not perceived as morphological inconsistencies within a single language. The Palenque texts, taken by themselves, are internally consistent. Some positionals are marked with *-wan* for the completive, some are marked with *-ul* for the stative, and some carry no overt marking.

Chapter 9. Nouns

Nouns in Palenque Mayan include noun roots and nominals derived from verbs.

9.1. Number

Noun roots with no morphological affixes are unmarked for number. That is to say, they may be either singular or plural. There is a plural morpheme *-ob* which is optionally added to some nouns to indicate plural in Yucatecan. There is no evidence that *-ob* is affixed to any noun roots in the Palenque texts.

In proto-Cholan the ergative third person plural marker is *u-* prefixed to the noun with *-ob* following it to indicate plural number. In the middle tablet from the Temple of the Inscriptions following the third sentence in the first set of *k'a* sentences (9.1), GI, GII, and GIII of the Palenque Triad are named as the children of the ruler Pacal in the phrase 'GI, GII, GIII, his children, Pacal of Palenque'.

(9.1)

TIm F4-E7



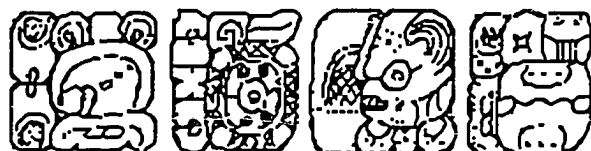
u-laj ___-na jun ___-la? ux ___-ti GI GII GIII

3ERG-end ___ one ___ three ___ GI GII GIII

'The Triad, GI, GII, GIII ended the ___.'

In the second example, the names of the triad are given, followed by a 'parentage' expression in which Pacal is named as a parent of the gods.

Tim F7-E9



u-unen mah k'ina wa pakal ajaw bak

3ERG-child great sunlord pacal lord Palenque

'the children of great sunlord Pacal of Palenque.'

The 'child of mother' glyph at F7, *u-unen*, 'his children' provides an example of a noun that must be plural, but that is not marked with *u- . . .-ob*.

9.2. Possession

In Mayan languages possession is indicated by marking the person, and optionally the number, of the possessor on the possessed noun using the ergative person markers. A possessive construction typical of Mayan languages is the possessive pronoun prefixed to the possessed noun, followed by the possessor. The first example is from Chol, the second from Tzotzil:

iy-ixim k-tyat

3ERG-maize 1ERG-father

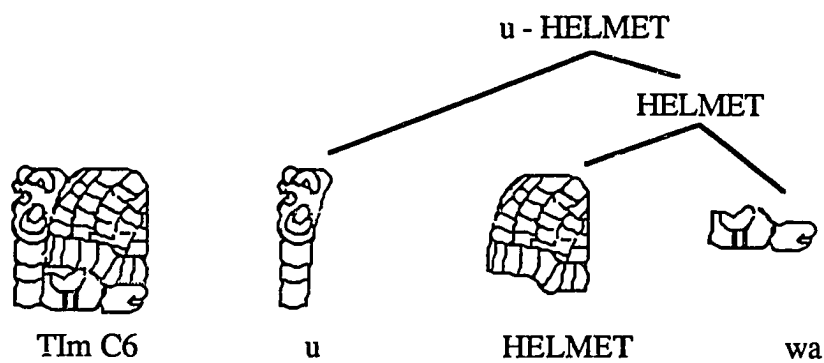
'my father's maize' (Warkentin & Scott 1980:26)

s-k'ob ti bolom
 3ERG-hand the jaguar
 'the jaguar's paw' (Cowan 1969:56)

This same pattern is what is found in the hieroglyphic texts at Palenque. The following examples are possessed nouns which are prefixed by the ergative third person marker to indicate a third person possessor. In the texts each of these nouns is followed by the name of its possessor.

'his helmet'

(9.2)



Str. I.: his helmet [probable]

Reading: u__wa [firm] no reading for root offered

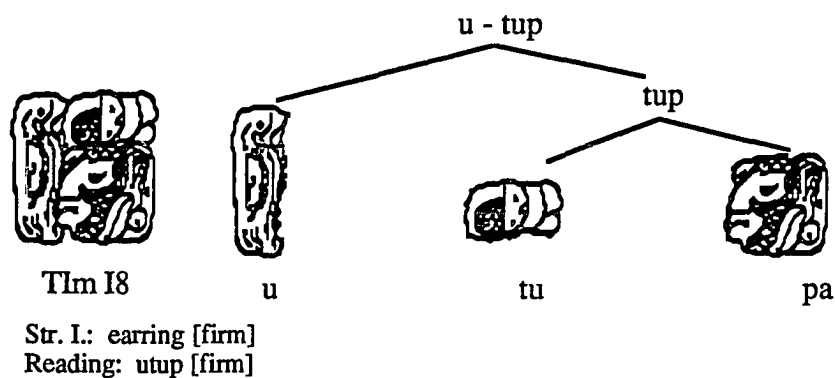
u-HELMETwa

3ERG-helmet

'his helmet'

u tup 'his earring'

(9.3)



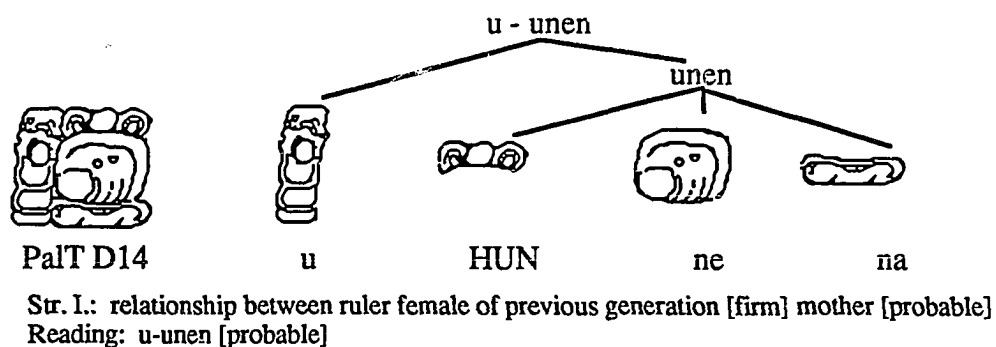
u-tup

3ERG-earring

'his earring'

uunen 'her child'

(9.4)



u-unen

3ERG-child of mother

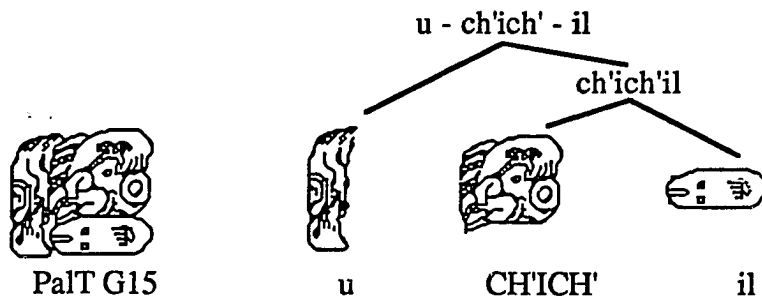
'her child'

uch'ich'il his blood

In Chontal certain nouns have 'part relation' possessed forms which differ from their possessed forms which indicate ownership. A *-VI* suffix is added to the stem, and it limits the referent to one specific possessed example (Knowles 1984:197). There is evidence of such an affix added to the 'God C head', a glyph known to be associated with bloodletting,

when it is prefixed by the ergative third person marker. That the God C head literally stands for the word 'blood' is supported by the fact that when it is preceded by the ergative third person possessive it is followed by an /il/ syllabic sign.

(9.5)



PaIT G15

u

CH'ICH'

il

Str. I.: noun associated with bloodletting [firm]
 Reading: uch'ich'il [probable]

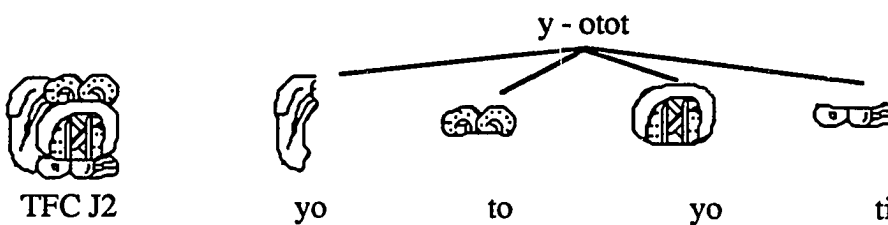
u-ch'ich'-il

3ERG-blood-N SUF

'his blood'

yotot 'his house'

(9.6)



TFC J2

yo

to

yo

ti

Str. I.: house [firm]
 Reading: yotot [firm]

y-otot

3ERG-house

his house

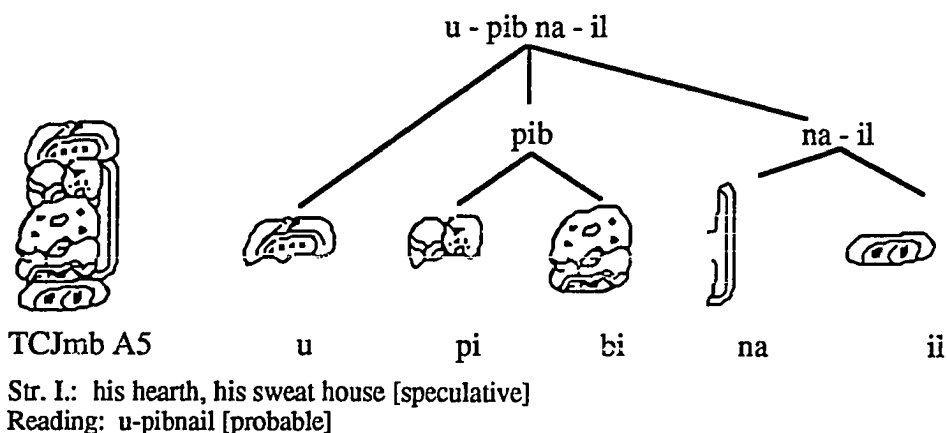
upib nail 'his sanctuary'

This glyph is part of a passage describing an event that occurred on 5 Eb 5 Kayab. It follows a 'house event verb' and what appears to be a proper name of a building. It occurs on an alfarda from the Temple of the Cross and an alfarda from the Temple of the Foliated Cross in addition to this example from the Temple of the Cross door jamb. (Schele 1987n:140). It is a possessed phrase, and due to the context the second word can be fairly certainly identified as *na*, the word for 'house, building', also used in the name of the Temple of the Inscriptions *ch'ul na*. Here it is followed by the suffix *-il*. In Chontal this suffix limits the referent of the noun to one specific possessed example (Knowles 1984:197). In all three examples the glyph is part of a couplet, the other member of which is *u ch'ich'il* 'his blood'.

In Yucatec *pib* is glossed as a 'horno subterráneo, barbacoa, baño a base de agua caliente y vapor de agua. . .' (Barrera Vasquez 1980:651), in English, 'underground oven; roasting pit; steam bath'. I have not been able to find the word in any non-Yucatecan sources.

upib nail 'his _'

(9.7)

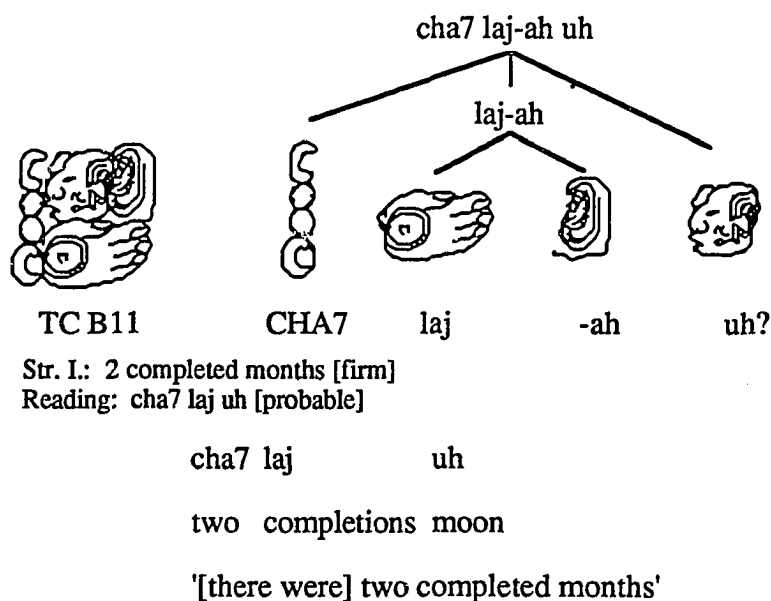


u-pib na-il
 3ERG-roasting pit, steam bath house-N SUF
 'his hearth, his sweat house'

9.3. Derived Nouns

There are a number of examples of glyphs which usually occur as verbs, but which are occasionally used as nouns. In the example below, the flat hand T713, which is usually read *laj* 'to finish', is used in a nominal construction. It is part of the lunar series which gives information about the moon. This glyph indicates that the second lunation (of a set of six lunations) has been completed.

(9.8)



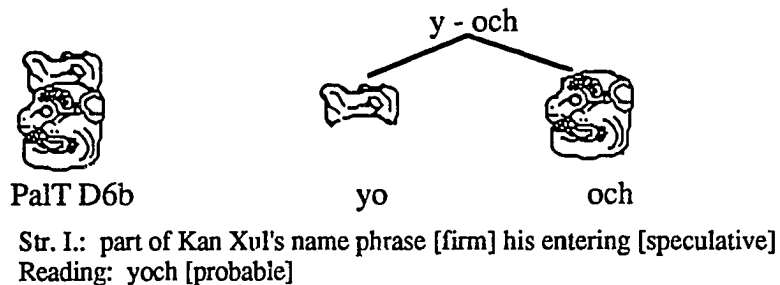
This example offers an interesting problem in deciding whether the number two modifies the entire phrase 'two completed months' or if it modifies only the moon, 'two moons were completed'. It is also not clear whether the moon sign T181 following the head of the 'moon goddess' is to be read /ah/ or if it simply signifies 'moon'.

The next example is preceded by an ergative third person marker. Since the root is

an intransitive verb, if it is verbal it would give support for those who look for nominative/accusative marking in a split ergative system. Because of the position of this verb as part of a name phrase, it is probably a nominal form here.

yoch 'his entering'

(9.9)

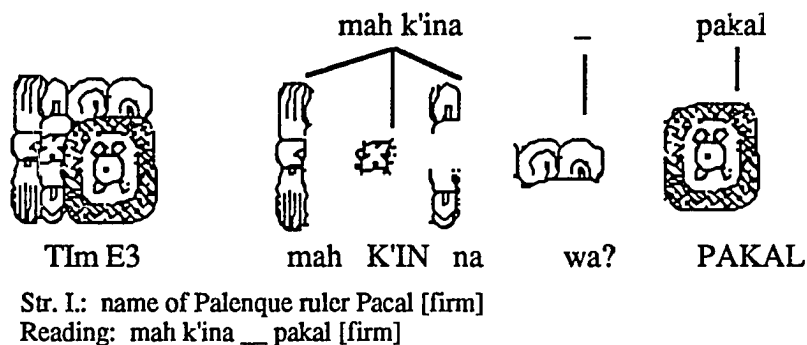


9.4. Names

There are many names in the hieroglyphic inscriptions. One of the most frequently found is that of Pacal. It is particularly interesting because of the variety of ways it was represented. The first example is preceded by the *mah k'ina* title, and gives the logograph for shield.

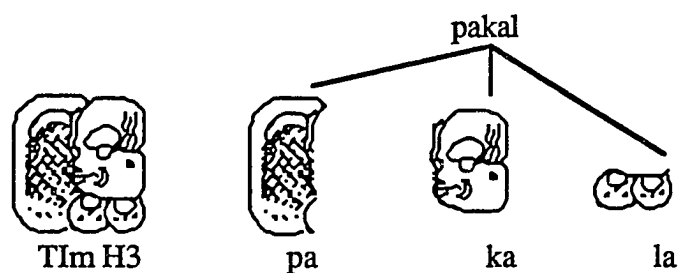
mah k'ina pakal 'Pacal'

(9.10)



The second example has syllabic signs to spell Pacal phonetically.

(9.11)

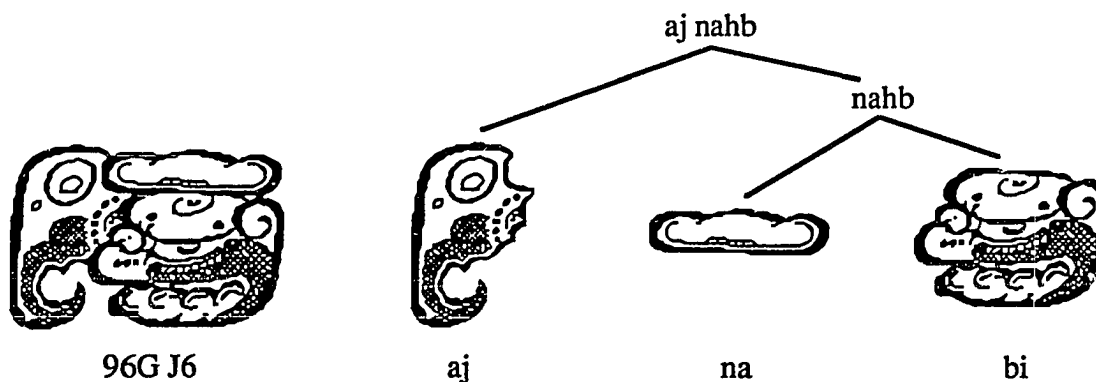


Str. I.: phonetic spelling of the name of Palenque ruler Pacal [firm]
 Reading: pakal [firm]

One of the titles which occurs in rulers name phrases at Palenque is *aj nahb*. It frequently occurs with the name of Chaacal, and sometimes as a title of Pacal. When it occurs with Chaacal's name it forms a couplet *aj chahuk, aj nahb*.

aj nahb 'he of the waterlily/sea'

(9.12)

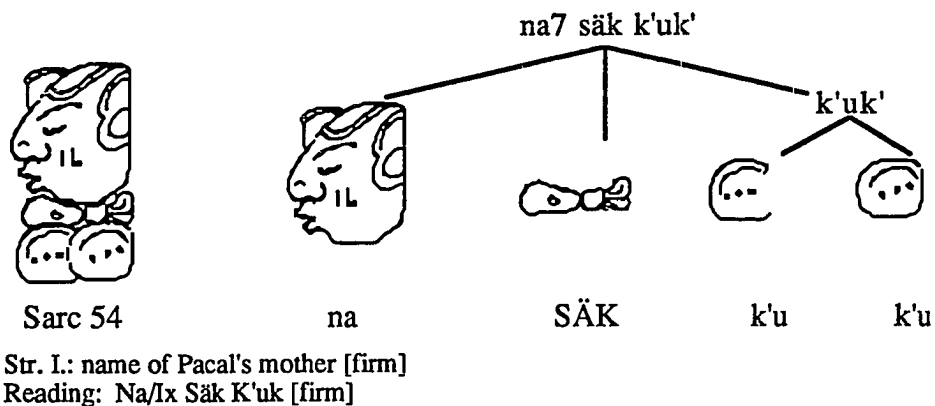


Str. I.: title of rulers, part of name of Chaacal [firm] 'he of the waterlily' or 'he of the sea' [firm]
 Reading: aj nahb [firm]

Women's names at Palenque are frequently, but not always, prefixed by the head of a woman. There are examples at other sites where phonetic signs for /na/ substitute for the female head suggesting that it was read *na* 'mother, woman'. However, at Palenque there is at least one example of the ancestral mother's name which is prefixed by /ix/ T126 (see the second example (9.13) below). It is possible that the female head was read *ix*, a female prefix found on women's names.

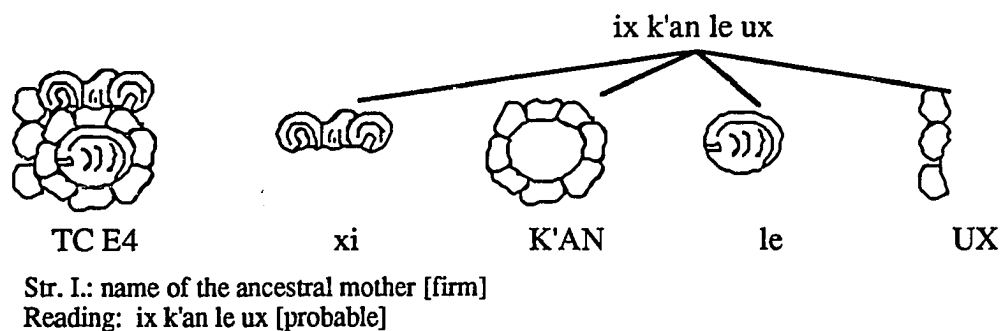
na7 säk k'uk' 'Lady White Quetzal'

(9.13)



ix k'an le ux name of the ancestral mother, 'Lady of the Precious Triad'

(9.14)

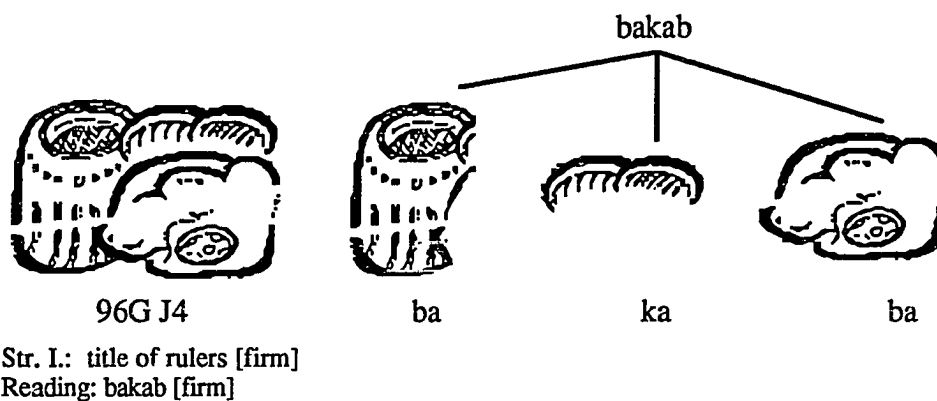


9.5. Titles

Several titles have already been mentioned. One of the most common at other sites, but only found a few times at Palenque, is the *bacab* title. It is associated with names of rulers, and was in use by Yucatec speakers at the time of the conquest. It could be a combination of *bah* 'first(born)' and *kab* 'land', meaning something like 'first of the land'.

bakab title

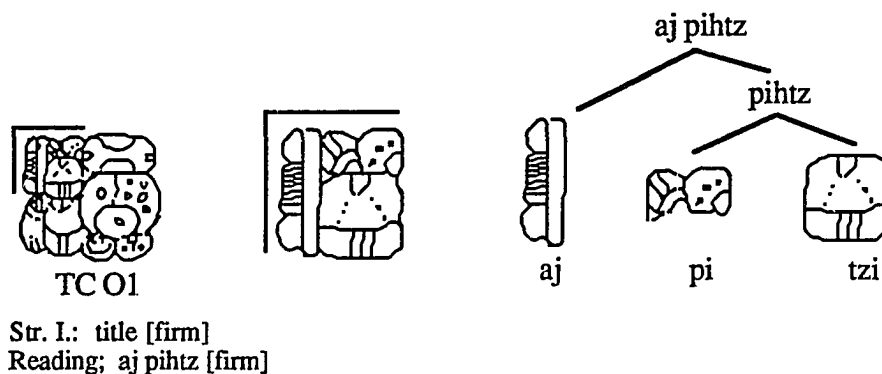
(9.15)



A number of titles are composed of the agentive prefix *aj-* and a noun, such as the three examples below, 'he of the ballgame', 'he of the mat', 'he of the five-doored temple' and the example 'he of the waterlily' given above. The agentive is not sex specific and can appear with titles of women as well.

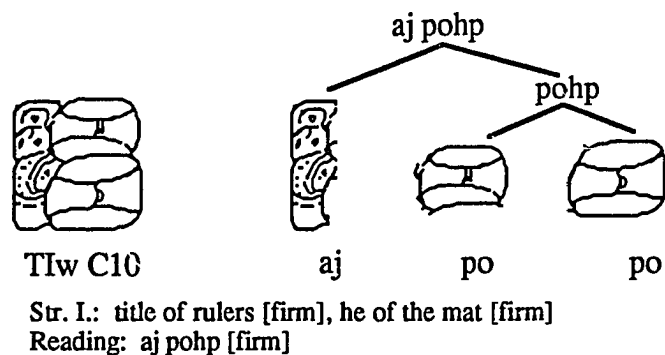
aj pihtz 'ballplayer'

(9.16)



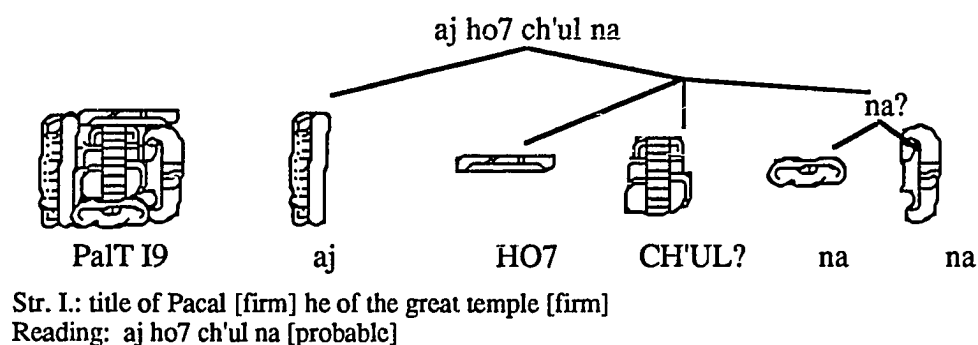
aj pohp 'he of the mat'

(9.17)



ah ho7 ch'ul na 'he of the five-doored temple'

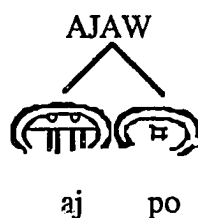
(9.18)



9.6. Emblem Glyphs

It is still a matter of debate whether the emblem glyphs are primarily site names or primarily lineage names. In either case, at Palenque there are three emblem glyphs which are phonetically equivalent. *Bak* may be the name of the Palenque lineage or the name of the site or both. The emblem glyph is composed of three parts, a 'blood' prefix (which lends support to those who see the emblem glyph as a lineage name), an *ajpo* prefix probably read *ajaw*,

(9.19)

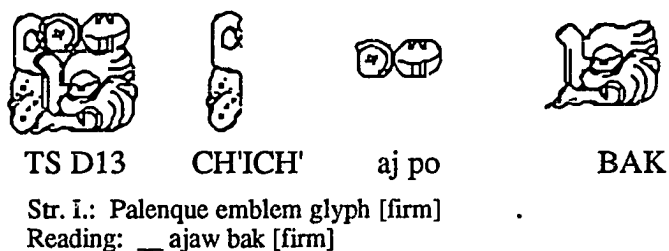


and a main sign which at Palenque is either a heron *bak*, a bone *bak*, or a skull *bak*.

Emblem glyphs usually occur as the last element in the name phrase of a ruler.

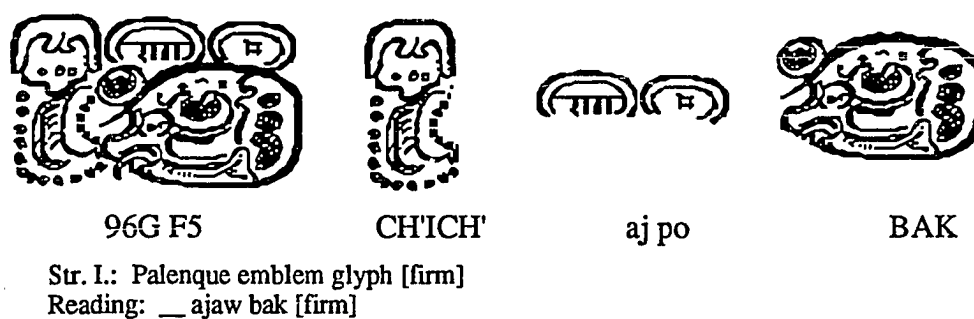
ch'ich' aj po bak 'of the royal blood (lineage) of *bak* (heron)'

(9.20)



ch'ich' aj po bak 'of the royal blood (lineage) of *bak* (skull)'

(9.21)

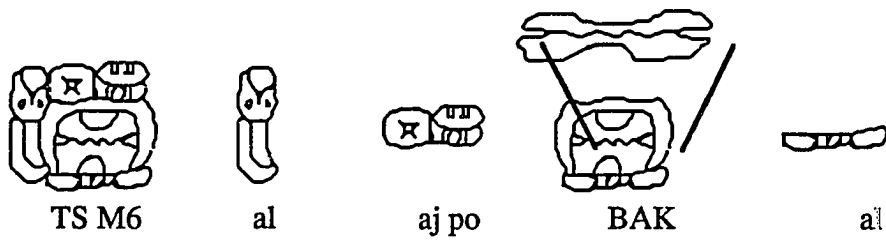


al aj po bakal 'child of the royal lineage of *bak* (bone)'

In this example the 'blood' prefix is replaced (or prefixed) by the phonetic

sign /la/. A word for 'child of woman' in proto-Cholan is *al.

(9.22)



Str. I.: Palenque emblem glyph [firm]

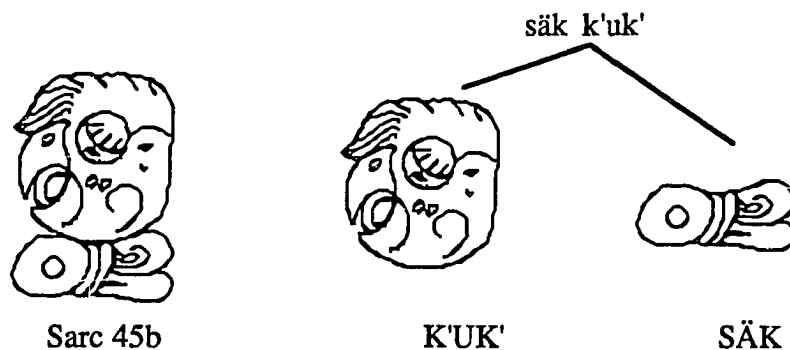
Reading: __ ajaw bakal [firm]

Chapter 10. Adjectives and Particles

10.1. Adjectives

In the Maya hieroglyphic texts most noun phrases are names. Consequently, most adjectives are found as modifiers in those names. Adjectives precede the noun they modify. The color 'white' is found in two women's names: the ancestral mother Sak Bak 'white heron, egret', and the mother of Pacal, Sak Kuk 'white quetzal'. Two versions of Sak Kuk's name are given below. Although the order of signs is reversed in Example 10.1, the expected reading order is confirmed by the phonetic spelling of the name in the second example.

(10.1)



Sarc 45b

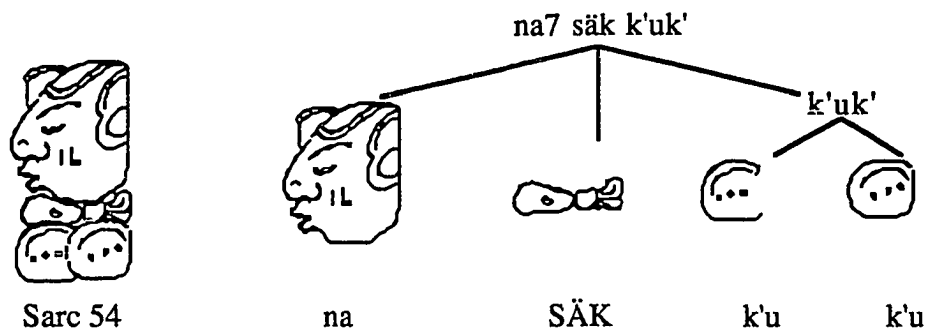
K'UK'

SÄK

Str. I.: name of female relative of Pacal (probably mother) [firm]

Reading: säk k'uk'

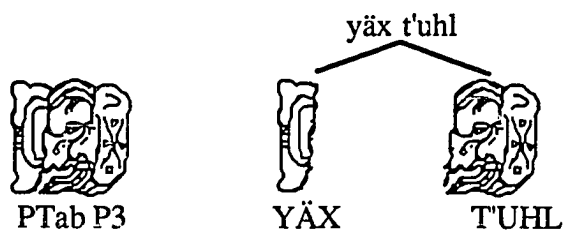
(10.2)



Str. I.: name of female relative of Pakal (probably mother) [firm]
 Reading: säk k'uk' [firm]

The adjective 'green', *yäz*, is prefixed to the name Yax Tul, in one of the names of Kan Xul.

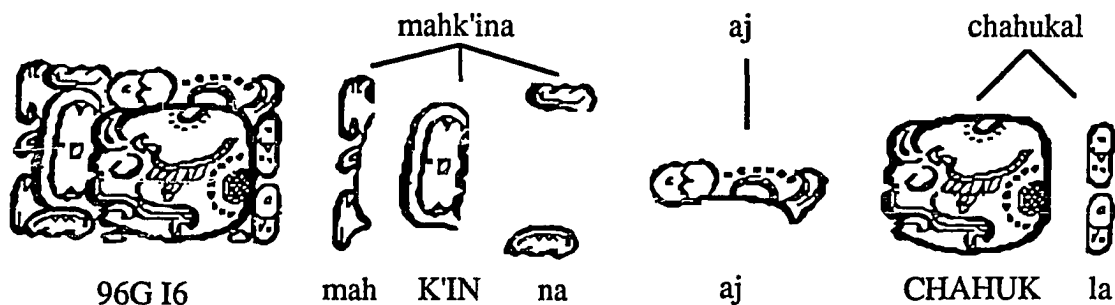
(10.3)



Str. I.: name or title [firm]
 Reading: yäch [firm] t'uhl [probable]

The adjective 'great' *mah* is part of the 'great sunlord' prefix found on the names of Palenque rulers. Below it precedes the first glyph in the two-part name *aj chahukal*, *aj nahb*, 'he of the storm, he of the waterlily (or sea)'.

(10.4)



Str. I.: name of ruler Chaacal [firm] with mah k'ina title [firm]
 Reading: mah k'ina aj chahukal [firm]

10.2. Particles

There are a number of particles in Palenque Mayan. These are words which are neither verb, noun, positional, nor adjectival roots, and which do not pattern as inflectional or derivational affixes. Unlike the roots just mentioned which are usually CVC syllables, particles may be CV or VC.

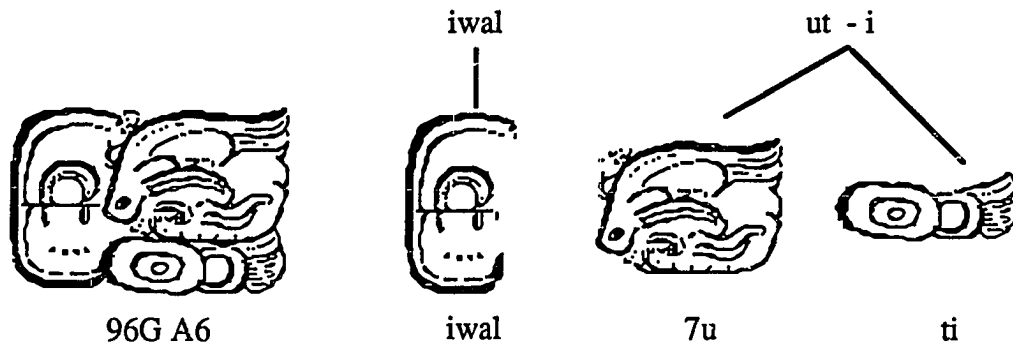
10.2.1. Temporal Particles

The word *iwäl* has been proposed for the logographic meaning of the sign T679 by Justeson (1984:350), based on its phonetic value /i/, which is given in Landa's alphabet, and on its function as a posterior date and event indicator (in the glyphic texts it introduces dates and events which are later than a previously given date or event), a function which is consistent with the function of cognates of this word in Cholan languages.

The proto-Cholan form is *wäl (Kaufman & Norman 1984:139) and is glossed as 'now, today' and as the progressive aspect marker. The progressive aspect marker in modern Chol is *woli*. In Acalan Chontal the word <yuual> is a conjunction meaning 'then' (Smailus 1975:179). The cognate in Cholti is <yual>. Moran (1935:9) notes that <yual> can precede verbs in the present or the past tense. The Chorti form is *war*. The word *yuwa* glossed as an idiom 'there is' in modern Chontal (Knowles 1984:481) may be yet another cognate. There are a few examples of *iwäl* being spelled out with phonetic signs in glyphic texts at sites other than Palenque, which further supports the notion that the actual logographic reading is *iwäl*.

In example (10.5) *iwäl* precedes the intransitive verb *ut* which is in the completive aspect.

(10.5)



Str. I.: conjunction, verb [firm]
 Reading: iwal [probable] uti [firm]

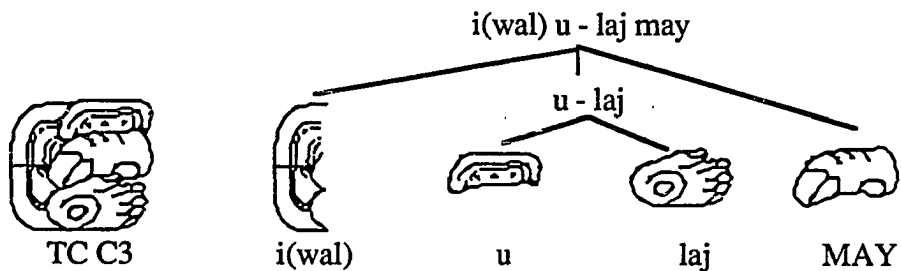
iwal ut-i

CONJ happen-CMP

'and then (until) it happened'

In example (10.6), *iwal* precedes the transitive verb *laj* in the expression 'she ended the may'. This verb does not appear to be inflected for aspect, but it is clear that it is an event that took place in the past, and it immediately follows a birth verb which is inflected.

(10.6)



Str. I.: period ending event [firm]
 Reading: i(wal) ulaj [probable] may [firm]

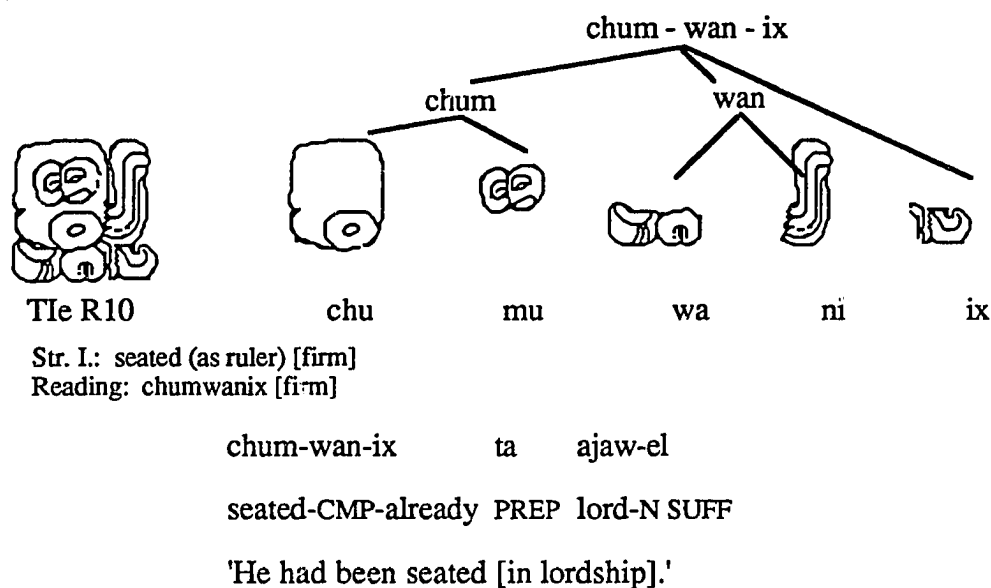
i(wal) u-laj may

then 3ERG-end count of 13

'... then she ended the count of 13 (baktuns)'

The enclitic particle *-ix* is found frequently in the texts. It can be joined to a verb, a noun, or a calendrical sign. It has the meaning 'already'. In the example below it follows the positional *chum*. It has the effect of changing a completive aspect verb to a past perfect, that is, changing 'he was seated' to 'he had already been seated'.

(10.7)



10.2.2. Locatives

Figure 10 below shows eight different signs which are used as locative prepositions and complementizers. At the site of Palenque all of these are used in both capacities, except for T59, the most common locative particle at other Maya sites. At Palenque T59 is used almost exclusively as the phonetic sign /ti/, for example, in the spelling of *iwal uti* and *otot*. T102 usually has the phonetic value /ki/. T90 is the phonetic sign /tu/ and is used to spell the combination of *ti + u*. The other signs, T51, T103, T113, T245a, and T565 are used at Palenque as the syllable /ta/ to spell the locative preposition *tā*.

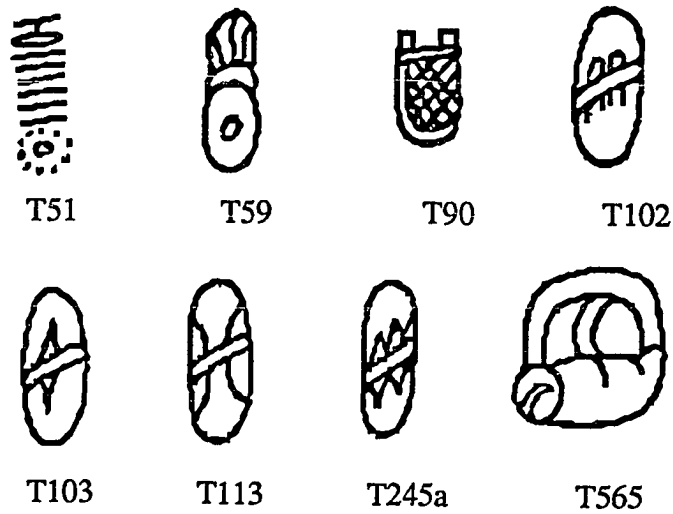
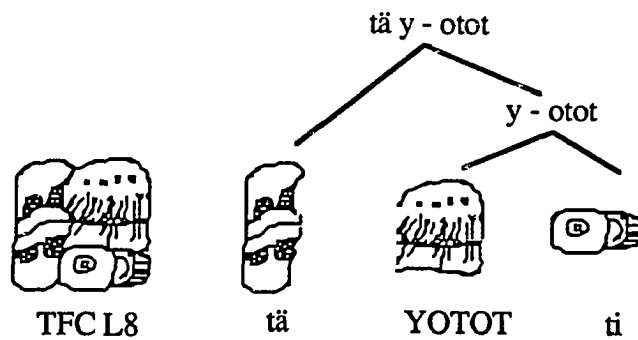


Figure 10.1. Prepositions.

Two examples of the locative *tä* are given below. The first is the phrase 'in his house':

(10.8)

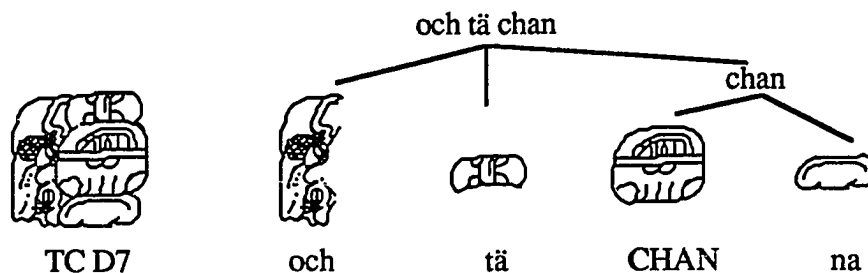


tä y-otot
 PREP 3ERG-house
 'in his house'

The second example is a sentence, 'he enters into the sky'.

.....

(10.9)



och-Ø tä chan
 enter-3ABS PREP sky
 'He enters into the sky.'

The locative is also used in accession phrases in the sense of 'he was seated in rulership' or 'he was seated as lord'.

(10.10)

Tle K2-K5



lajchän wa? chänläjun uinil-ix bolon tun-ix chum-wan-ix tä ___-an na wa7ik'al ajaw bak
 12 days 14 uinals-___-already 9 tuns-already seated-CMP PREP ___ lady kanikal ajaw

Palenque

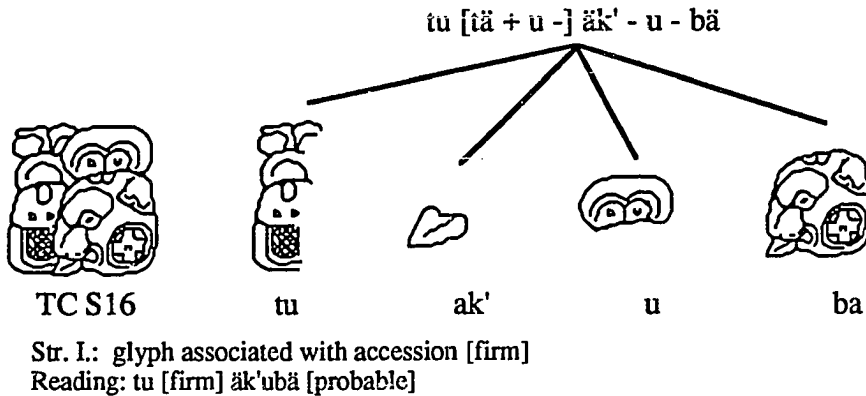
'It had been 12 days, 14 uinals, and 9 tuns since Lady Kanal Ikal, Ajaw of Palenque had been seated as ruler'

10.2.3. Subordinators

At many Maya sites there are subordinate phrases introduced by T59, the particle *ti*. At Palenque these constructions are composed of the jog glyph (the gopher head, T757) or

an equivalent, which is preceded by the syllabic sign /tu/ believed to stand for the particle *ti* or *tä +u*. The first example is an orthographic tree of the glyph block containing the phrase 'by his bloodletting'. The second example is a similar glyph block in the context of the clause in which it occurs.

(10.11)



tä-u-äk'-Ø

u-bä

PREP-3ERG-give-3ABS 3ERG-RFL

'by his offering himself', 'by his bloodletting'

(10.12)

TC P14-Q16



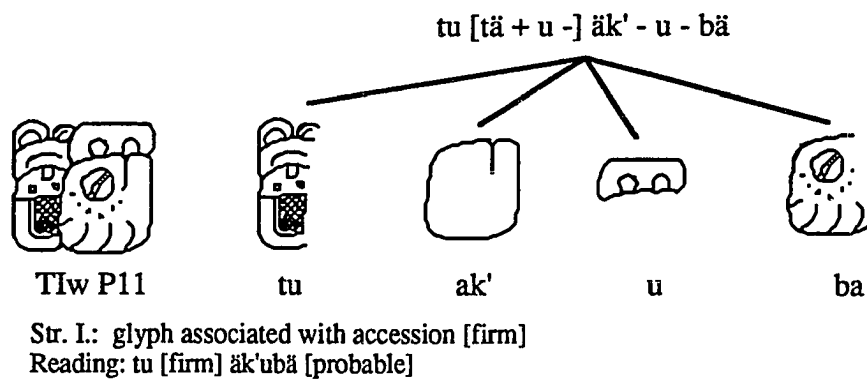
cha7 kaban läjun __ ux wäk uinal-ix säk laj uinik tä+u-äk' u-bä ch'a__

2 Caban 10 Xul 3 [days] 6 uinals white __ man CML-3ERG-give 3ERG-RFL Casper

[when on] 2 Caban 10 Xul, 3 days and 6 uinals [before the 9th baktun, 9.0.0.0.0], Casper had acceded by his offering himself.'

The phonetic substitutions in Example 10.13 support the proposed reading of the T93.757 compound.

(10.13)



tä u-äk-u-bä

tu äk-u-bä

CML 3ERG-give-3ERG-RFL

'by his offering himself'

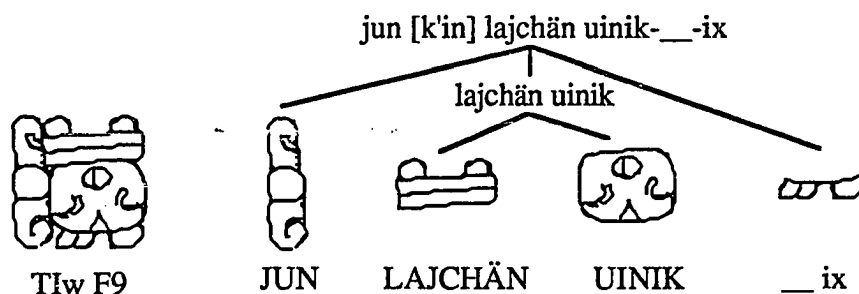
Chapter 11. Numerals

11.1. Cardinal Numerals

Calendrical information comprises a large portion of the content of the Palenque inscriptions. Numerals are represented representationally by circles for units one through four, and by bars, each representing five. The 'bars and dots' function as logographs when they represent the sounds of the numbers, and as such, are used in the writing system to represent other words having the same sounds. See, for example, the use of 'one' *hun* in the 'child of mother' glyph for the sound /hu/ (Section 5.1.5).

The first example is a distance number indicating the numbers of days (1) and the number of uinals (12x20 days) to be added to one date to arrive at another. Sometimes a sign for 'days' is given, but most commonly it is omitted, with the first number being understood to give the number of days, and the second one only accompanied by a period sign.

(11.1)

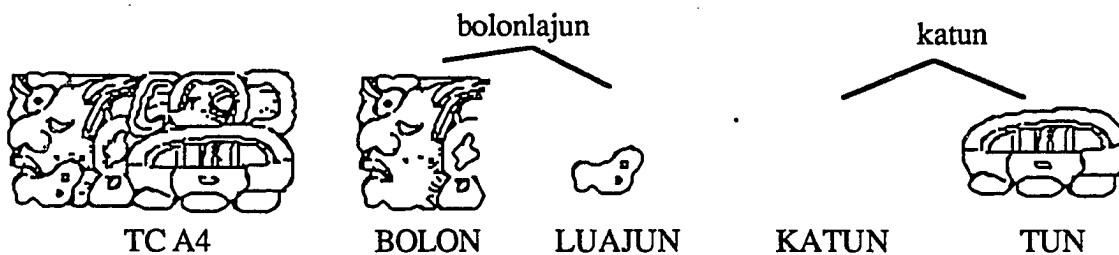


jun [k'in] lajchän uinik ? -ix
 1 day 12 uinals ? already
 '[It was] 1 day and 12 uinals. . .'

Mayan numerals can also be represented by head variants. In Macri (1982, 1985a) I demonstrated that phonetic elements on these heads give clues (not exact phonetic spellings) to the sounds of the numbers in Mayan languages. Numbers 1 through 13 are represented by unique head variants. Numbers 14 through 19 (and some examples of 13) are represented by combinations of the numbers 3 through 9 combined with a skeletal jaw bone representing the skull which is the head variant of the number 10.

The example below is the head variant for 19 prefixed to the katun sign. It occurs as part of a date, and means 19 katuns, 19 periods of approximately 20 years, or about 380 years. The face has a yax sign on the forehead and markings of a jaguar pelt on the cheek. The jaguar markings are partly covered by the skeletal jawbone.

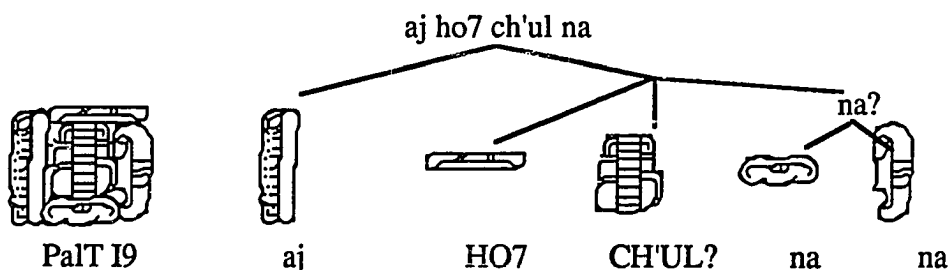
(11.2)



Numerals can also occur as parts names, as in the title of Pacal below. He is named as 'He of the 5 temple', presumably referring to the Temple of the Inscriptions, which has five doorways at the top of the stairs, just where the bar for 5 is placed.

ho7 'five'

(11.3)

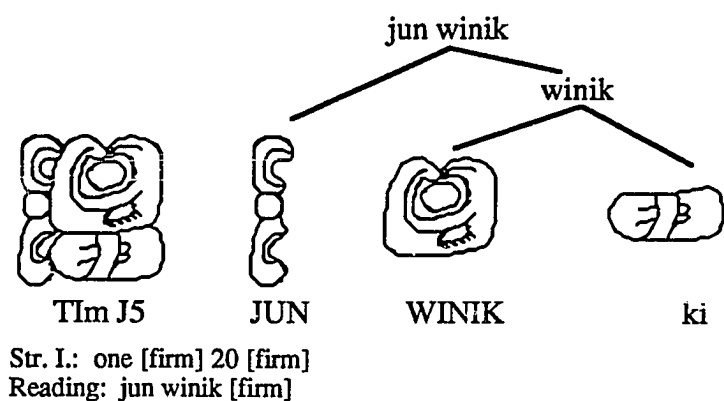


Str. I.: title of Pacal [firm] related to the Temple of the Inscriptions [firm]
Reading: aj ho7 [firm] ch'ul [speculative] na [firm]

aj ho7 ch'ul na
 AGN five temple building
 'he of the five [door] temple'

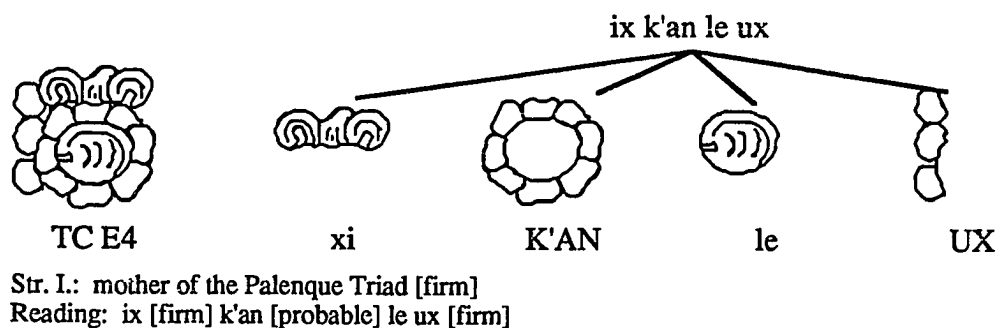
jun 'one'

(11.4)



ux 'three'

(11.5)



ix k'an le ux

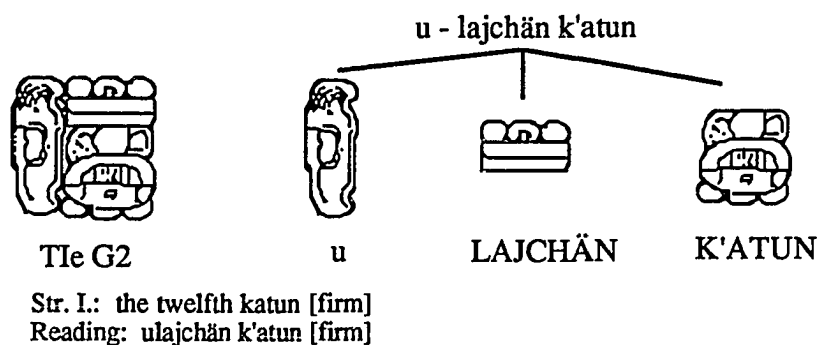
FEM precious lineage three

'Lady/Mother of the Precious Triad Lineage'

11.2. Ordinal Numerals

Ordinals are formed by prefixing the ergative third person marker to a number, as in the example below.

(11.1)



u-lajchän k'atun

3ERG-twelve katun

'the twelfth katun'

A slightly different construction is used for 'first' when the word *bah* 'first', which is not a numeral, occurs. In this expression the *u-* prefix is a possessive marker.

(11.2)



u-bah u-unen na __ ajaw na kahäl ko (?)

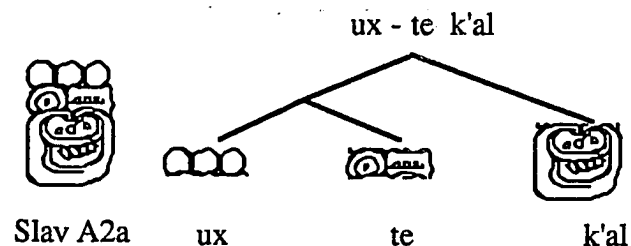
3ERG-RFL 3ERG-child Lady Men Ajaw Lady Cahal

'her firstborn, her child, Lady Men Ahau, Lady Cahal.'

11.3. Numeral Classifiers

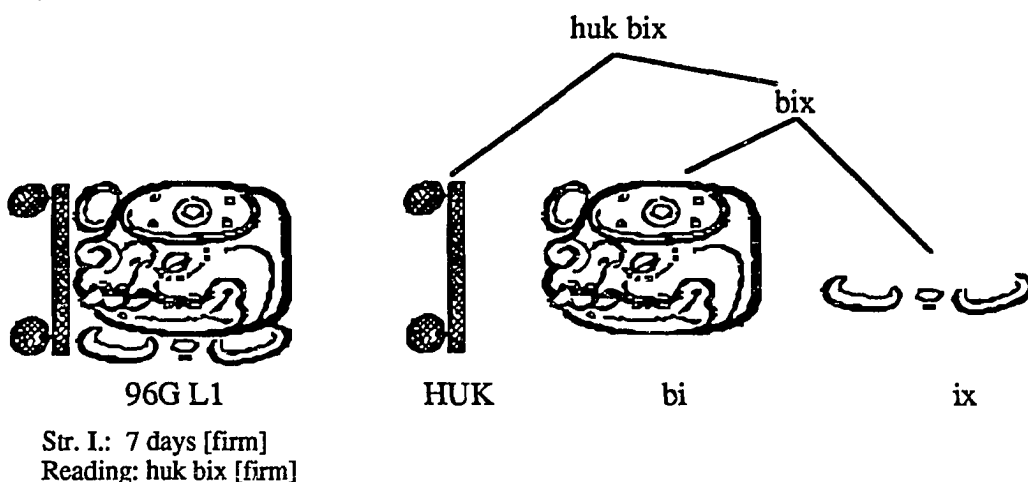
Numeral classifiers are obligatory in many of the modern Tzeltalan and Yucatecan languages, although since the time of Western contact, their use, as well as their variety, in Yucatecan and Cholan languages has diminished, along with the use in some of those languages of any Mayan numbers, or any Mayan numbers over three or four. Numeral classifiers do not occur with any regularity in the hieroglyphic script, but they are found from time to time. Of those that are recognized, there are probably not more than three or four. One of the most common is the classifier *te*, used to count years and days (Thompson 1950:54). It is given in the example below.

(11.3)



Bix is a classifier used in count of days with the numerals five and seven (Thompson 1950:174). It is used in this case to indicate the passage of seven days.

(11.4)



It is a matter of some debate whether numeral classifiers were widely used by Classic Period speakers, and whether their absence in most of the hieroglyphic texts reflects their absence in speech. Any hieroglyphic sign which follows a number should be investigated for the possibility that it is a classifier. The time frames and the location of occurrences of particular classifiers need to be recorded and compared. If, as seems to be the case, most of the few classifiers we recognize occur sporadically throughout the Maya Lowlands, then I would suspect they were morphemes that were present in speech, but so automatic and predictable that it was not considered necessary to represent them graphically.

Part III. Syntax

Chapter 12. Basic Order of Constituents

This chapter is a very brief discussion of the basic order of sentence constituents in the Palenque texts. Certainly this topic could be the subject of a dissertation in itself. Some of the topics discussed here have been dealt with in more detail in other parts of this work.

12.1. Verbs

12.1.1 Intransitive

In clauses containing an intransitive verb, the word order is VS (verb, subject). The sentence below contains the intransitive verb 'be born' which is followed by the subject, a ruler nicknamed Casper. Time adverbials occur at the beginning or, less often, at the end of a sentence.

(12.1)

TC P10-Q11



buluch __ wäk __ __-ah-Ø-ix ch'a__

11 Lamat 6 Zul born-__-3ABS-already Casper

'On 11 Lamat 6 Zul Casper had been born.'

12.1.2. Transitive

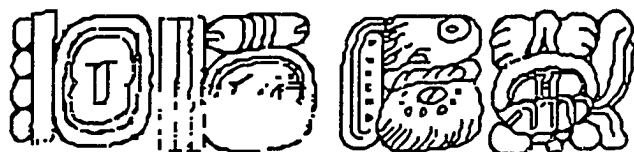
The basic word order of a transitive expression in Palenque Mayan is VOS (verb, direct object, subject). The first line of the example below contains a transitive expression

'to see the earth' which is a metaphor for 'be born'. The second line of the example contains what may be two transitive verbs, the first a reflexive, 'to offer oneself', and the second one unknown except that it appears to be the 'bloodletter' and is associated with bloodletting.

(12.2)

TC E1-F4

TC E1-F2



bolon ik' ho7läjun ___ y-ila kab mah ___

9 Ik 15 Ceh 3ERG-see earth great ___

'On 9 Ik 15 Ceh the divinity (?) [GI] saw the earth.'

TC E3-F4



u-äk-u-bä u-___ säk k'uk' ix k'an le ux na

3ERG-offer-3ERG-RFL 3ERG-___ Sak Kuk Lady Precious Lineage 3 Mother

'Sak Kuk, Lady Mother of the precious Triad lineage offered herself, let blood.'

12.1.3. Stative Predicates

There are a number of stative expressions in Palenque Mayan. One is the naming expression in which a proper name is followed by *u k'aba* 'his, her, its name'.¹ The normal pattern for a possessive phrase is possessive person marker + possessed followed by the possessor. In phrases with *u k'aba* the name (the possessor) comes before the

possessed 'his name'. This suggests that the construction is best described as a stative: 'Its name is. . .'. The lunations are named in this fashion, as are houses and temples. The example below is from a lunar series.

(12.3)

PTab A16-B17



laj u-cha7 uh __ u-k'aba k'albolon

end 3ERG-2 moon __ 3ERG-name 29

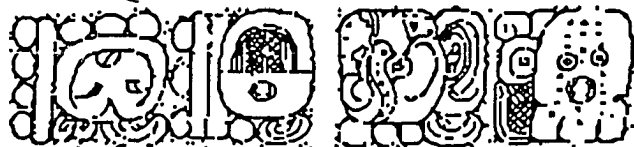
'The second lunation ends. __ is its name. It is 29 days long.'

12.1.4. Embedded Sentences

There are a number of examples of embedded sentences at Palenque, one of which occurs fairly frequently. It is the accession phrase 'he became Sak Uinic by his offering himself'. *Sak laj winik* is given in Barrera Vasquez (1980:709) as 'hombre de rostro blanco', 'man with a white face'. 'White' can also be used for 'bright, illustrious'. The embedded sentence, which is in the second line of the example, is introduced by the complementizer represented by /tu/, a combination of *tā* and the ergative person marker *u*. For a more detailed discussion of this phrase see Chapter 14.

(12.4)

TC P12-Q13



bolon ux uinal-ix uxläjjun tun __-ah-ix ch'a__

9 [days] 3 unials-already 13 tuns born-__-already Casper

'It had been 9 days, 3 unials, and 13 tuns since Casper had been born'

TC P14-Q16



cha7 kaban läjun ___ ux wäk uinal-ix säk laj uinik tä+u-äk' u-bä ch'a___

2 Caban 10 Xul 3 [days] 6 uinals white ___ man CML-3ERG-give 3ERG-RFL Casper
[when on] 2 Caban 10 Xul, 3 days and 6 uinals [before the 9th baktun, 9.0.0.0.0], Casper
had acceded by his offering himself.'

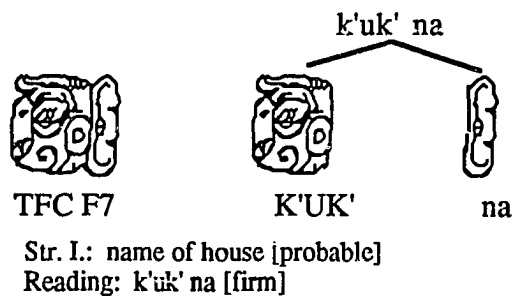
12.2. Noun Phrases

12.2.1. Genitive Constructions

In the following example the 'house of Kuk' is not a possessive phrase, but is rather a genitive construction, with the modifier given first. As a possessive phrase it would be 'his house, Kuk'. Here the two words are simply juxtaposed.

(12.5)

k'uk' na 'quetzal's house'



12.2.3. Possession

As noted above, the typical pattern for possession is the ergative person marker on the noun followed by the possessor. Child of parent phrases follow this pattern: HIS CHILD, NAME OF FATHER; HER (FIRSTBORN) CHILD, NAME OF MOTHER. In the first example below, the cycle and blood are the subjects, and the possessor is the name of the

ruler. This expression is repeated several times on the east panel of the Temple of the Inscriptions.

(12.6)

Tle K7-K9



xi-k'a-wa u-__ u-ch'ich'il na wa ik'al ajaw bak

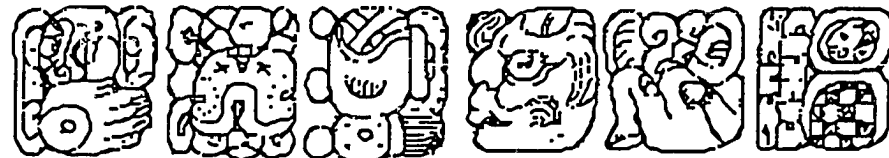
FUT-remember-PASS 3ERG-blood-N SUF lady kanal ikal lord of Palenque

'The cycle and the blood of Lady Kanal Ikal, lord of Palenque will be remembered.'

In the next example, (2.7) - (2.8), the names of the triad are given, followed by a 'parentage' expression in which Pacal is named as a parent of the gods.

(12.7)

TIm F4-E7



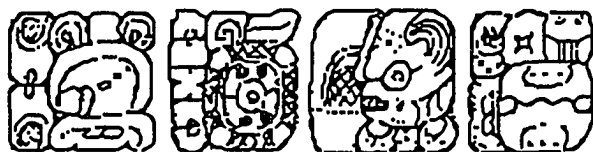
u-laj __-na jun __-la? ux _____-ti GI GII GIII

3ERG-end __ one __ three __ GI GII GIII

'The Triad, GI, GII, GIII ended the __,'

(12.8)

TIm F7-E9



u-unen mah k'ina wa pakal ajaw bak

3ERG-child geat sunlord pacal lord Palenque

'the children of great sunlord Pacal of Palenque.'

The next example is rather long, but it is useful because it gives the name phrase of the ruler Bahlum Kuk and names both of his parents. Here the *unen* glyph is preceded by the head of the gopher, *bah*, which means 'first(born)'. It is a couplet of possessed nouns: 'her firstborn', 'her child'. Notice in the example of the Triad the *bah* element is missing because the 'children' are plural, therefore 'firstborn' would be inappropriate.

(12.9)

96G I2-K1



bak le bahlam ajaw ah pitz lawa? ix ajaw mah k'ina bahlum k'uk'

bak le bahlam ajaw, he of the ballgame, ajawte, great sunlord Bahlum Kuk

'TITLE, he of the ballgame, ajaw TITLE, great sunlord Bahlum Kuk'



na? k'atun ajaw bakab

one (?) katun ajaw, bacab

'one (?) katun lord, bacab'



u-ajawel __ u-__-na

3ERG-child of father __ 3ERG-__

'his child, his blood?.'



mah k'ina aj chahuk aj nahb ajaw bak

great sunlord he of the storm he of the waterlily lord Palenque

'great sunlord Chaacal (he of the storm), he of the seas (or waterlily), ajaw of Palenque'



u-bah u-unen na __ ajaw na kahal ko (?)

3ERG-RFL 3ERG-child Lady Men Ahaw Lady Cahal

'her firstborn, her child, Lady Men Ahau, Lady Cahal.'

This last example of 'child of parent' expressions gives the mother and father of Pacal.

(12.10)

PTab C12-D16



mah k'ina pakal aj pitz ajaw bak ajaw bak

great sunlord Pacal AGN ballgame lord Palenque lord Palenque

'... great sunlord Pacal, he of the ballgame, lord of Palenque (heron), lord of Palenque

(skull)'



u-bäh u-unen tä ch'ich' na __ __ ch'ich' na ajaw __

3ERG-RFL 3ERG-child PREP blood lady __ __ lady Ahpo Hel

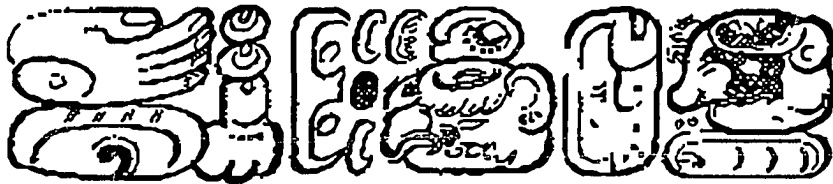
'her firstborn, her child by her blood Lady Ahpo Hel.'

12.3. Prepositional Phrases

There are a number of examples of prepositional phrases at Palenque. Some are locational, but most designate the seating of a ruler 'in office' as in the examples below. For a discussion of prepositionals see Chapter 13.

(12.11)

96G H8-J1



__ u-jun katun ta ajawel

complete 3ERG-one katun in rulership

'his first katun in rulership was completed'

(12.13)

T1e K2-K5



lajchän wa? chänläjün uinil-ix bolon tun-ix chum-wan-ix tä __-an na wa7ik'al ajaw bak

12 days 14 uinals-__-already 9 tuns-already seated-CMP PREP __ lady kanikal ajaw

Palenque

'It had been 12 days, 14 uinals, and 9 tuns since Lady Kanal Ikal, Ajaw of Palenque was seated as ruler'

12.4. Time Adverbials

Calendrical information is the framework upon which the Palenque texts are built. Calendrical information is usually given at the beginning of a sentence, but it sometimes

occurs at the end. It is given as the subject of a sentence when a time period is the subject of an intransitive verb, as in 'the year was seated' or the object of a transitive verb, 'she ended the year'. The first line of the example below (12.14) has calendrical information at the beginning. In the second line of the example (12.15) (these are consecutive sentences), the 5 Ahau katun is named as the object of the transitive verb.

(12.14)

T1e K2-K5



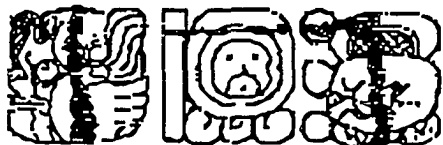
lajchän wa? chänläjun uinil-ix bolon tun-ix chum-wan-ix tä ___-an na wa7ik'al ajaw bak
12 days 14 uinals-___-already 9 tuns-already seated-CMP PREP ___ lady kanikal ajaw

Palenque

'It had been 12 days, 14 uinals, and 9 tuns since Lady Kanal Ikal, Ajaw of Palenque was seated as ruler'

(12.15)

T1e L5-L6



u-laj tun ho7 ajaw ux ch'en

3ERG tun 5 Ahau 3 Ch'en

'until she ended the tun 5 Ahau 3 Ch'en.'

Notes for Chapter 12.

¹ The reading of *u k'aba* 'his name' for the sky elbow glyph has been suggested independently by David Stuart and Judith Maxwell, though nothing has yet been published. In terms of context it seems appropriate since it follows proper names of objects such as lunations and ceremonial buildings. Graphically it has all the phonetic components to spell *u k'aba*'.

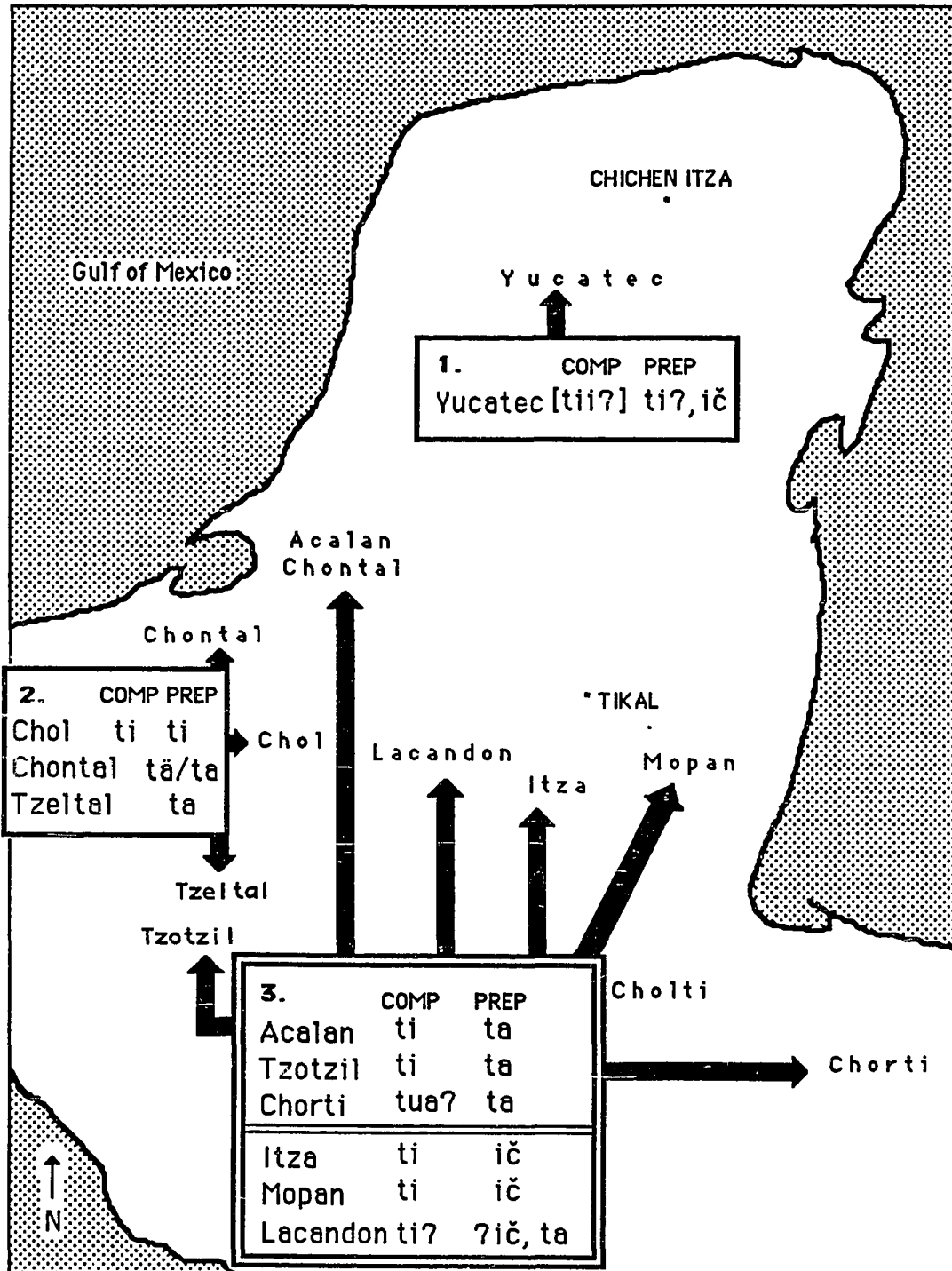
Chapter 13. Prepositions and Complementizers in the Hieroglyphic Texts

This chapter departs from the previous format, which has been limited to discussion of linguistic characteristics of Late Classic Palenque Maya.¹ In this chapter I will describe a problem regarding the phonetic reading and the syntactic function of a set of particles, and show how this problem is solvable when each potential language/dialect is treated independently. When data from each group have been adequately described, relevant comparisons between the groups can be made. In the Mayan language groups most relevant to hieroglyphic studies, the Yucatecan and Greater Tzeltalan families, there is a set of particles *ti*, *ti7*, *ta*, and *tä*, which are used variously as prepositions and complementizers. The first step in this analysis of these particles is to describe their functions across languages.

Both complementizers and prepositions introduce constituents which are in an oblique relationship to the main verb of the sentence, that is, that what follows them is neither a subject nor a direct object of the main verb, but is related to it indirectly. The difference between them is that complementizers introduce embedded sentences, and prepositions introduce noun phrases.

13.1 Complementizers and Prepositions in Mayan Languages

Figure 13.1 is a map of the Maya area which contains a table of complementizers and prepositions in various Mayan languages. The table represents a simplification of the actual situation which for some languages is more complex. I have not listed every complementizer nor every preposition, only those that are most common, and that are



Map 13.1. Prepositions and Complementizers in Yucatecan and Greater Tzeltalan Languages.

related to this discussion. In addition, the words given as complementizers often have certain non-locative prepositional functions.

In both modern and Classical Yucatec *ti7* is a general preposition with a number of functions, including locative: *té7 ti7 a k'aano7* 'there in your hammock'; time: *oxlahunte ti katun* '13 katuns'; substance: *ti7 che7* 'with wood'; source: *ti7 in-maamah* 'from my mother'.

The particle *tii7* 'entonces' (then) is uncommon in modern Yucatec, but is used as a complementizer in the following example from the Book of Chilam Balam of Chumayel (Roys 1933:49):

Tii ualac u u cutob, oxlahun cut-hi u cutob lae.

While they were settled, thirteen were their settlements.

In Chol the particle *ti* which can be used as either a preposition:

7i mi k'otel ti yotot

He went to his house (Cruz G. et al. 1980:117)

or a complementizer:

Che7 wolis i kax ti tik'an

When it begins to cook.

It is significant that of the two languages most commonly cited in glyphic studies, Chol and Yucatec, Chol does not differentiate between the two functions of complementizer and preposition, and modern Yucatec does not typically use a complementizer at all. Furthermore, in Classical Yucatec the difference between the complementizer *tii7*, and the preposition *ti7* is one of vowel length, a phonetic distinction which has not yet been observed in the hieroglyphic writing system.

Modern Chontal and Tzeltal have *tā* and *ta* respectively used only as prepositions. They do not have complementizers as such, thus the particle which is cognate with *ti* in Yucatec and Chol has only a single function.

The third language most commonly referred to in relationship to the hieroglyphic script is Acalan Chontal, known from a 17th Century document (Scholes & Roys 1968).² The Acalan document has both *ti* and *ta*. According to Smailus (1975:216) *ti* and *ta* are probably in free variation, and he glosses them both as 'en, a, hacia'. However, upon more careful examination, a distinction in functions can be observed (see Table 13.1). Of 127 occurrences, *ta* is followed by a geographical place name 50% of the time, by locations, such as 'on the road', 'in the canoe', in 13% of the examples. *Ta* is followed by possessed body parts, in typical Mayan relational noun constructions, 9% of the time. All of these are locative expressions, and they account for 75% of all occurrences.

<u><i>ta</i> FOLLOWED BY:</u>		<u>TIMES</u>	<u>%</u>
geographical place names	LOCATIVE	64	50%
locations	LOCATIVE	16	13%
relational noun constructions	LOCATIVE	12	9%
TOTAL LOCATIVE			<u>72%</u>
time expressions	TEMPORAL	16	13%
name of office	STATUS	9	7%
manner of speaking, writing	MANNER	6	5%
undetermined		5	3%
TOTAL		<u>127</u>	<u>100%</u>

Table 13.1. *Ta* in Acalan Chontal.

There is one occurrence of *ta* cited by Mathews and Justeson (1984:190) as a complementizer:

koti **ta** tectelob ta tuxakhaa (Smailus 1975:47)

They went **to** establish themselves at Tuxakha.

However, of 15 occurrences of *k'oti* in the Acalan document, it is followed by *ta* 8 times, but in other instances of it, *ta* introduces a location or an expression of time. Although *ta* does appear here where one would expect a complementizer, it may be that its presence is dictated by the fact that the verb *k'oti* 'arrived' is a verb of motion and is thus frequently followed by the locative *ta*, since *ta* is not used anywhere else as a complementizer.

The remaining uses of *ta* include time expressions, such as 'in January'; manner of speaking or writing, for example, 'in writing'; status in phrases such as 'as lord' ('in rulership'), 'as governor'; and three instances of undetermined uses. In Acalan Chontal, then, *ta* can be characterized primarily as a locative preposition with several other specific uses.

There are far fewer examples of the particle *ti*, only 15, but the uses are varied and more complex. Twice it is used with numbers, once in a partitive construction following a number in '50 *ti* soldiers', and once before the number '*ti* 80 people'. *Ti* is also used before the word 'cacao' in *chol pakal yithoc utz ti cacau*, literally 'field(s) cultivated and good with/of cacao'. *Ti* is also used as a benefactive 'for someone'. Most significantly, *ti* is used several times before a verb or verbal noun to introduce a dependent clause:

utz xach ti bix ic on (Smailus 1975:53)

'it is good **that** I go'

ti y - ol Dios (Smailus 1975: 75)

'as God wishes'

utz ti ta - c - than cut - lec - et - ix (Smailus 1975:78)

'it is good **that**, in my words, you return. . .'

There are only two examples in which the functions of *ti* appear to overlap with *ta*, that is, twice following *ui* 'here' before the word *cah* 'town' and once before *cab* 'land'.

A contrasting pair is given below:

ui ta cah Tixchel (Smailus 1975:23)

ui ti cah Tixchel (Smailus 1975:111)

Presumably both expressions mean 'here in the town of Tixchel'. Either the two particles are indeed used here in free variation, or there is a scribal error, or there is a difference in meaning that, lacking sufficient contexts and any native speakers, it is beyond our capabilities to discover.

What emerges from this discussion is that the two particles do indeed have different primary functions, *ta* as a locative, and *ti* as a complementizer and non-locative preposition. We find, then, that Acalan Chontal made a distinction between the two functions in contrast to a lack of distinction in Chol and Yucatec. Moreover, when the other Yucatecan and Cholan languages are examined this distinction proves to be present in a majority of the Lowland languages.

Chorti differentiates between the two functions of preposition and complementizer. As in Acalan Chontal, the preposition is *ta*. The complementizer, *tua7*, may not be phonologically cognate with the *ti* complementizer in other languages, but it does serve to make the same distinctions between the two types of particles.

In modern Tzotzil there is also a clear distinction between the functions of *ta* and *ti*. *Ta* is glossed by Laughlin (1975:327) as a preposition meaning 'among, as, at, before, by, from, in, to'. In other words, it functions as a locative preposition with a number of other functions, similar to *ta* in Acalan Chontal. *Ti* is a particle meaning 'the, that, the fact that', that is, it introduces complement clauses, and indicates certain other oblique relationships, as does *ti* in Acalan. (There is at least one other complementizer in Tzotzil, *li*, but that does not concern us here).

The Yucatecan languages Itza, Mopan, and Lacandon also differentiate between complementizers and prepositions. *Ti* is the complementizer, and the most common preposition is *ich*. *Ich* is also found in Yucatec with a more limited meaning and use than the Yucatecan preposition *ti7*. Lacandon uses *ti7* as a benefactive 'for him' and as a complementizer. *Ich* is a preposition, but *ta* is used as the preposition in relational noun constructions e.g. *ta pach* 'at one's back', 'behind'.

It is significant that the languages which differentiate between complementizers and prepositions are numerous and widespread, and are members of the Cholan, Yucatecan, and Tzeltalan families. The languages which do not differentiate are in the minority. Yucatec and Chol, our standard linguistic sources, turn out to be atypical. This fact has important implications for the study of the ancient Maya script.

13.2 Evidence of Contrasts in the Hieroglyphic Texts

In the glyphs there are several affixes which relate to this discussion. The first is T59, given by Landa as the syllable *ti*, T51/53 *ti* or *ta:*, T103, T113, T565 all read *ta*, T89/90/91/92 *tu* from *ti+u* (Figure 2) and T747, the vulture head with a T59 prefix, which sometimes replaces T59.³ Mathews and Justeson show that these glyphs substitute for one another in various contexts (Mathews & Justeson 1984:193ff).

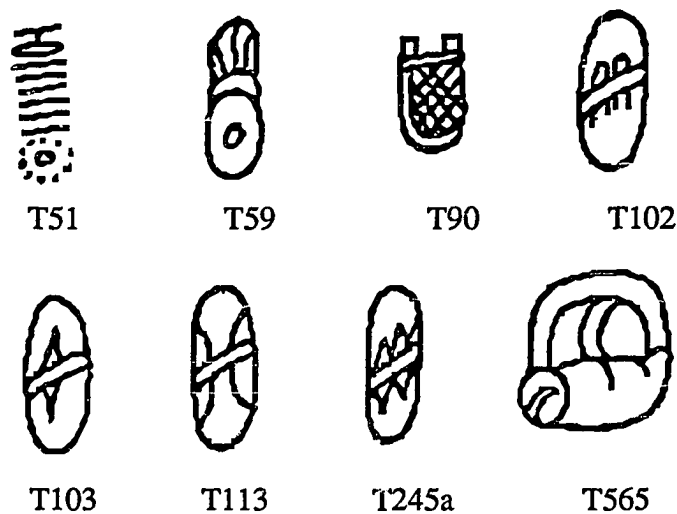


Figure 13.1.

The complementizer/preposition contrast which exists in some modern Mayan languages can be an important diagnostic in determining linguistic variation among the ancient Maya. In the glyphic texts a *ti/ta* affix can tentatively be identified as a locative preposition if it occurs before locations such as 'house' or 'sky'. It is a preposition with more general uses if it occurs before titles 'he was seated as lord, in lordship' or before time periods 'on 5 Ahau'. A particle is a complementizer if it occurs before another verbal form such as a verbal noun. That is, the particle T59, following T757, the jog glyph, and preceding a verbal noun, can be called a complementizer. When observing any of these affixes in the inscriptions it is important to note when the functions are contrastive, and when certain signs are consistently substituted for each other.

Because of potential language/dialect differences, it is not sufficient to compare these affixes indiscriminately across sites and time periods. If dialectal variation did exist it will only be detected by comparing patterns at multiple levels: single text, texts from a single time period, texts within a site or within a given geographical area. Also, it is crucial in such an investigation to frame the proper question. The object is not simply to try to find which modern language is closest to the ancient language recorded at a particular site.

Neither is it simply to choose between Yucatecan or Cholan as the language family for various Classic Maya groups. The question is, rather, what patterns of variation did exist, and what were their temporal and geographic limits.

In order to test whether or not preposition/complementizer contrasts (or, more properly, extended locative preposition vs. non-locative preposition and complementizer) would provide interesting information about dialect groups, I examined *ti/ta* affixes in texts from 16 Classic Period sites. I tallied occurrences of these affixes in the following contexts:

1. as a phonetic complement in the anterior and posterior date indicators
2. in *ti*-constructions (following T1.60.757 or T516)
3. as a main sign
4. before the 'half-period marker'
5. occurrences of T89/90/91/92 (hereafter referred to as T89)
6. preceding offices or titles such as *ahau* and *batab*
7. as miscellaneous prefixes
8. as suffixes
9. as locatives, before 'sky', 'house'
10. as temporal markers, before 'day', before the coefficients of day names
11. in partitive constructions, between coefficients and day names

The glyphs recorded were T51/T53 (hereafter referred to as T51), T59, T89, T102, T103, T113, T245a, T565, and T747. The sites included Ixkun, Naranjo, and Tikal from the Peten, Seibal, Machaquila, Aguateca, Tamarindito, Itzan and Dos Pilas from the Petexbatun region, the Usumacinta site of Yaxchilan, Caracol in Belize, Copan and Quirigua in the east, and the western sites of Palenque, Bonampak, and Tortuguero. Many important sites were not considered, and not all inscriptions at the included sites were available. This was a preliminary foray into the data to test the hypothesis that

complementizer/preposition differences can be diagnostic of dialect differences, and to find out what patterns might prove the most helpful.

Table 13.2 gives some of the results of this pilot survey. The presence of a glyph in a particular category is significant, but due to the accidents of preservation, the paucity of texts at some sites, and the speed with which the data were scanned, the absence of a given item is not necessarily significant. I would like to begin discussion of the findings with those features that offer the clearest results, and then to mention several of the categories that were looked at, but were not included in Table 13.2.

SITE	<u>uti</u>	<u>as ahau etc.</u>	<u>ti-const</u>	<u>locative</u>	<u>PE</u>	<u>temporal</u>	<u>partitive</u>
PAL	59	51,102,103,113,245a,565		113,565		113	
TRT		51,113,565				51	
BPK	59	59, 565					
NAR	59		59	113	59	51,113,565	59
CPN	59,747	59			59	59	51,59
QRG	59,747						59
YAX	59	59	59	59		51,59	
MQL	59					59	
CRC	59				59		
AGT	59		59				
ITN	59	59				59	
DPL	59	59					
SBL	59	59	59				
IXK	59						
TAM	59						
TIK		59 (as batab)					

Table 13.2. *ti/ta* Affixes.

The most universal use of T59 is in the anterior and posterior date indicators. David Stuart has suggested that T59 is a phonetic complement in a reading of *ut(i)*, 'it happened', 'it came to pass' for the combination of a phonetic sign for *u* + T59 (+ T126) (Figure 13.2 a). The only two sites for which I found any substitution for T59 were Copan and Quirigua, where the *ti*-vulture head, T747, occurs at least 6 times.

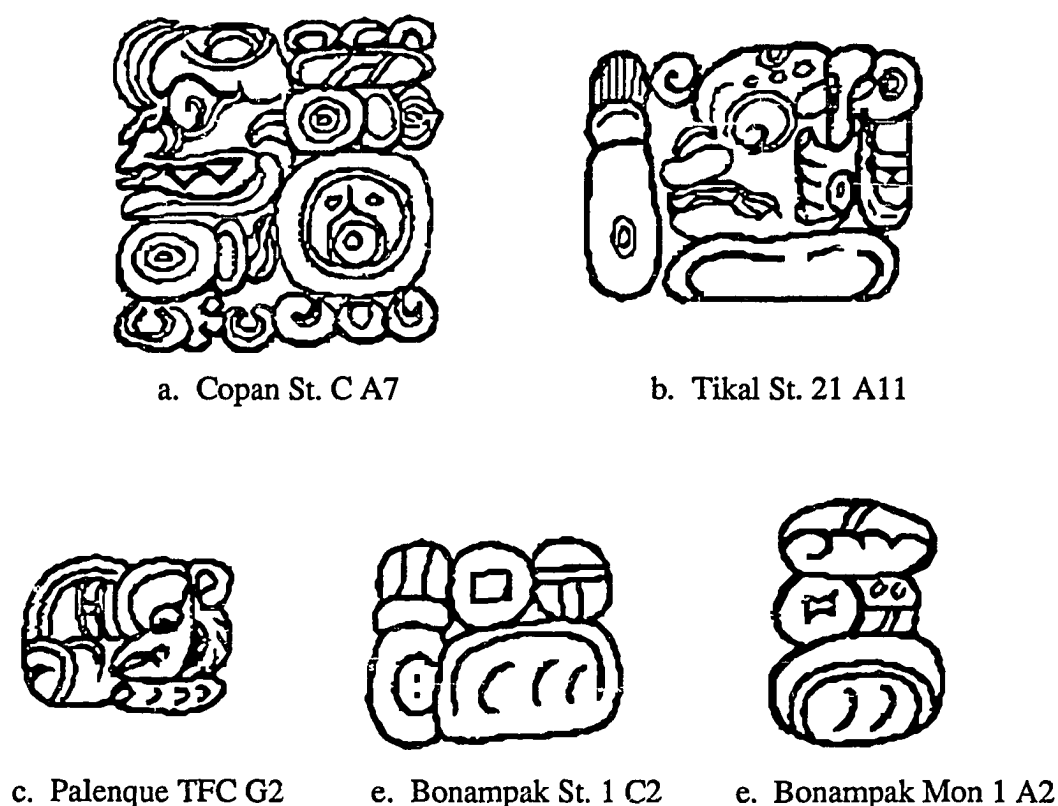


Figure 13.2.4

The second category in Table 13.2 is the occurrence of a prefix before *ahau* or *batab* (Figure 13.2 b), both titles or offices known from ethnohistorical sources, and still used in some modern languages. Also included is the phrase at Palenque read by Schele as *ta och le* 'as enterer of the succession' (Figure 13.2 c) (Schele 1984n:95). T59 is found at 7 of the sites which have these title expressions. At Palenque and Tortuguero there are various examples of the *ta* group of affixes, and none of T59. Bonampak has one example of T59 (St.2:C2) (Figure 13.2 d) and one of T565 (Stone1:A2) (Figure 13.2 e). The two inscriptions are dated by Peter Mathews (1980:72f) as about 100 years apart, and are done in very different glyphic styles, so it is possible that the use of the two prefixes reflects linguistic variation within a single site. All three sites having glyphs other than T59 to introduce titles are on the western edge of the Maya area.

The next category is that of *ti*-constructions. For purposes of this study a *ti*-construction is defined as a verb, either T1.60:757, the general verb (Figure 13.3 a), or T516:103 (Figure 13.3 b) followed by a *ti/ta* affix followed by a another glyph which may be a noun, a verb, or a verbal noun. There is some question whether all of these are complementizer constructions, or whether some are simply prepositional phrases following a verb. The glyphs which were used in locative phrases have some bearing on this issue.

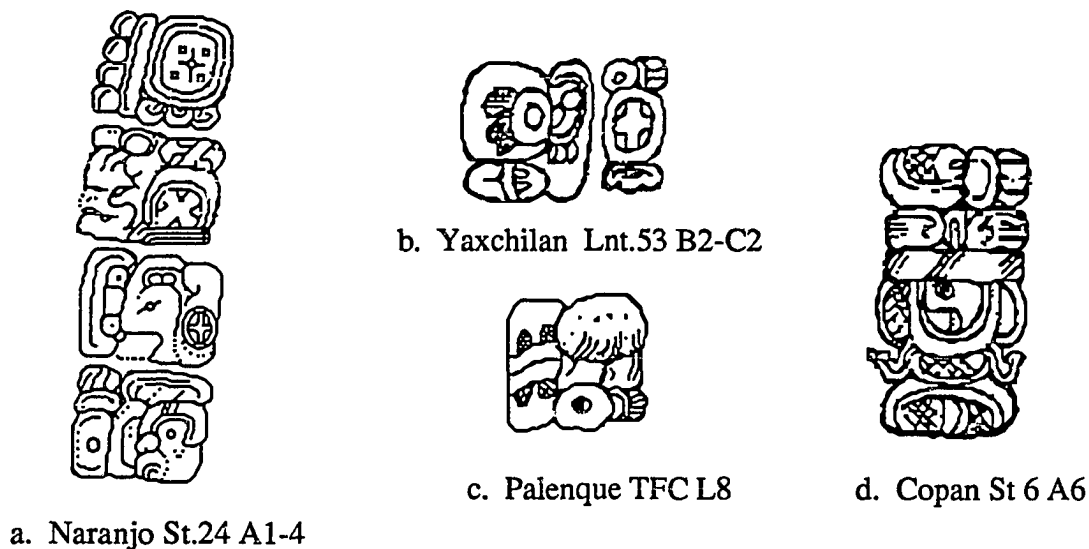


Figure 13.3.⁵

In the texts examined there were *ti/ta* affixes before sky and house (Figure 13.3 c), presumably as locative prepositions. At Yaxchilan T59 occurs in this context. T565 occurs at Palenque, and T113 occurs at both Palenque and Naranjo. The best argument in favor of the *ti*-constructions being complement clauses is that at Naranjo on a single stela, Stela 24, T59 is used following T1.60:757 (A4) and T113 is used as a locative (D5), and in a calendrical expression (A2) as well. T59 and T113 substitute for each other in similar contexts at different sites, but I do not yet know of an instance of them substituting for each other within a single site. Since at Naranjo they are found in different contexts it would suggest that this site recorded a language which distinguished between a

complementizer/preposition and an extended locative preposition, and that indeed the *ti*-phrase following T757 is more than just a prepositional phrase. This argument is not necessarily relevant to the *ti*-phrases which follow T516:103.

There are at least 3 sites at which T59 precedes the glyph for the half-period ending (Figure 13.3 d). It would appear to be a temporal preposition except for the fact that at Naranjo other temporal markers are T51, T113, and T565, while T59 appears before the half-period. It is possible that instead of 'at/on the half-period' it means 'because of/on the occasion of the half-period'; or it may be a phonetic complement.

Seven sites of the 16 sites have one of the affixes occurring either before a *k'in* 'day' sign or before the coefficient of a day in the Sacred Calendar. Those sites which have T103, T113, T565, etc. have them as temporal markers. Those sites which have T59 consistently have T59 in temporal expressions as well.

There are 3 sites at which T59 occurs after the coefficient of the day and before the day sign, usually (always?) Ahau. Besides the fact that these phrases differ in word order from the temporal constructions, Naranjo gives us additional evidence that they are different. T59 is used in these, contrasting with T51, T113, and T565 in the temporal expressions. It is very possible that this phrase is cognate with the Yucatec expression given above, *oxlahunte ti katun* '13 katuns', literally, '13 of katuns'.

There are a number of categories for which data were collected, but which were not included in Table 13.2. Examples of *ti/ta* used as constituents in miscellaneous contexts were dropped since they did not seem to add any significant information about pattern variation. Status markers for 'as ahau', 'as batab', etc. were subsumed into a single category. Finally, examples of T89 were found at several sites, but their presence did not seem to correlate with any of the *ti/ta* differences which were observed.

In the course of this pilot study it became apparent that, in addition to finding some categories superfluous, others might be usefully added. One of these is the number of times an affix occurs in a particular context at each of the sites, as well as some estimate of

the size of the corpus for the site. This would allow for a comparison of relative frequency of occurrence, and would show whether a particular pattern was unique or fairly common. Although the miscellaneous prefix and suffix categories were deleted in order to simplify the material, each of these occurrences needs to be recorded with its context. It goes without saying that the count needs to be done on a corpus of the Classic inscriptions which is as complete as possible, that is, on all possible sources of inscriptions at every known site.

13.3. Functions and Phonetic Readings of *ti/ta* Affixes

Based on the data of this preliminary study it is possible to make some tentative generalizations about distinctions in function and in phonetic readings for certain of the *ti/ta* affixes. If we look across the columns of Table 13.2 it is evident that T59 and T747 do not substitute in the same contexts as the *ta* group of affixes (T103, T113, T565, etc.), which seem to be equivalent with each other. If we scan down the columns we see that those sites which do not have any of the *ta* group of affixes in prepositional contexts have T59 in the corresponding columns.

At Palenque where T59 is used phonetically, but not prepositionally, we can conclude that the preposition used, which was written with members of the *ta*-group, was not pronounced *ti*, but probably *ta* or *tä*. Likewise, at Tortuguero, only *ta* affixes are found. Bonampak, however, is the only site at which T59 and any of the *ta* group of affixes are found in similar contexts. As mentioned above, the separation of the two occurrences by almost a century, and differences in carving style allow for the possibility that this may reflect actual language differences.

There is one other glyph which occurs in contexts both with T59 and with the *ta*-group. T51 is used with T59 in temporal constructions at Yaxchilan, and in partitive constructions at Copan. These sites do not have *ta*-group prepositions. However, at

Palenque and Tortuguero T51 occurs in the same contexts as the *ta* prepositions, and is presumably equivalent with them.

If we attempt to assign phonetic readings to the prepositional affixes, one solid piece of evidence we have is that T59 was read *ti* by Yucatec speakers at the time of Landa. However, at those sites which have only T59 in prepositional contexts there are several possible readings:

1. T59 is always *ti*.
2. T59 is *ti* phonetically, but *ta* or *tä* logographically, when used as a preposition.
3. T59 was read *ti* or *ta* depending on the context (phonetic complement, preposition, complementizer).

At those sites which have only *ta* affixes prepositionally, but use T59 phonetically for *ti*, the preposition was probably pronounced *tä* or *ta*. The unusual distributional patterns of T51 may indicate one of two things:

1. it was always read *ta*, so at those sites where it substitutes with T59, T59 was read *ta* also, or,
2. it was bivalent, *ti* at sites with only *ti*, and *ta* at sites with *ta*.

At the site of Naranjo, where contrasts exist within a single monument, it appears that there were two distinct particles, one of which was *ti* and functioned as a complementizer with some additional uses, and *ta* which was a preposition.

Those sites with only one particle are similar to modern Yucatec, Chol, Chontal, and Tzeltal (Map 13.1). Palenque and Tortuguero with only *ta* or *tä* are similar to Tzeltal and Chontal. Naranjo, with both *ta* and *ti* would pattern with modern Tzotzil and Colonial Acalan Chontal.

The *ti/ta* patterns represent only one diagnostic feature among many that are available for determining the nature and extent of language differences among the Classic Maya. Many of the observations about site groupings made above have been apparent to

epigraphers for some time, and are supported by the presence or absence of other types of constructions, use of particular glyphs, choice of subject matter, and differences in artistic style and craftsmanship.

As more data are processed some of these generalizations will be confirmed; others, particularly those based on negative evidence will have to be revised. In many ways the Classic Period inscriptions represent a *grapholect*, that is, a transdialectal language which is an artifact of the commitment of a culture to writing (Ong 1982:8,106-108). Even though the sounds, vocabulary, syntactic constructions, and formulaic expressions of a Highland Scotsman and a Texan are quite distinct, many of the differences disappear when they write formal English, and both of them can read formal English equally well. Language differences are much more obvious in a conversation between the two than in their ability to comprehend written English.

In the same way, it would appear that while the Classic inscriptions were able to be read by literate people throughout the area, the glyphic texts give clues about the language differences of the individual authors who composed them. And, although a number of phonetic differences between sites are known, in a logo-syllabic script shared by languages with a high percentage of cognate vocabulary, subtle phonetic differences can be difficult to detect. On the other hand syntactic differences, such as preposition/complementizer contrasts, can provide important clues to language variation during the Classic Period.

The evidence described in this preliminary investigation shows that Palenque (with Tortuguero) is unique linguistically. Whether it is sufficiently different from the speech recorded at other sites to warrant being called a different dialect or a different language awaits more complete descriptions of Palenque Mayan and the languages/dialects recorded at other sites.

Notes for Chapter 13.

¹ The material in this chapter was originally presented at the Sixth Mesa Redonda de Palenque in 1986. The chapter is a revision of Macri (in press), a version of that presentation, which has been submitted for publication to University of Oklahoma Press.

² I would like to express appreciation to William Ringle for providing some of the statistical information on the Acalan data cited in this section.

³ Phonetic readings given in this paper are consistent with the interpretations listed in Justeson (1984) unless otherwise noted.

⁴ Sources:

- a. Copan St. C A7. After Maudslay 1889-1902.
- b. Tikal St. 21 A11. After Jones & Satterthwaite 1982.
- c. Palenque TFC G2. After Schele 1984n.
- d. Bonampak St. 1 C2. After Mathews 1980.
- e. Bonampak Mon. 1 A2. After Mathews 1980.

⁵ Sources:

- a. Naranjo, St. 24 A1-4. After Graham and Von Euw 1975.
- b. Yaxchilan Lnt. 53 B2-C2. After Graham 1979.
- c. Palenque TFC L8. After Schele 1984n.
- d. Copan St. 6 A6. After Maudslay 1889-1902.



Chapter 14. The Jog Glyph.

One of the most important glyphs in the Maya hieroglyphic inscriptions is an animal head, T757, nicknamed by Thompson (1962:354) the *jog glyph* (<dog + jaguar).

This chapter begins with a description of the jog glyph and its characteristic affixes. That is followed by a brief summary of previous researchers' conclusions about the functions of the glyph, and various phonetic readings that have been proposed. Visual and structural evidence from the inscriptions, together with lexical and syntactic evidence from modern Mayan languages, are cited in support of a new reading for the jog glyph which I first tentatively in 1984.

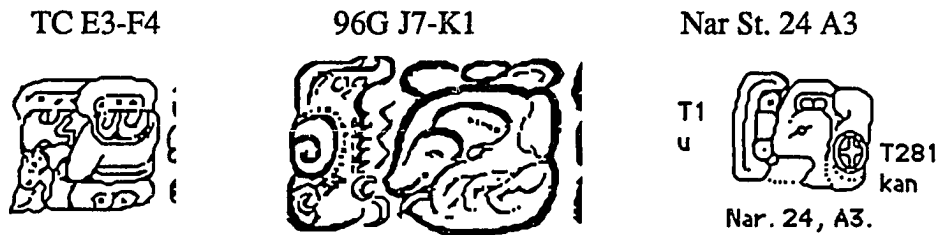
14.1. Previous interpretations

T757 in Thompson's Catalog, is clearly the profile head of an animal. Animals which have been suggested as the referent for the glyph include a jaguar (Tozzer and Allen 1910:Plate 35, Thompson 1962:354), a dog (Thompson 1950:323, 1962:354), an otter (Thompson 1950:323), a rodent (Proskouriakoff 1968:249), a pocket gopher (Bricker 1985:70), and a rabbit (Schele & Miller 1983:23ff).

Perhaps the most salient feature is the tongue protruding from an open mouth. In a few instances there are teeth as well. The eye is small, and often there are lines leading from the snout, over the eye, back toward the ear. There are various kind of ears, some circular, some elongated, some the shape of the typical jaguar ear. A few have bar/dot

numbers on them. The cheek is large, and the lower jaw is short. A k'an cross (T281) appears on the cheek, in the lower right corner, though sometimes it is placed slightly higher. The examples below show these features together with the prefix /u/ (three slightly different versions, the elongated sign above the first jog and to the left of the second two).

(14.1)



In nearly all cases the jog glyph is preceded by /u/, T1, or one of its allographs, signifying the morpheme *u-*, the third person ergative/possessive prefix. T60, a glyph resembling a hank of looped strands of thread or a folded piece of cloth knotted in the center, is often found above the jog head, as in the second example above. A variety of signs occur as postfixes.

14.1.1. Proskouriakoff

Proskouriakoff (1968) demonstrated that another animal head, T788, once thought to be a jaguar, is an Early Classic equivalent of T757, and that both signs represent the head of a rodent. Strands above the head of T788 may be analogous to the presence of T60 above T757. In addition, Proskouriakoff pointed out that T757 substitutes for T501 /ba/ in phonetic spellings of the *bakab* title found at the end of name phrases of both male and female rulers. In the first example below, the jog head is used for the second /ba/ sign.

(14.2)

96G I4-J4



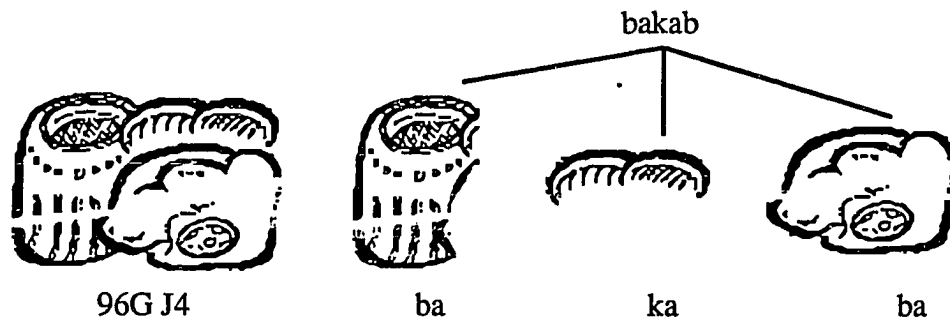
na? k'atun ajaw bakab

one (?) katun ajaw bacab

'one (?) katun lord, bacab'

Here is an orthographic tree showing the spelling of the word *bakab*.

(14.3)



In two examples from Naranjo, the gopher head is used for the first /ba/ sign (notice the alternation of two different signs for the syllable /ka/).

(14.4)

Nar St. 24 A9



Nar St. 24 E19



Proskouriakoff noted that the jog glyph occurs most often at the beginning of a glyphic passage, immediately after a date, or following an emblem glyph or other phrase-final glyph. Because a name or an action glyph can follow the jog, she proposed that it is "not part of some longer expression but either an independent ritual phrase introducing what follows, or a complete predicate" (1968:249). Because it is used in a wide range of contexts, occurs clause initially, and is directly associated with individuals she proposed that "it must stand for some widely applicable expression, such as, for example: 'Here is portrayed (or recorded). . .,' 'In commemoration of. . .,' or some such phrase directing attention to the subject of the accompanying picture" (1968:249).

14.1.2. Kelley

Kelley (1976:118) disagreed with Proskouriakoff and suggested that T757 is merely some kind of title. He considered the reading *ba* dubious.

14.1.3. Josserand et al.

At the Fourth Palenque Round Table in 1980 there were two papers delivered that discussed T757. The first was authored by Kathryn Josserand, Nicholas Hopkins, and Linda Schele. The first important observation they made is that the clause initial position of T1:757 (the jog prefixed with /u/) indicates that it is a verb (Josserand et al. 1985:88ff). They summarize the epigraphic data in five statements:

1. When T1:757 appears alone it records period ending events, bloodletting, and bloodletting visions. "The lack of common semantic or phonetic elements. . . suggests a generalized function. . ." (Josserand et al. 1985:97).
2. Additional glyphs following T1:757 indicate the distinctiveness of the recorded events.
3. On Tikal Stela 4 and La Mar Stela 3, T1:757 is followed by a verbal glyph with

T181 *-ah* affixed, which, they say, identifies the glyph as a main verb.

4. T1:757 can be followed by *ti* + noun.
5. T1:757 can be followed by *ti* + nominalized verb, that is, a verb which carries no verbal affixation.
6. When T757 appears with the suffix T181, the ergative person marker *u* (T1) is not present. They conclude that T757 is "the stem of this auxiliary verb, which usually occurs with third-person-singular transitive inflection" (Josserand et al. 1985:97).

The second part of the paper gives linguistic data relating to the *ti* constructions in the glyphs. They compare T757 to what they call modal auxiliary constructions in Chol. Since such auxiliaries should be intransitive, the *u*- person marker "is more likely to reflect some property of tense-aspect (Josserand et al. 1985:102)."

14.1.4. Bricker

At the same meeting Bricker presented a paper entitled "A Morphosyntactic Interpretation of Some Accession Compounds and Other Verbs in the Mayan Hieroglyphs (1985). She suggested that the k'an cross on the cheek of T757 identified the referent of the sign as *k'anal ba*, the Tzeltal name for a yellow pocket gopher. Further, she notes that *bah* is the verb 'go' in Tzeltal, which functions both as an independent and an auxiliary verb. "It therefore makes both semantic and syntactic sense to interpret T757 as *bah*, 'go'" (Bricker 1985:70).

Since the T1 ergative person marker *u*- and the T181 postfix, which Bricker identifies as the perfective suffix *-ah*, never occur together, and since 'go' is intransitive, she concludes that this is evidence for a split ergative system. That is, T757 is an intransitive verb marked with an ergative person marker when it is in the imperfective aspect, and marked with the absolutive person marker, \emptyset for third person, when it is followed by T181, the perfective suffix.

14.1.5. Currently Proposed Readings

In addition to main and auxiliary verb constructions, Schele (1982:57f) notes the use of T1.757 in parentage statements immediately preceding the 'child of mother' glyph T1.I:606:23, the first example below, and the 'child of parent' glyph T712.

(14.5)

PTab C14-D16



TC E3-F4



In an extensive examination of the topic, Schele examined substitution patterns and contexts and proposed an *umul* 'rabbit' reading for the jog glyph (Schele & Miller 1983:23-60). In Justeson and Campbell (1984), T757 is mentioned in three sections: it is listed for the syllable *ba* in Mathews' syllabary chart (Mathews 1984:312), in Justeson's list of homophonous signs (Justeson 1984b:367), and is the phonetic reading preferred by Mathews, Stuart, Riese, Campbell, Fox, and in Justeson's summary of interpretations (1984a:356), where Justeson, Mathews, and Stuart give a logographic reading of *mul*; and Riese gives *ba* and *mul* as phonetic readings. In current summaries of syllabic readings, T757 is given the value /ba/ (Schele 1988n, Stuart 1987).

Bricker (1986:213f) continues to favor a *ba(h)* phonetic reading which she translates as 'go' *ba* (not reconstructed for proto-Cholan), 'perforate' (proto-Cholan *bäj) (Kaufman & Norman 1984:116), or the reflexive marker 'self' (proto-Cholan *bä).

14.2. A New Interpretation of T757

The phonetic reading I am proposing here is not entirely new. It is based on the

interpretation of the glyph as a gopher, *bah*, but it includes the protruding tongue and the kan cross as phonetic elements. I assert that the full glyph form T1.(60:)757 (earlier T1:788) was created specifically to signify a formulaic ritual phrase *u ak'an u bah* 'he offers/presents himself' and that T757 was then later used as a phonetic sign for the syllable *ba(h)* in 'child of mother' expressions and in the bacab title .

14.2.1. A Phonetic Complement /ba/, T60

I would like to elaborate here on a suggestion first made by Thomas Smith-Stark at the Taller Maya VII in 1984, that the affix T60 might be read *ba*, and that it would then function with T757 as a phonetic complement. *Bal* is a transitive verb root in Tzotzil, Tzeltal, Cholan, and Yucatec meaning 'to braid', 'to twine', 'to roll up', 'to twist' (Aulie & Aulie 1978:35, Barrera Vasquez 1980:31, Hurley Vda. de Delgaty y Ruiz Sanchez 1978:18, Kaufman & Norman 1984:116, Laughlin 1975:78). This fits visually with the multi-strand knot, and it fits pattern-wise because T60 occurs in 20% of the the examples of T757 in Thompson's Catalog (1962:350ff), apparently, as Proskouriakoff observed, without any correlative change of context (1968:249). This is exactly the pattern that would be expected if T60 were an optional phonetic complement.

T60 is also found prefixed to the jaguar head T751 (Thompson 1962 lists 7 occurrences). If a phonetic reading of *ba* is correct, it would be functioning in these circumstances as a phonetic complement for 'jaguar' *b'ahläm*, or even possibly as an approximation of the first syllable of *b'ahläm* if T60 really is derived from the transitive verb root *bal*.

Additional evidence that T60 should be read *ba* is found on Altar U at Copan at K3 and at C6 on Lintel 1 from Lacanja T(1.)60:501 where it appears to function as a phonetic complement for the *ba* reading of T501 *ba* in the 'child of parent' lineage expression. The fact that it occurs with the main sign in the first glyph of this expression whether it is T757

or T501 suggests that it functions as a phonetic complement.¹

14.2.2. The Tongue, *ak'*

That the tongue of the gopher is an essential part of the sign is evident for several reasons. First, it is nearly always present, and is, in fact, an identifying feature of T757. The tongue is present in 142 of 183 examples (77.6%) in Schele's verb catalog (1982). Of the 41 without the tongue, 18 show that corner of the glyph missing. Of the remaining 23, in many cases the lack of the tongue is probably due to poor preservation, but there remain a number of examples in which the tongue is clearly missing, probably less than 10%. A few of these occur in contexts where I suggest the word for 'tongue' would not be part of the reading, as for example, in the 'child of mother' clause which is discussed below.

A second indication that the tongue is important is that it is sometimes all that distinguishes the jog glyph from the rodent head T758, definitely a distinct glyph associated with different affix patterns and occurring in different contexts from T757.

Third, that the tongue is a significant part of the sign is further confirmed by the fact that it is sometimes elaborated by the scribes. Occasionally it is marked with the vegetation symbol of T87 (as in Yax St. 18 C2). Other times it expands out from the mouth upward toward the forehead or below under the jaw to the back of the head, in flame-like or leaflike shapes.

In Cholan, Tzeltalan and Yucatecan the word for tongue is *ak'*. In these languages the word for 'vine' is also *ak'*. In Mopan (Ulrich & Ulrich 1976:20) <ac'> is glossed as 'lengua, llamas, flamas', that is, 'tongue, flame'. A similar range of meaning 'tongue, flame' is given in the Cordemex for <ak'>. There is a third homophone *ak'* in Tzeltalan and *ak'* or *äk'* in Cholan languages (Kaufman & Norman 1984:115) which means 'give'.

That *ak'* is part of the phonetic reading for the jog glyph is suggested first by the fact that the tongue is both distinctive and prominent. Second, the presence of the T87

vegetation symbol in an example from Yaxchilan, and leaflike lines in others constitute a pun on the words for 'vine' and 'tongue'. Those tongues that look like flames are further confirmation for a phonetic reading of *ak'*.

The third homophone 'give' works well as an interpretation of the verb which is signified by the jog glyph, not just phonetically, but syntactically as well. It can occur alone, and it can also occur with *ti* constructions, that is, followed by a preposition which is followed by either a noun or a verbal noun. There are a number of lexicalized expressions which are composed of *ak'* + prepositional phrase.

The table below lists some of these verbal expressions in Chol and Tzotzil.

Chol (Aulie and Aulie 1978:27)

- (1) mi7 y - k' ti majan 'he loans'
INC 3ERG 'give' PREP 'loan'
- (2) mi7 y - k' ti n~uk 'he believes'
INC 3ERG 'give' PREP 'important'
- (3) mi7 y - k' ti çääñan 'lo deja que se enfrie'
INC 3ERG 'give' PREP 'cold'
- (4) mi7 y - k' ti c'äm - ha7 'he baptizes'
INC 3ERG 'give' PREP 'get' 'water'

Tzotzil (Laughlin 1978:40ff)

- (5) 7ak' ta 7o7on 'be concerned about, heed, take to heart, be offended'
'give' PREP 'heart'
- (6) 7ak' ta kwenta 'take seriously, heed, pay attention, be offended'
'give' PREP <Sp. 'cuenta'
- (7) 7 ak' ta k'el'el 'demonstrate, show'
'give' PREP <k'el 'look, stare'
- (8) 7ak' ba 'present oneself/before authorities, offer self/sexually'
'give' REFLEXIVE
- (9) 7ak' ba 7iluk 'reveal oneself', 'to present oneself for being seen'
'give' REFL <7il 'see, observe'
- (10) 7ak' ba ta k'ecel 'lean against person/husband leaning
'give' REFL PREP <k'ec 'carry crosswise' against wife to be deloused'
'to present oneself for being carried crosswise, held'
- (11) 7ak' ba ta k'ob k - ahval - tik 'partake of the sacraments
'give' REFL PREP 'hand' 2POSS 'lord' PL /baptism,confession,communion'
'to present oneself into/before/for the hand of our lord'
- (12) 7ak' ba ta k'ob rios 'partake of the sacraments
'give' REFL PREP 'hand' 'god, saint, /baptism,confession,communion'
eucharistic bread' 'to present oneself into the hand of god'

Table 14.1. Expressions with 'to give' in Chol and Tzotzil.

(Morpheme glosses added by the author.)

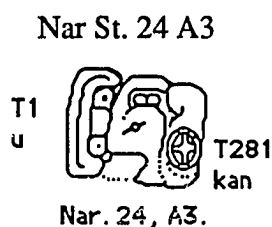
Note that example (8) contains <ba> the syllable represented by the gopher's head.
<ak' ba> is a reflexive construction which means 'to give oneself'. One typical reflexive

constructions are transitive expressions in which the reflexive particle is a direct object of the verb and is preceded by the possessive person marker corresponding to the ergative person marker on the verb stem. The reflexive must immediately follow the verbal complex, and it may not be fronted (Ayres 1980:53).

14.2.3. Two Person Markers

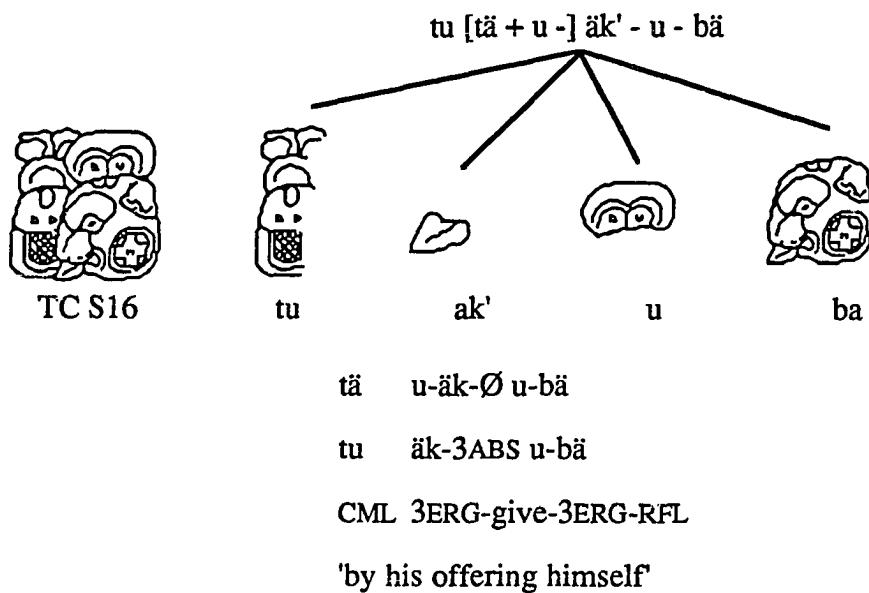
The notion that the jog glyph may represent *äk' ba*, a reflexive verb is particularly attractive, because it accounts for the presence of an extra ergative prefix which occurs, as in the example from the front of Stela 24 at the site of Naranjo, as a second /u/ sign, or, as at Palenque, following a *tu* which already signifies *tä + u*.

(14.6)



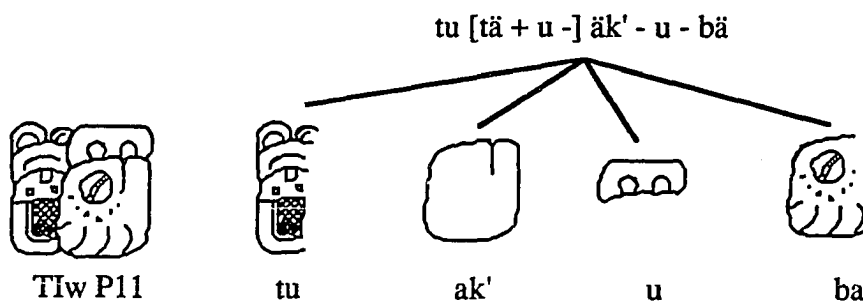
In Cholan languages reflexive verbs are inflected as transitive verbs with the reflexive particle *bä* as the direct object. Both the verb root and the reflexive particle are prefixed by an ergative person marker. The orthographic tree below illustrates the presence of two ergative person markers. The first is indicated by the use of /tu/ (T93) for the combination of the preposition/complementizer *tä*. The second one occurs, in this example, just above the head of the gopher.

(14.7)



Further confirmation for this interpretation comes from a phonetic substitution for the jog glyph that occurs in an identical context. Here a conflation of the 'k'a fist' and the syllabic sign /ba/ substitute for T757.

(14.8)



14.2.4. The K'an Infix

Another element which is probably not without significance is the k'an cross infix.

That such infixes can have a phonetic function is shown by the presence of the k'an cross

in the month signs Pop, which has the Pocomchi name <Kanhalam> (Thompson 1950:106) and the month Kayab, in Chol <Kanasi> (Thompson 1950:106). There are two

explanations for the k'an cross in the jog glyph. The first is that it is intended acrophonically as a phonetic complement for the sound /k'/. The second is that it is meant to be pronounced with *ak'* as *ak'an*, and that *-an* is a verbal suffix. The second possibility will be explored in more detail in a future paper. In any event, the k'an cross is important graphically to distinguish the jog glyph from the rodent head T758.

14.3. Ancestor Expressions

In addition to being used in verbal phrases, T757 also occurs in two kinds of ancestor expressions. One has to do with a sign that specifically relates the name of a ruler to a female ancestor, presumed to be the mother. The second is a sign that occurs in conjunction with ancestors and bloodletting, and relates the name of a ruler with a male or female ancestor.

14.3.1. 'Child of Mother' Expressions

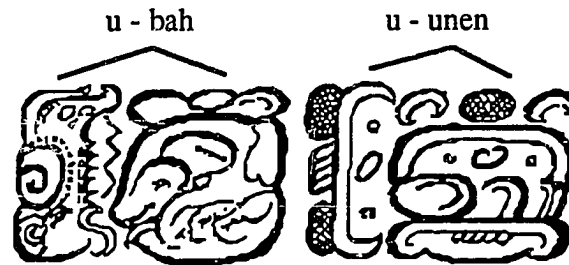
The first kind are the 'child of mother' expressions which occur between the name of a ruler and the name of a female ancestor, for reasons given below, almost certainly the subject's mother, or a person referred to figuratively as his or her mother. The first glyph block consists of the jog glyph, here used phonetically for the syllable *ba*. It is prefixed by the third person ergative/possessive marker *u-*, and is followed by T606, which itself is prefixed by *u* and a single dot or circle representing the number one. It is followed by the affix for the syllable *na* or *an*. In both Tzotzil of San Andres (Hurley & Ruiz Sanchez 1978:17) and Tzotzil of Zinacantan (Laughlin 1975:75) *ba* is listed as having the meaning 'first-born'. **bah* is reconstructed for proto-Cholan as 'first' (Kaufman & Norman 1984:138).

I first proposed the reading *unen* for the second glyph in 1984 (Macri 1985:223), based on the interpretation of the central sign as a mirror *nen*. The /*na*/ beneath it is a

phonetic complement for the final /n/. In Section 5.1.5. I demonstrated that the numeral 'one' indicates that the pronunciation was not /ʔuʔnen/ but /ʔuunen/. The *unen* reading has subsequently been independently proposed by Hopkins (In press).

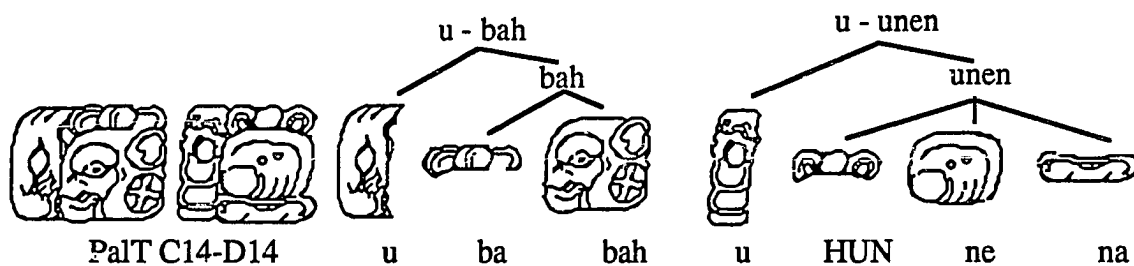
This suggests that the child of mother phrase be read as 'her firstborn', 'her child'. In both the examples below, the phonetic complement T60 is present above the jog.

(14.9)



96G J7-I8

(14.10)



u-bah u-unen

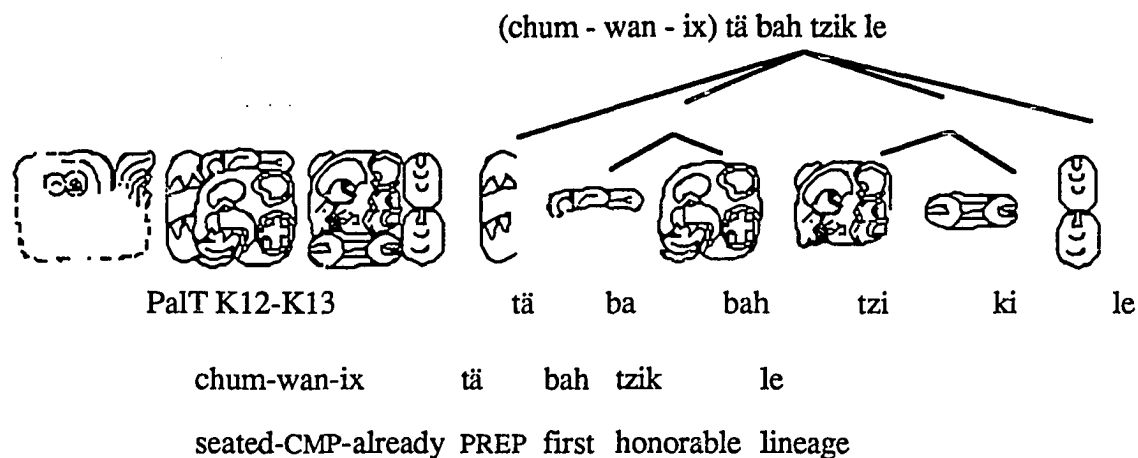
3ERG-firstborn 3ERG-child

'Her firstborn, her child.'

In section 9.1 I remarked that /bah/ does not occur before *unen* when more than one of the revered Palenque ancestors (the Triad (and other unidentified personages)) are named as children. This form is recorded on the Middle Panel of the Temple of the Inscriptions at F7, and at A1 on the west panel. In both cases Pacal is named as the mother of the 'gods'. Since more than one child is named T757, *bah*, as the modifier 'first' does not occur.

There is another example of the jog for 'first' at Palenque. It occurs as part of a seating expression. Whether the 'rodent bone' is read *tzik* 'well-born, honorable' as I suggested in Section 3.6.1, or as *ch'ok* 'child, heir', the reading for 'first' or 'firstborn' is appropriate in this context.

(14.11)



'He had been seated as firstborn of the honorable lineage.'

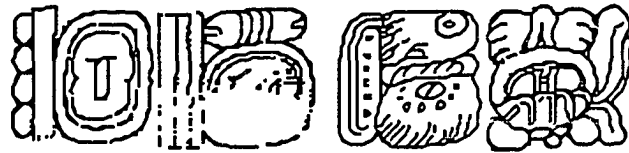
14.3.2. 'Child of Parent' Expressions

There is a second group of relationship glyphs called 'child of parent' (or 'descendent of') expressions. These consist of T757 preceded by a third person ergative/possessive prefix *u-*, followed by a second glyph block in which *u-* is followed by T712, a sign associated with bloodletting, thought by many epigraphers to represent an obsidian lancet (Justeson 1984:353). Schele (1982 Chart 132) contains 10 examples of this phrase, and 9 examples of similar, though not equivalent, phrases.

The number of occurrences of this couplet indicates that it was, for the ancient Maya, a formulaic expression of birth and parenthood. It was either verbal, composed of two verbs: 'She offered herself, she let blood', or it followed the same pattern as the previous possessive expression and is read, 'His/her firstborn, his/her ___' with the word symbolized by the obsidian lancet unknown. The expression is found at Yaxchilan (4

times), Palenque (twice), Altar de Sacrificios, Tortuguero, Pusilha, and Coba. It is given, along with the context, as it occurs on the Tablet of the Cross, below.

(14.12)



bolon ik' ho7läjün ___ y-ila kab mah ___

9 Ik 15 Ceh 3ERG-see earth great ___

'On 9 Ik 15 Ceh the divinity (?) [GI] saw the earth.'

TC E3-F4



u-äk-u-bä u-___ säk k'uk' ix k'an le ux na

3ERG-offer-3ERG-RFL 3ERG-___ Sak Kuk Lady Precious Lineage 3 Mother

'Sak Kuk, Lady Mother of the precious Triad lineage offered herself, let
blood.' *or*

'Sak Kuk's, Lady Mother of the precious Triad lineage, firstborn, her ___.'

14.4. Summary

In summary, I have suggested that the jog glyph's primary meaning was 'to offer oneself' and that it was only secondarily used as a phonetic sign. This explanation accounts for the presence, and frequent elaboration, of the tongue on the sign, as well as the second occurrence of the ergative person marker. Its presence in 'ti-constructions' at other sites is a function of its being a verb which can be followed by complement clauses or prepositional phrases, such as 'He offered himself with a bloodletter', 'He offered himself

by his bloodletting.' In Palenque it occurs verbally as part of a complement clause, 'He became (?) sak winik by his offering himself (bloodletting)' and in the ancestor statement 'She offered herself, she let blood.' It occurs as a phonetic sign in the *bakab* title, in the 'child of mother' glyph, and as 'firstborn of the lineage'.

Note for Chapter 14.

¹ T501, the Imix day sign, is a common phonetic sign that some would not expect to have a phonetic complement. But a phonetic complement would help to distinguish it from the phonetic signs for /ma/, T502 and T556, which differ only in their central elements and might otherwise be difficult to distinguish from T501.

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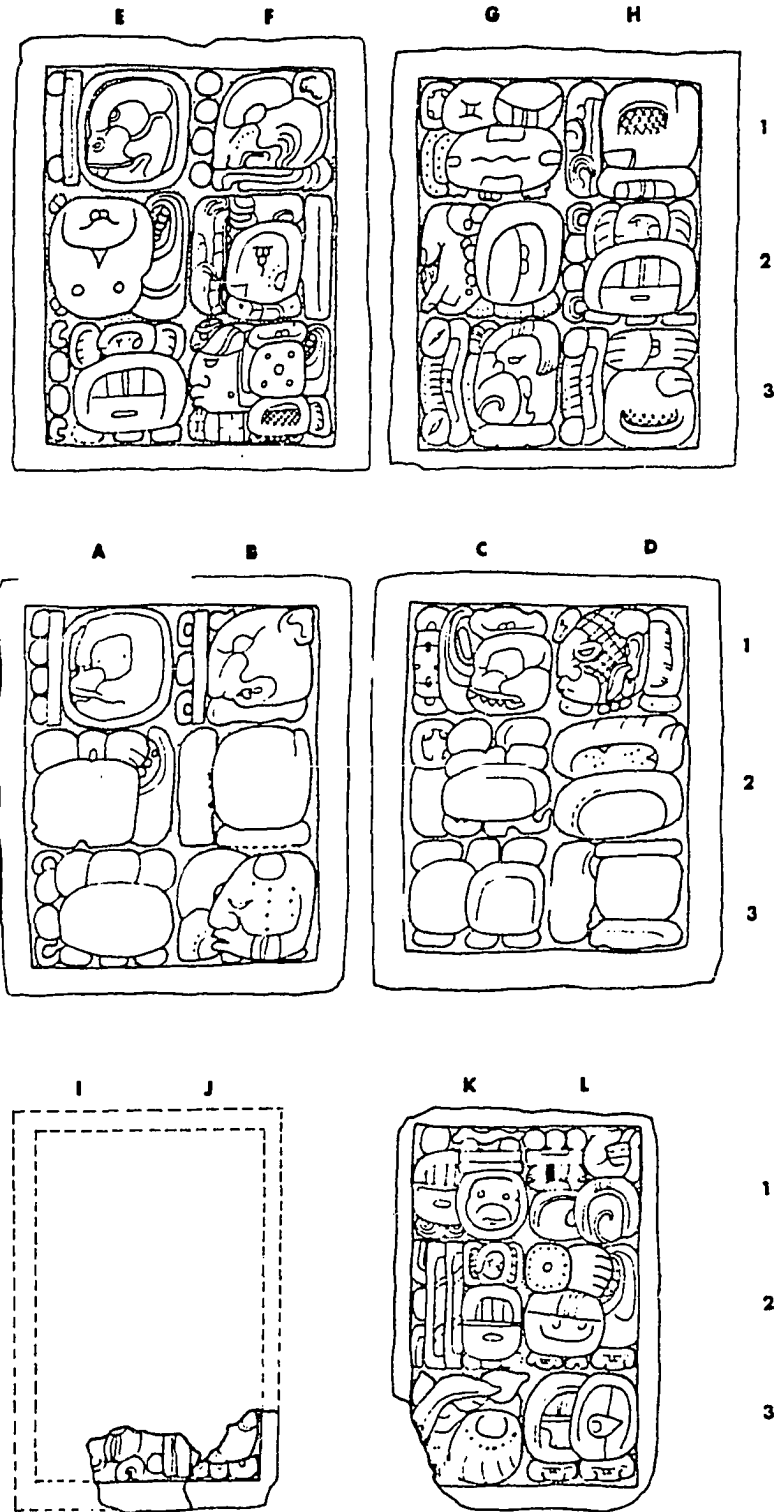
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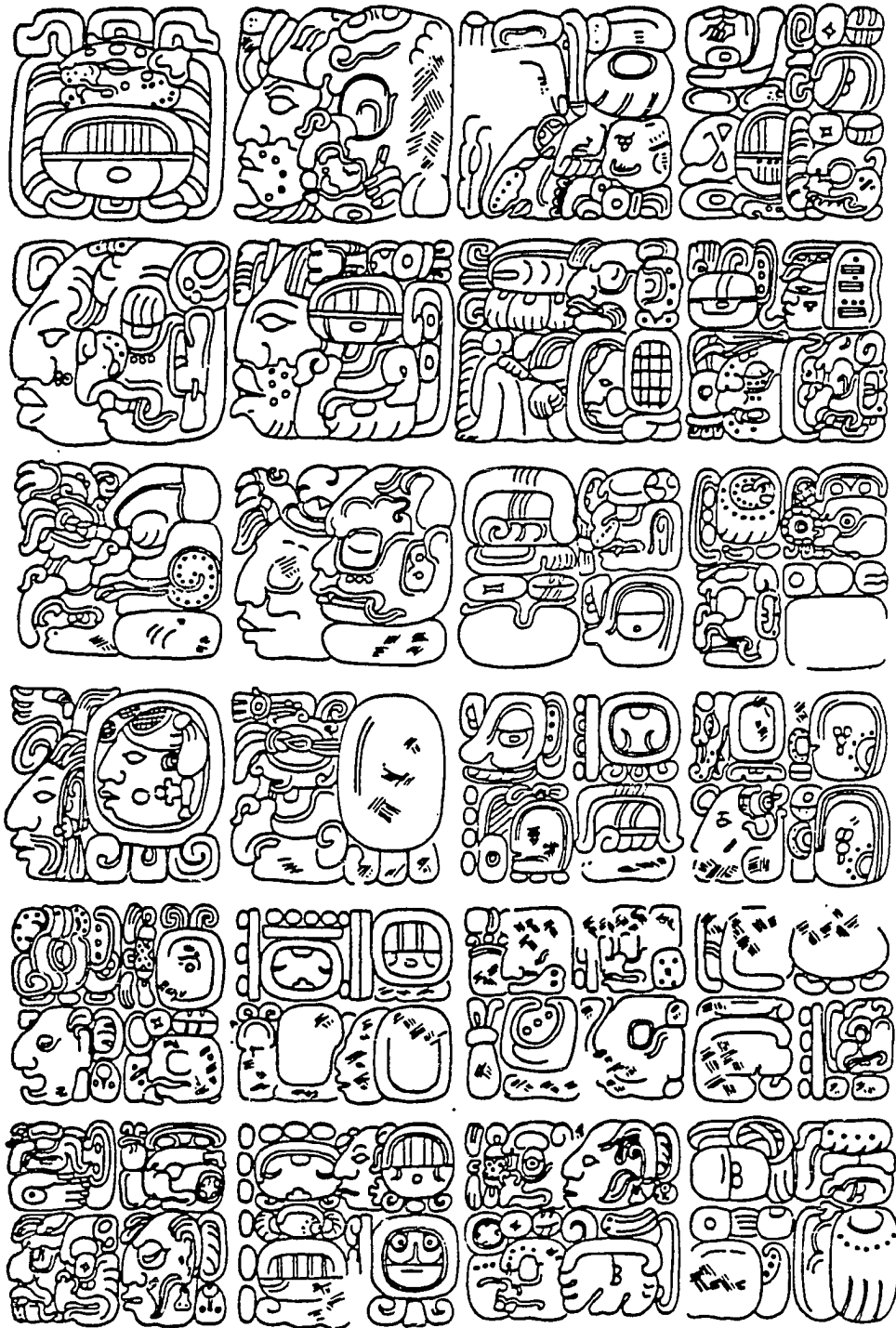
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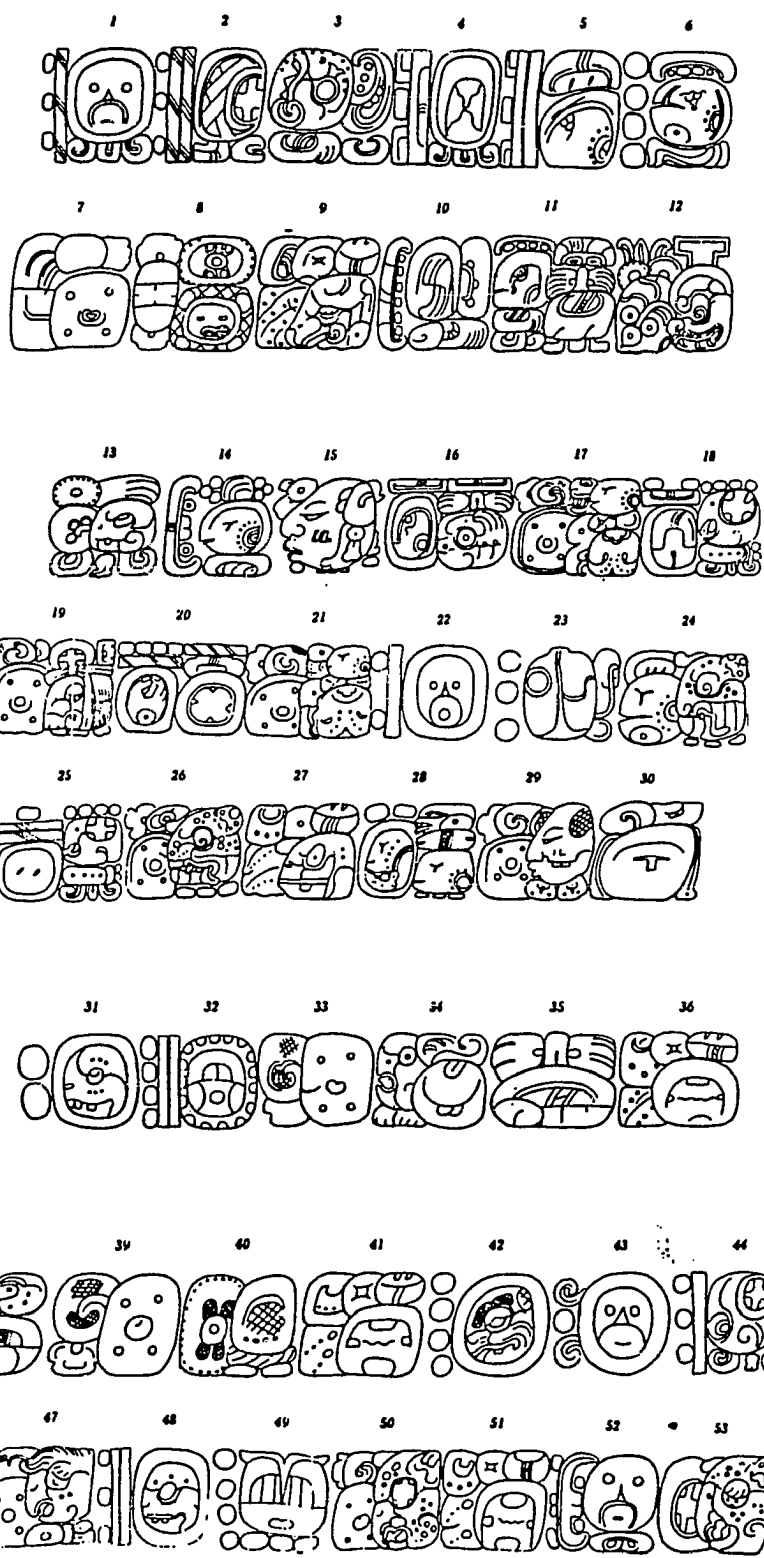
Appendix I. Selected Palenque Texts.



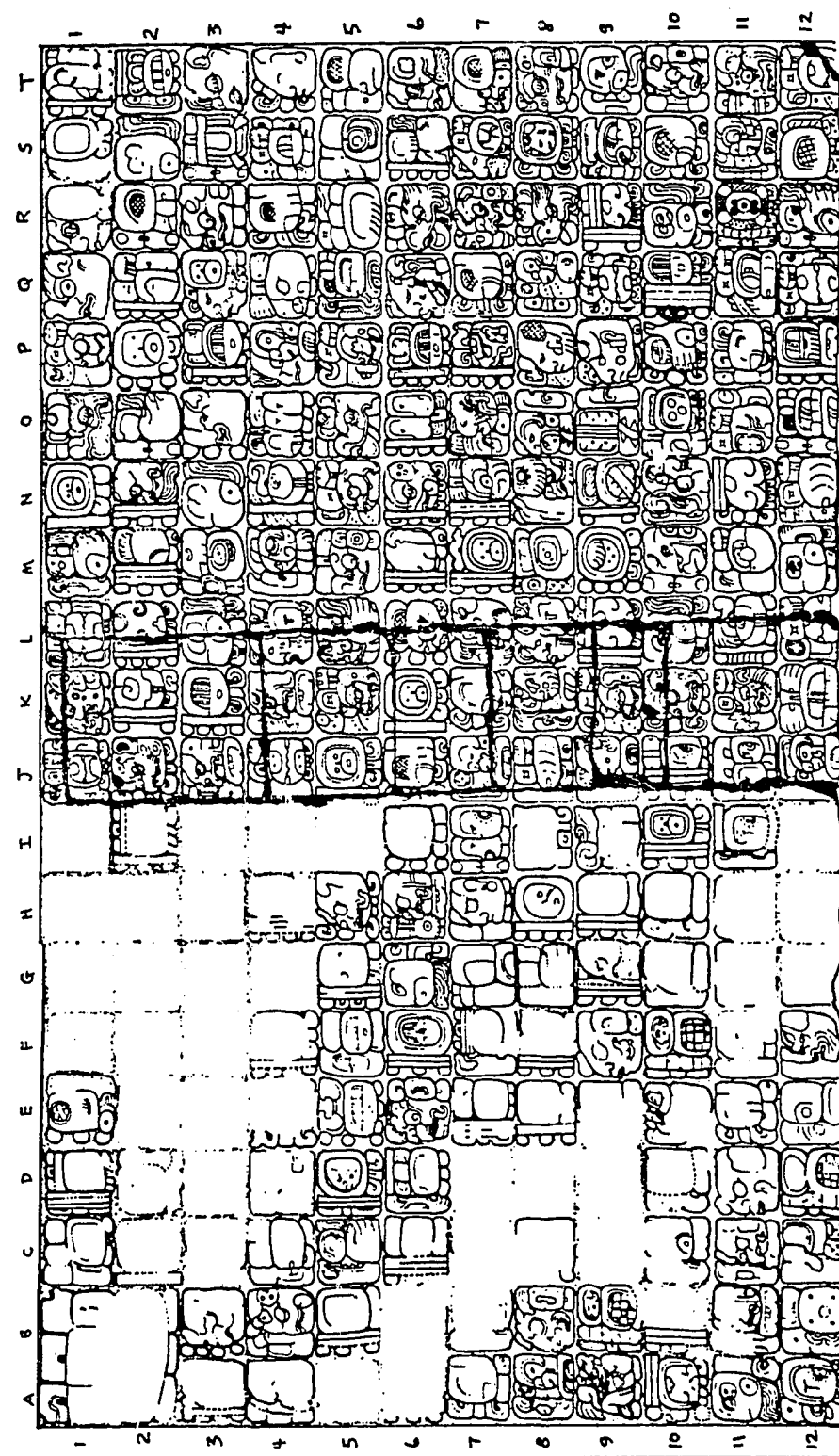
Tabletarios



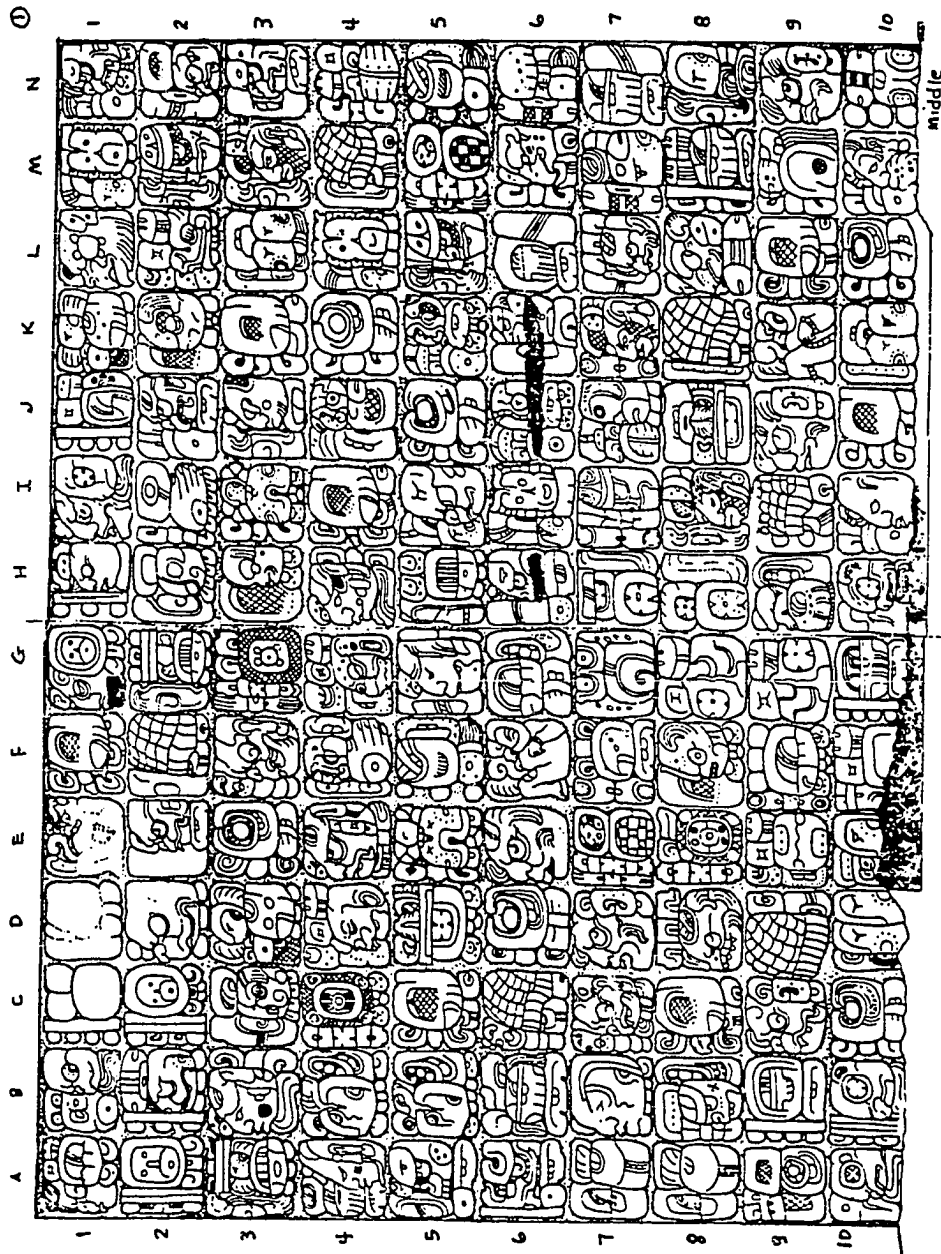
Hieroglyphic Stairs



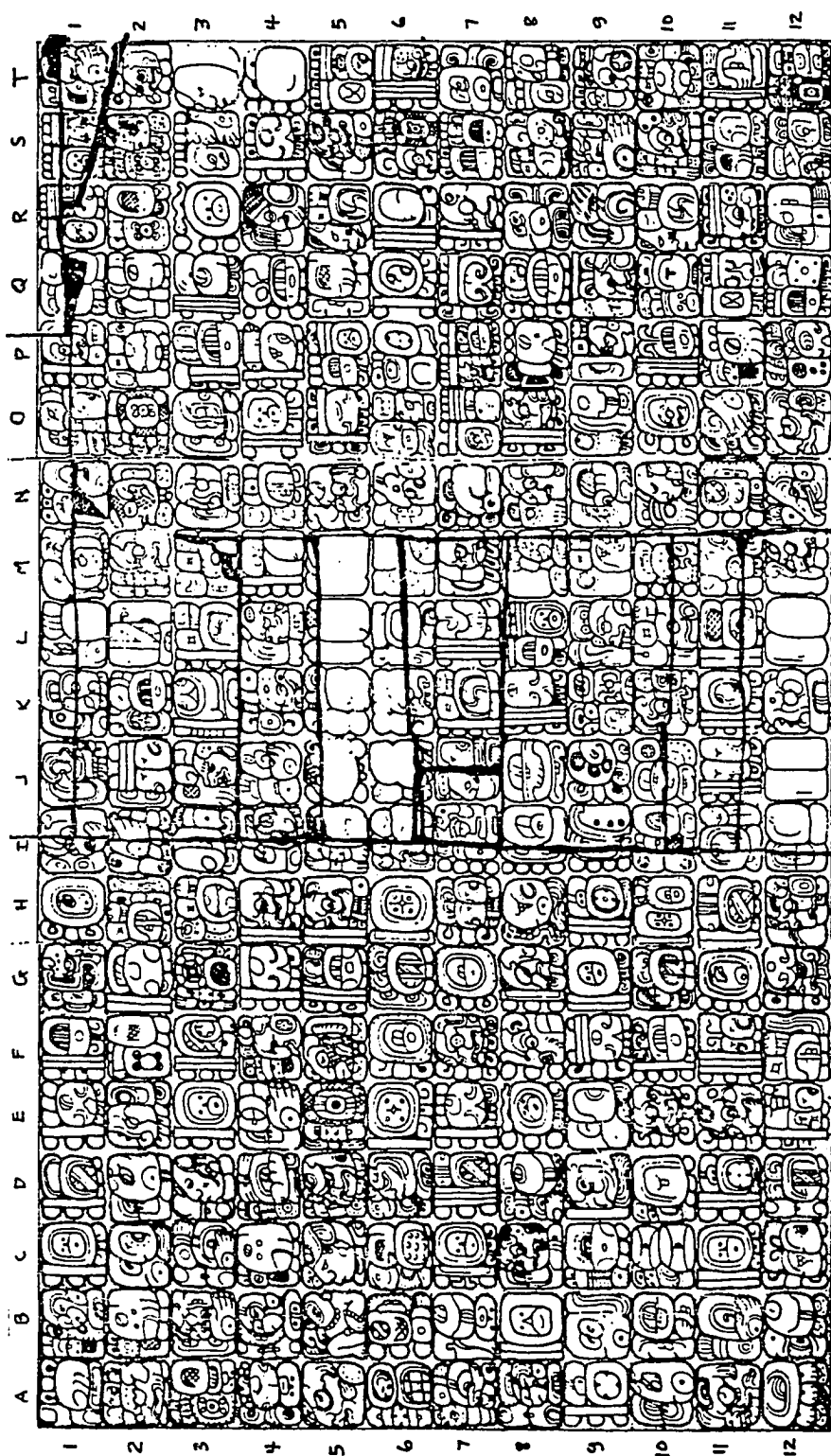
Sarcophagus Lid Edge



Temple of the Inscriptions, East Panel



Temple of the Inscriptions, Middle Panel

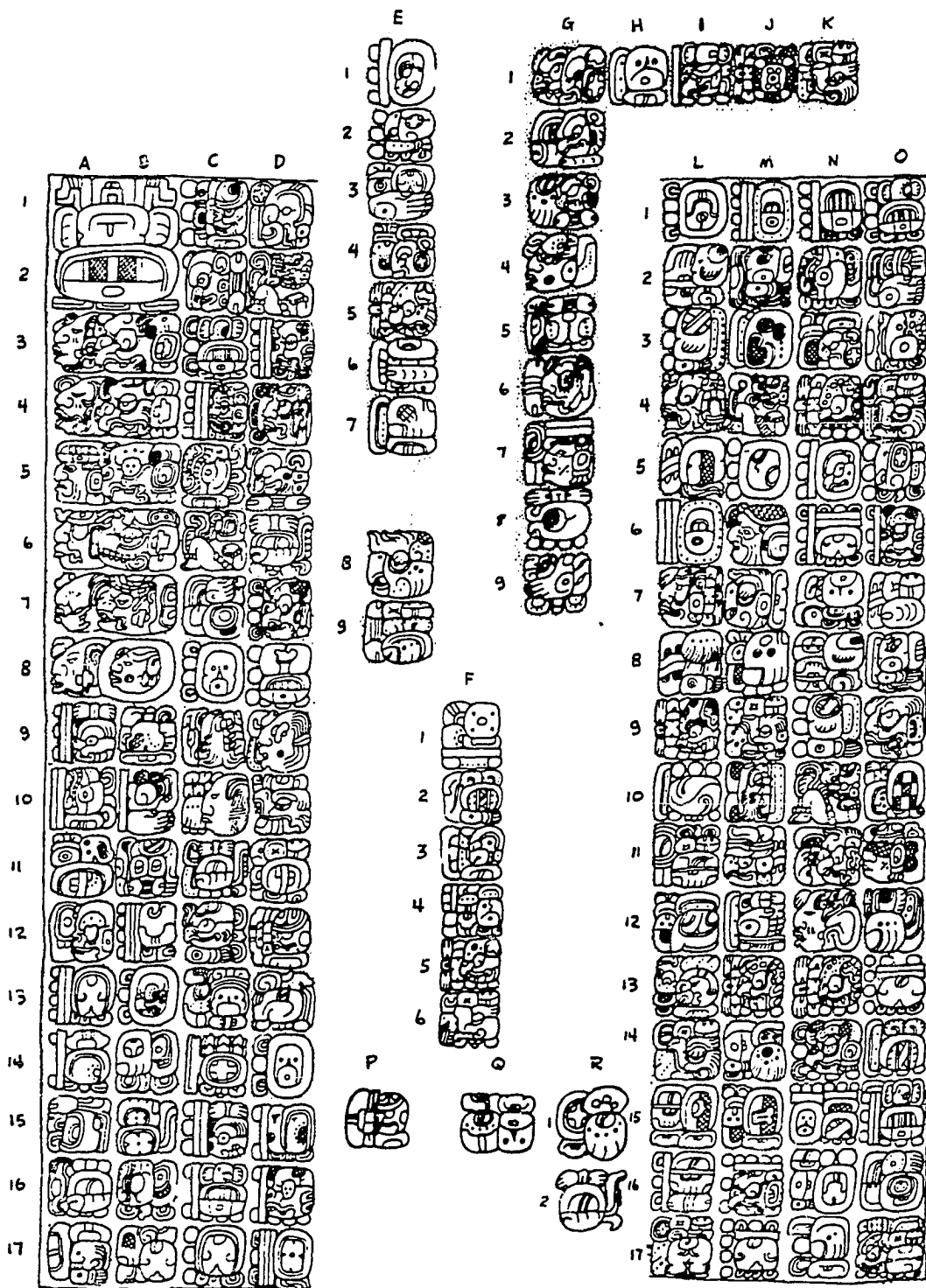


Temple of the Inscriptions, West Panel

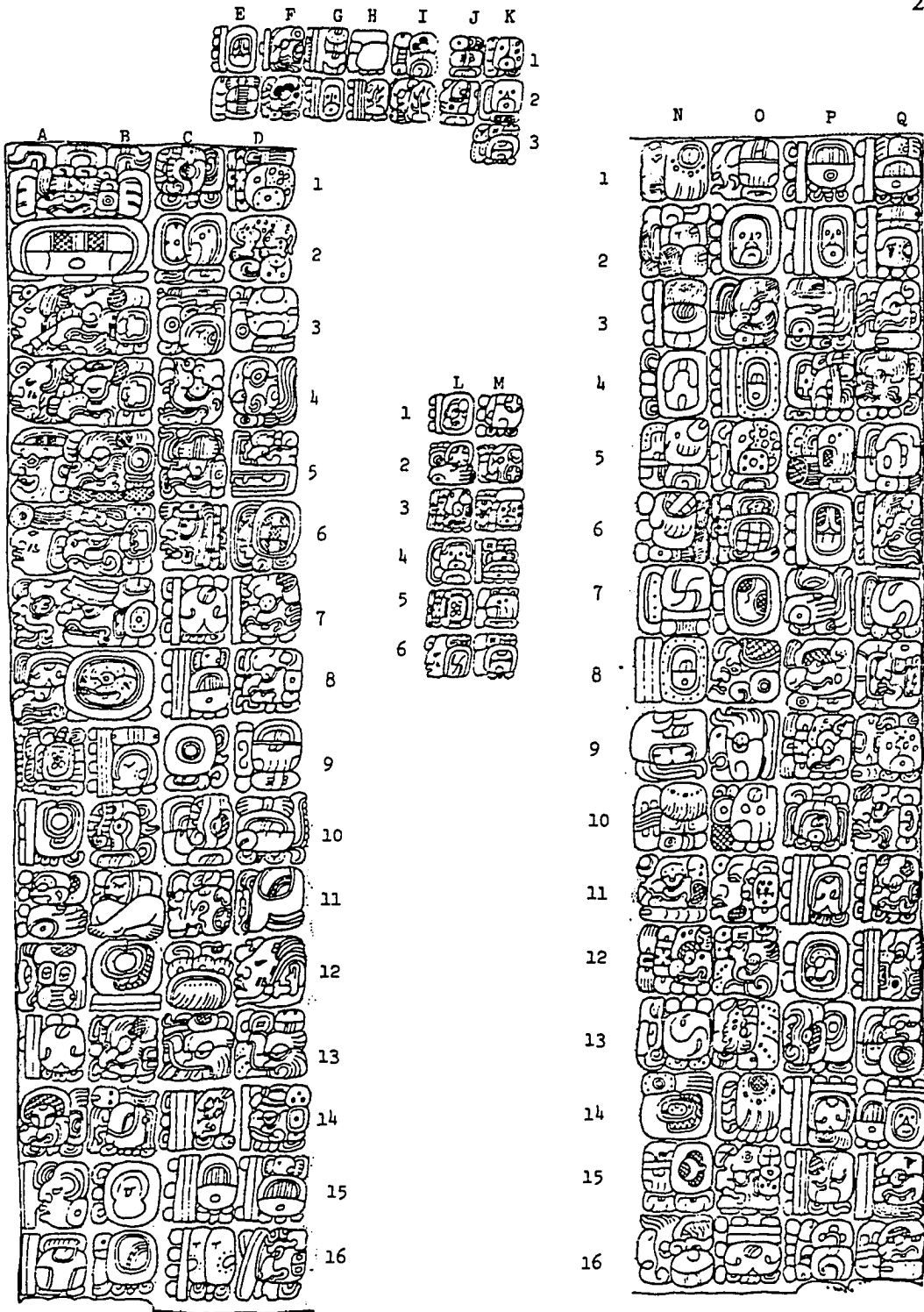
G H I J K L M N

	A	B	C	D	E	F		G	H	I	J	K	L	M	N		O	P	Q	R	S	T	U
1																							
2																							
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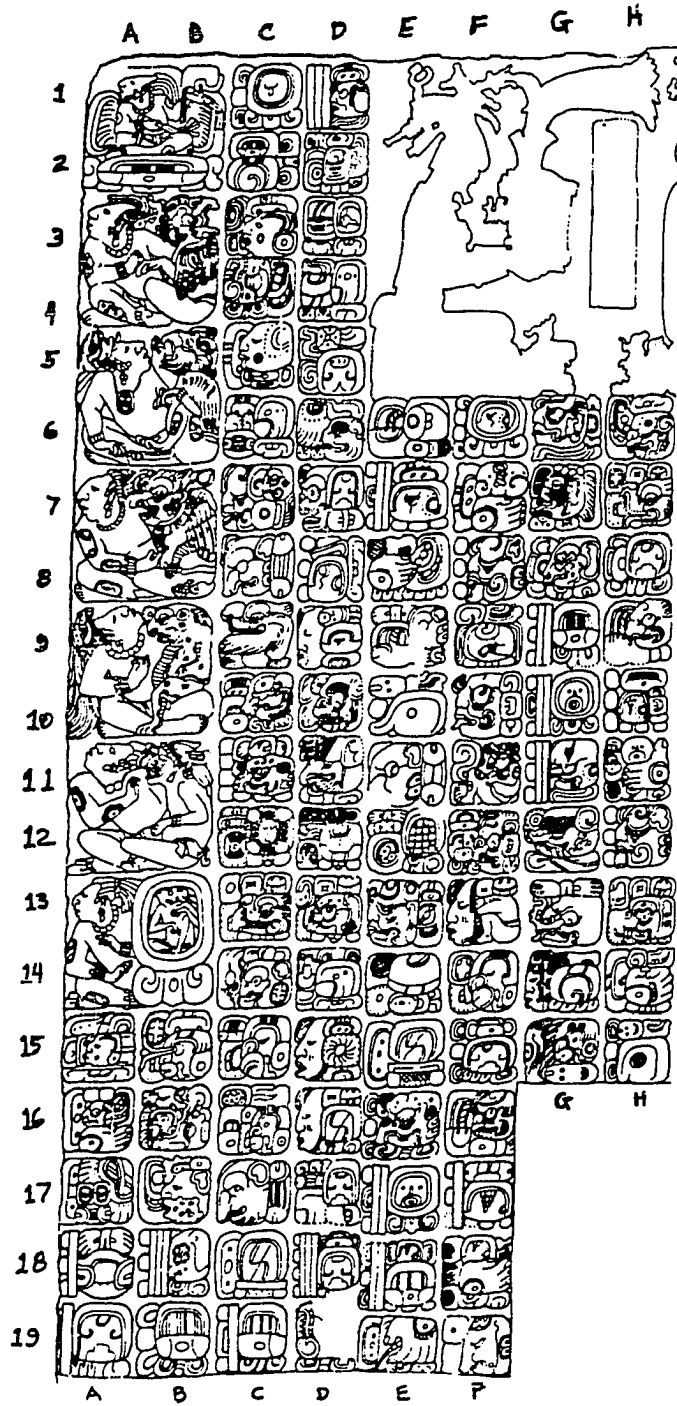
Tablet of the Cross



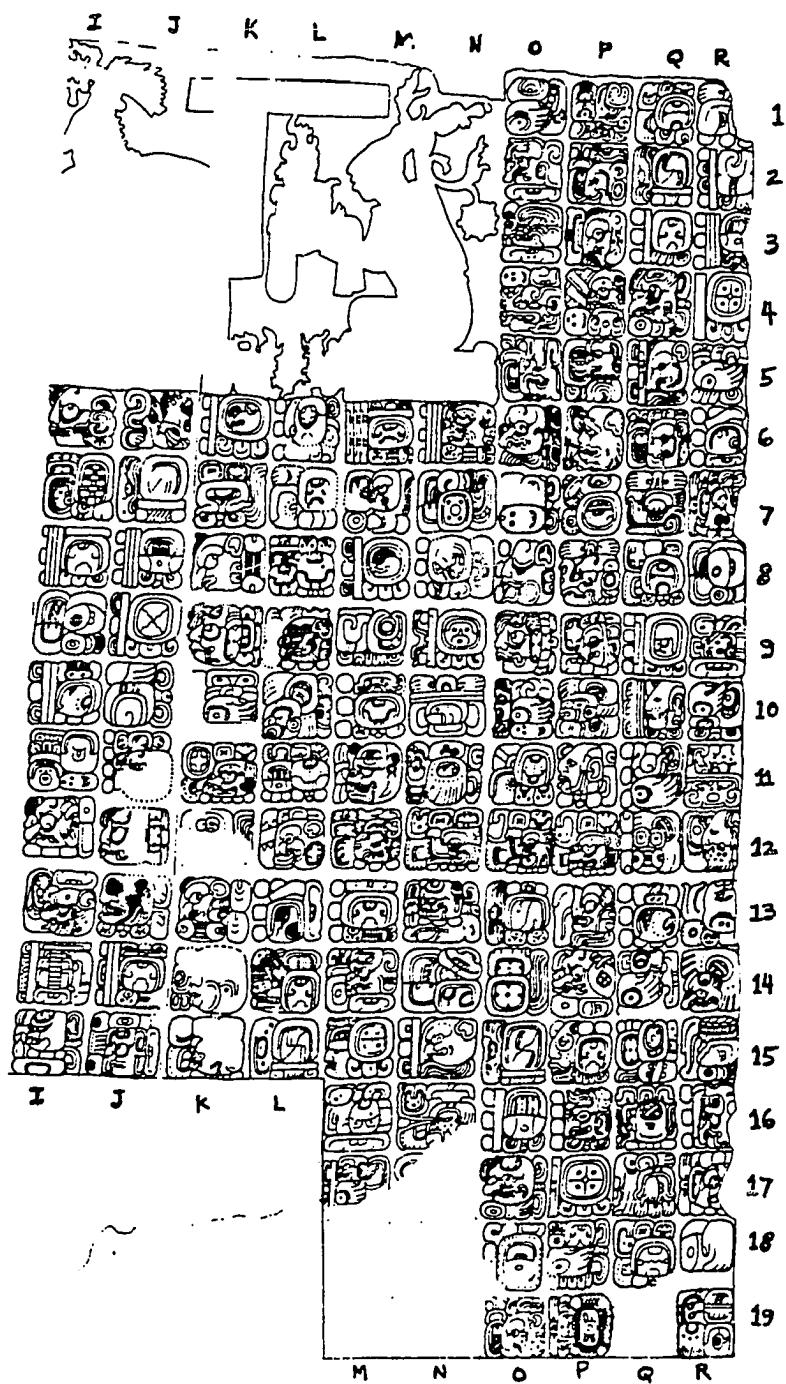
Tablet of the Foliated Cross



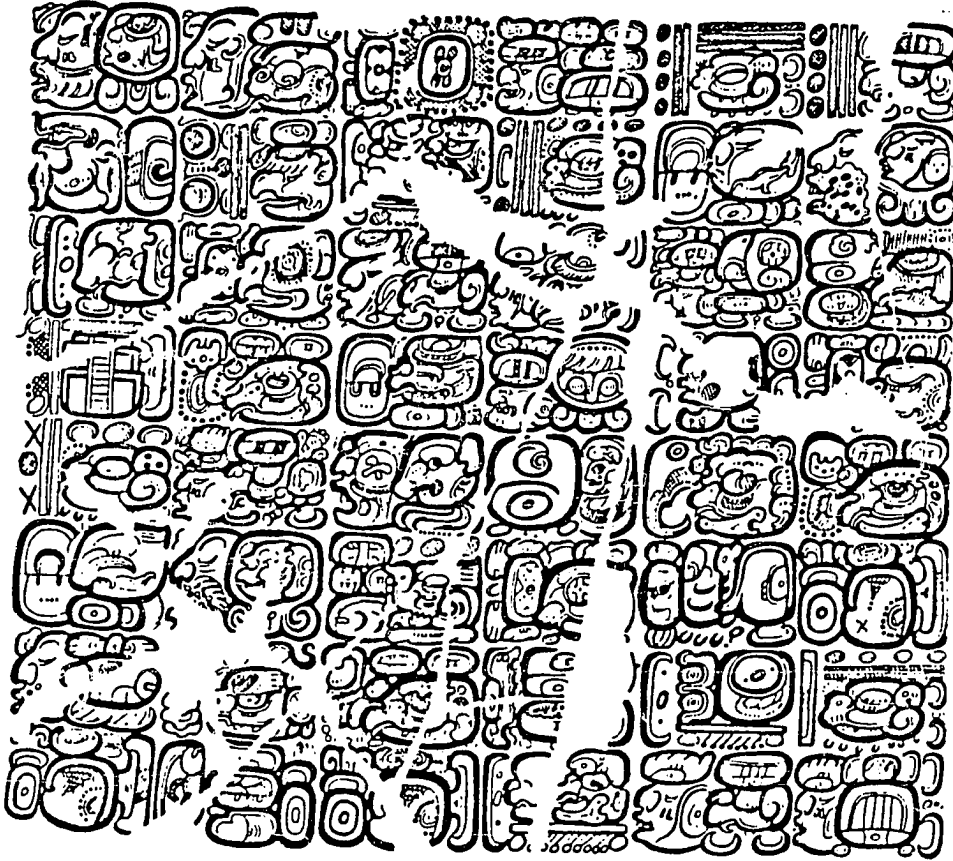
Tablet of the Sun



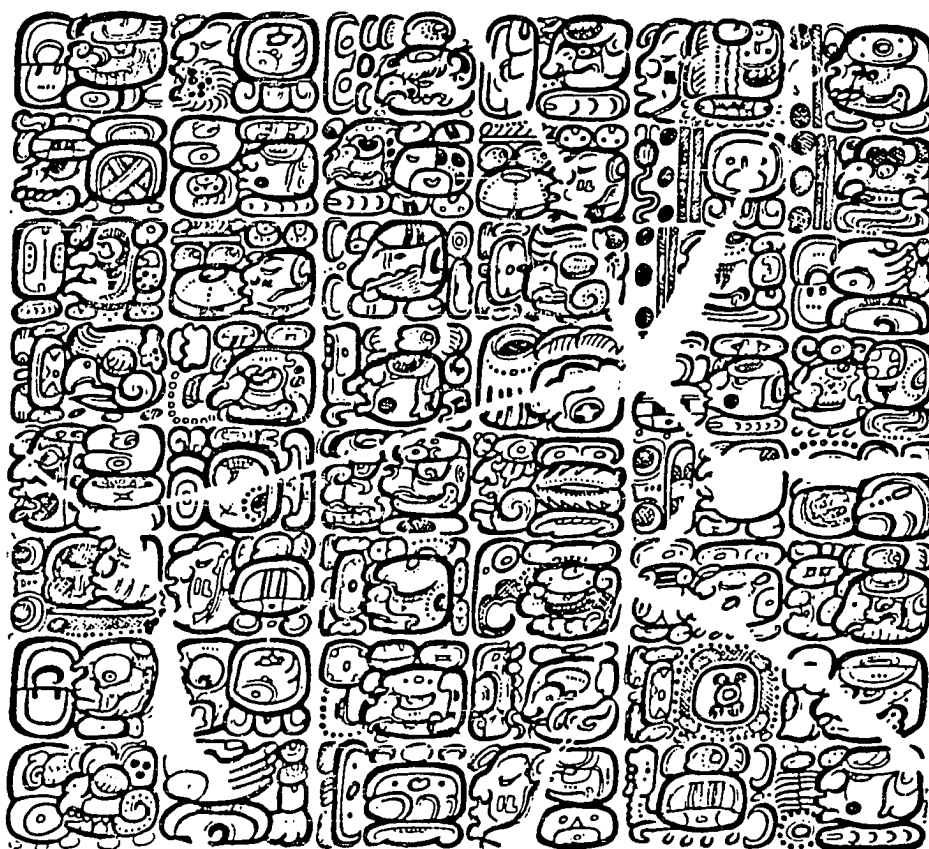
Palace Tablet, left half



Palace Tablet, right half



Tablet of the 96 Glyphs, left half



Tablet of the 96 Glyphs, right half

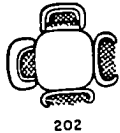
Appendix II. Illustrations of Syllabic Signs.

pi



177

pa



202



567 a



586 b



602



1023

po



687 a

pu



785 a

785 b

bi



585 a



585 b

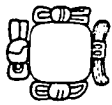


585 c



1029

ba



60



251



551



558

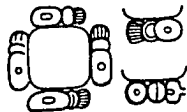


757



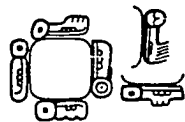
788

ti



59

te



87

ta



51



53



103



113



245



565 a



565 b



565 c

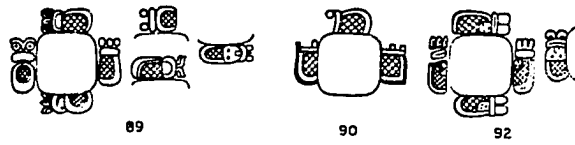


747 b

to



tu



tzi



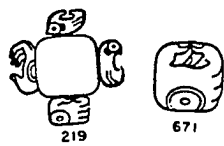
tzo/tzu



tz'i



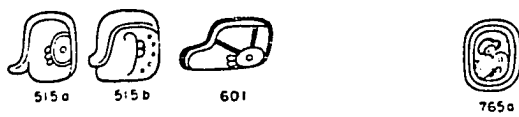
chi



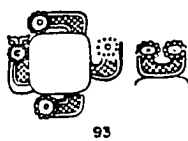
che



cho/chu



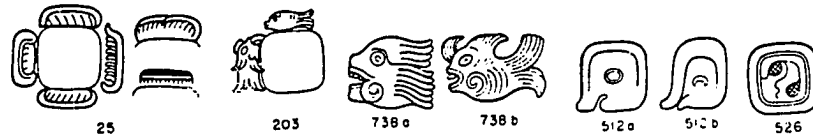
ch'a



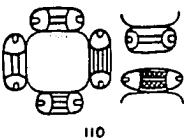
ki



ka



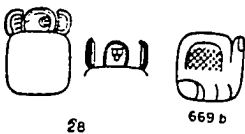
ko



ku



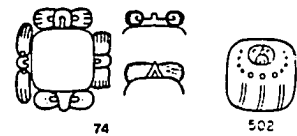
k'a



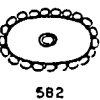
k'u



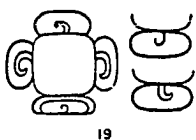
ma



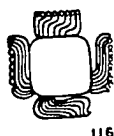
mo



mu



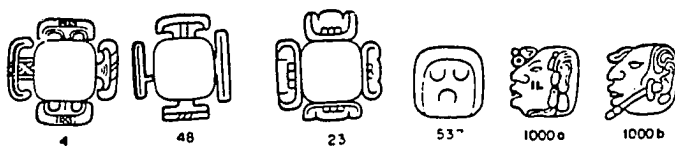
ni



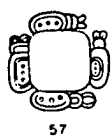
ne



na



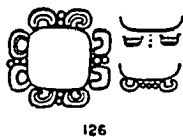
si



se



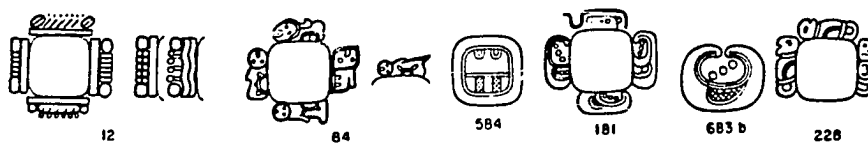
xi



xo

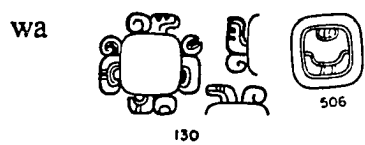
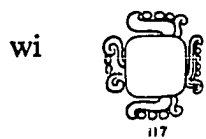
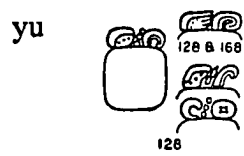
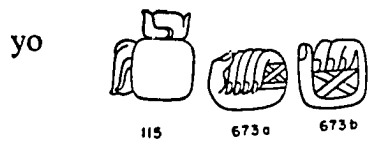
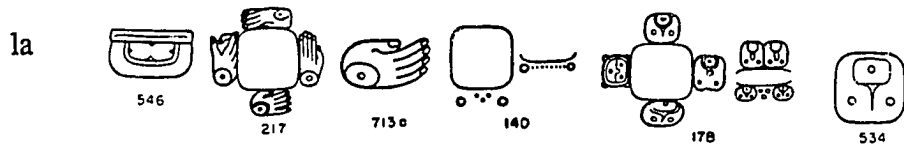
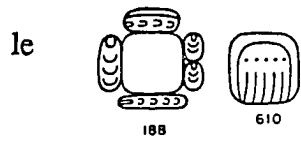
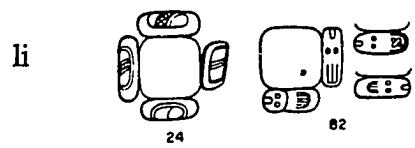


j/ha



j/hu





7e

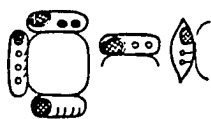


542a

7o



155

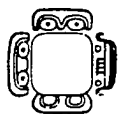


279



280

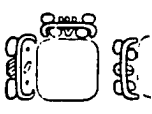
7u



1



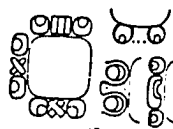
3



10



11



13



105



191



204



205



738 c



741 a



741 b



741 c



230



231



232



513

Sources for Figures in Appendices I and II

Appendix I:

Tableritos (Schele & Mathews 1979:#36)

Hieroglyphic Stairs (Robertson 1985:Fig.318)

Sarcophagus Lid Edge (Robertson 1974:19)

Temple of the Inscriptions, East, Middle, and West Panels (Schele 1986n:57-59)

Tablet of the Cross (Schele 1984n:58)

Tablet of the Foliated Cross (Schele 1984n:83)

Tablet of the Sun (Schele 1984n:99)

Palace Tablet (Schele 1988n:60f)

Tablet of the 96 Glyphs (Schele 1988n:96f)

Appendix II:

Thompson 1962:445-458.