MAYA HIEROGLYPHIC WRITING

Workbook for a Short Course on Maya Hieroglyphic Writing

Second Edition, 2011

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INTRODUCTION AND ACKNOWLEDGEMENTS

After a couple of years working with Linda Schele in the first workshops on Maya hieroglyphic writing at the University of Texas at Austin in the 1970s, Kathryn Josserand and I took on the job of carrying the workshops to the masses and went on the road, leading weekend workshops at museums, universities, and private study groups from Los Angeles to New York City and St. Paul to Miami. The goal of these introductory workshops was to introduce beginners to the essentials of Maya writing and encourage them to go on to the Texas workshops and "get their noses pierced," the metaphor we took from the Mixtec Codex Nuttall for initiation into the community of glyphers. From 1987 to 2006, the year of Kathryn's untimely death in Palenque, we taught more than seventy workshops at some thirty different venues as far south as Chiapas and Guatemala. Early on we developed our own style of teaching hieroglyphic writing and a workbook for use in our workshops. This workbook went without major changes for twenty years; a page or so would be added periodically as new ideas were developed.

This workbook constitutes a second edition of our basic introduction to Maya writing. It preserves most of the material from the first workbook, but adds more material, generally drawn from our 1991 grant report to National Endowment of Humanities (*Handbook of Classic Maya Inscriptions, Part I: The Western Lowlands*. Final Performance Report, NEH Grant RT-21090-89). The additions go beyond the basics and introduce the user to our work on Maya inscriptions as literature, a topic we frequently lectured about in conjunction with our workshops. Our analysis of the texts as literature comes from two sources: an internal analysis of the texts themselves, and an intimate acquaintance with modern Maya storytellers, particularly in the Chol area. We started field work on Chol in 1978, and within a few years had begun to appreciate similarities in Classic and modern narratives that reflected a very conservative tradition of literature, oral and written. Bringing together those two eras of Maya literature has been our major contribution to contemporary Maya studies.

Part I: The Classic Maya and Maya Hieroglyphic Writing introduces the Maya and the principles of Classic Maya writing and goes on to point out the similarities between the Classic narrative texts and modern Maya narratives and formal speech. **Part II: An Introduction to Classic Maya Inscriptions** contains most of what the original edition of the workbook included, beginning with numbers, going on to a detailed discussion of the calendar, and ending with some comments on discourse features. **Part III: Hieroglyphic Grammar and Lexicon** presents our version of Classic Maya grammar and then lists common examples of hieroglyphic verbs, nouns, and adjectives. **Part IV: How to Approach a Hieroglyphic Inscription** is a step-by-step guide to our methodology of moving from the easy to the difficult in first looking at an inscription, with a sample text to illustrate the technique (get your colored pencils ready!).

In assembling our workbooks, we have relied greatly on the work of other colleagues. Thank God for the people who produce the drawings of hieroglyphic monuments! Our work begins when a good drawing is produced. In fact, our work usually has begun after not only the drawing is produced, but a basic level of analysis has been prepared by an epigrapher, resolving problems and sketching out the contents of an inscription. For this preliminary treatment, we owe debts of gratitude to many people, and the credits for their work used here are found separately, below.

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Figure I-1. Mesoamerican Languages

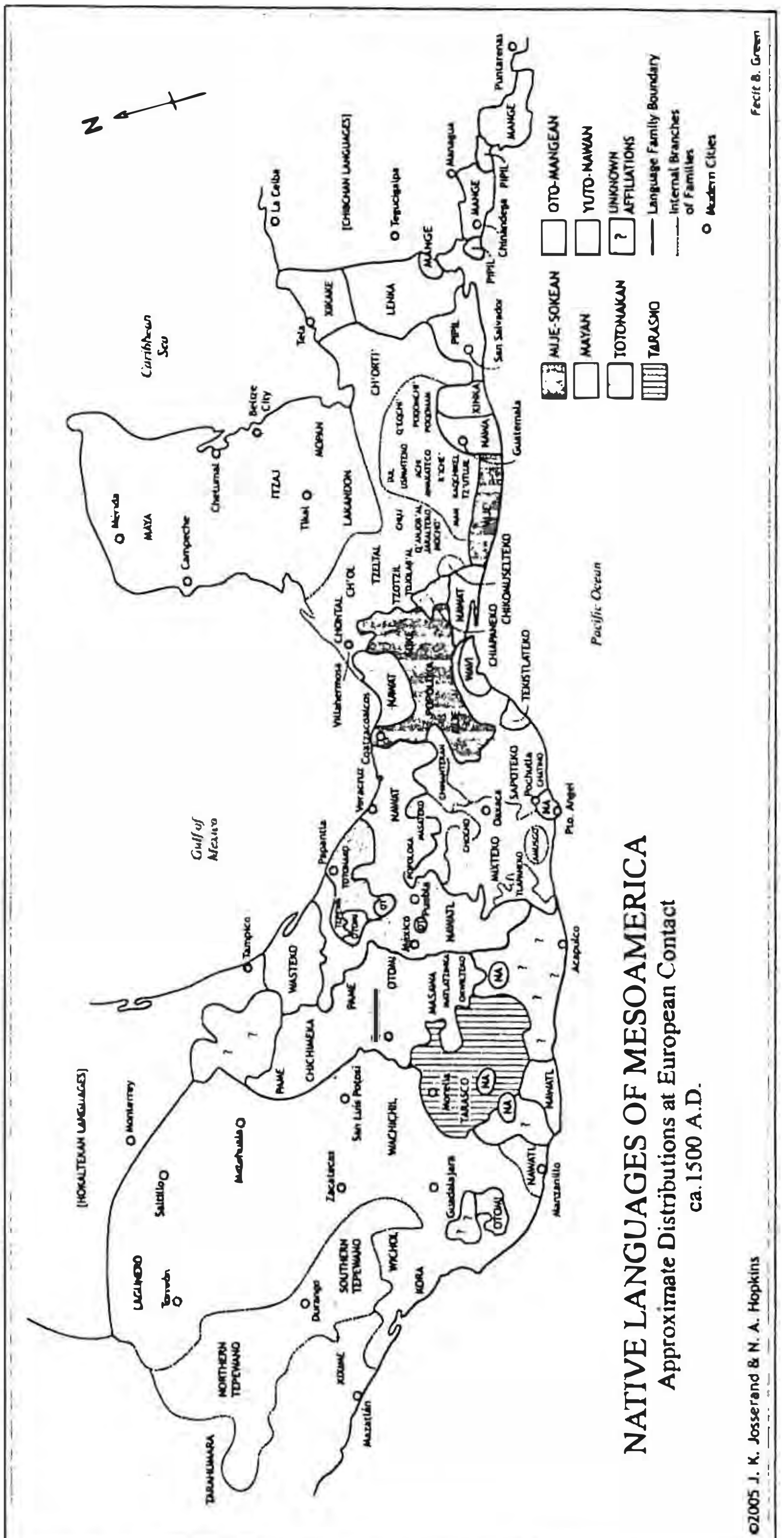


Figure I-2. The Maya Area

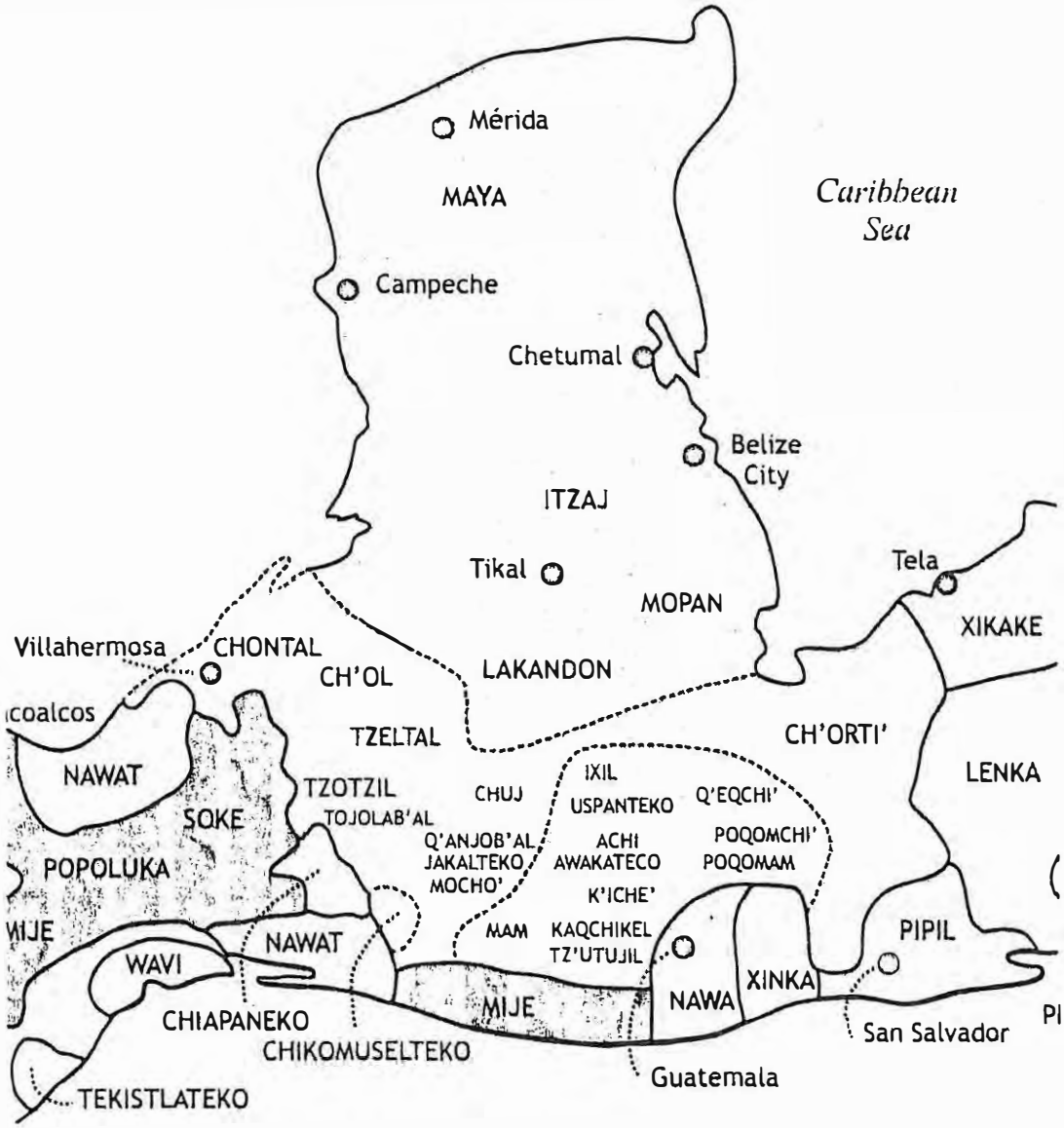


Figure I-3. Chronological Table (Coe 2005:10)

DATES Calibrated	PERIODS	SOUTHERN AREA		CENTRAL AREA	NORTHERN AREA	SIGNIFICANT DEVELOPMENTS
		Pacific Coast	Highlands			
1530	Late Post-Classic	Aztec Xoconocho	Mixco Viejo	↑ Tayasal	Independent states Mayapan	*Spanish Conquest* *Highland city-states* *League of Mayapan*
1200	Early Post-Classic	Tohil Plumbate	Ayampuk		Toltec Chichen	*Toltec hegemony in Yucatan*
925	Terminal Classic	Cotzumalhuapa	Quen Santo	Bayal/ Tepeu 3	Puuk, Maya Chichen	*Toltec arrive in Yucatan* *Classic Maya collapse, Putun ascendancy*
800	Late Classic		Amatle- Pamplona	Tepeu 2 1	Early Coba	*Bonampak murals* *Height of Maya civilization*
600	Early Classic	Tiquisate	Esperanza	3 Tzak'ol 2 1	Regional styles, Acanceh	*Reign of Janahb Pakal at Palenque* *Teotihuacan interference and influence*
250	Late Preclassic	↑ Izapan styles Crucero	Aurora Santa Clara Miraflores	Matzanel Holmul I Chikanel	Late Preclassic	*First lowland Maya dated stela at Tikal* *Massive pyramid-building in lowlands* *Spread of Izapan civilization, calendar, writing*
AD / BC 300	Middle Preclassic	Conchas Jocotal	Las Charcas Arévalo	Mamom Xe, Swasey	Middle Preclassic	*Earliest lowland Maya villages*
1000	Early Preclassic	Cuadros Cherla Ocós Locona Barra				*Early Olmec influence on Pacific Coast* *Beginnings of social stratification* *Origins of village life, pottery, figurines*
1800	Archaic	Chantuto		Belize Archaic		*Hunting, fishing, gathering*
3000						

Chronological Table

PART I:
THE CLASSIC MAYA AND MAYA HIEROGLYPHIC WRITING

The Maya are Native Americans who have occupied parts of what is now southern Mexico and Central America for thousands of years (Fig. I-1). During the Classic period, roughly the first millennium of the Christian era, one of the world's most advanced civilizations flourished in this area, and it was the Maya who were the bearers of this great tradition. The Classic Maya had advanced mathematics, extensive knowledge of astronomy, the world's most accurate calendar, and a writing system which they used to record the major events of their history.

After about A D 1000, Maya civilization went into a decline, and the high culture maintained by the royal courts disappeared over much of the area. By the time Europeans arrived in the sixteenth century AD, Maya high culture survived only in northern Yucatan, where the first missionaries were able to record basic information on the calendar, the writing system, and other aspects of Maya culture and society. But the Europeans then crushed resistance to foreign rule, burned the books of knowledge, and destroyed what remained of native high culture. The Maya rulers were replaced or merged with the Colonial Spanish governors, and the rest of the Maya were reduced to the status of subjugated peasantry.

Today, there are several million speakers of Mayan languages living in the Maya area: perhaps a million speakers of Yucatec Maya in Yucatan, Campeche, and Quintana Roo (Mexico); another million speaking various languages in the foothills around the base of the Yucatan peninsula, in Chiapas (Mexico) and northern Guatemala, and over a million speakers of other Mayan languages in highland Guatemala. For the most part, until recent times, these Maya were subsistence farmers practicing a simple life style far removed from the glory of their ancestors' courts. But many aspects of Classic culture have survived the centuries, and the Maya in various regions still use the ancient calendar, calculate by the same mathematics, and tell stories with mythological and historical content using the rhetorical devices of Classic literature.

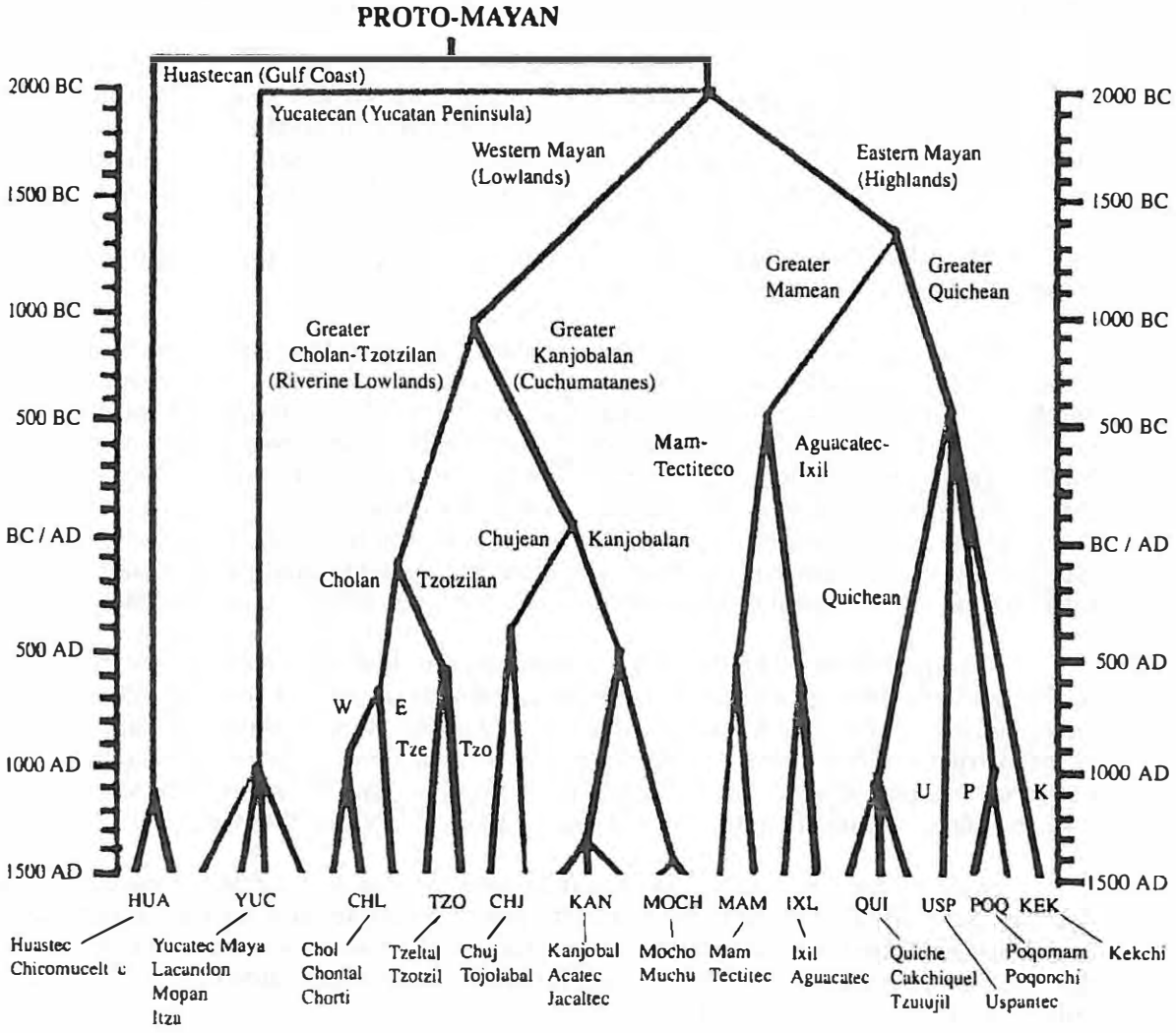
A combination of archaeology, epigraphy (studying the monuments left by the Classic Maya), and ethnohistory (information in the documents preserved from the sixteenth century and later Colonial period), and the knowledge and lore of the modern Maya has made it possible for us to reconstruct much of Classic culture. One of the most exciting recent developments has been the near total decipherment of the Classic Maya writing system, so that we can now read the Maya's own records of the affairs of their rulers over a span of close to a thousand years.

Building on 150 years of slow, careful scholarship and suddenly booming, much of this decipherment has taken place in the last thirty years. Things are now moving so fast that knowledge is well ahead of the textbooks; there are few places to read about what is currently known. Much of the communication between scholars, and most of the communication of scholars with the general public, has taken place in workshops.

The term "Maya area" usually refers to all the area where Mayan languages are spoken now or are known to have been spoken in the past. This covers the eastern parts of the Mexican states of Chiapas and Tabasco, all of the states of Campeche, Yucatan, and Quintana Roo; Belize; all of Guatemala except the Pacific coastal plain; and the westernmost parts of El Salvador and Honduras (Fig. I-2).

Within this area there are several geographical regions. The most basic division is between Lowlands (to the north) and Highlands (to the south). This Lowland division corresponds roughly

Figure I-4. A Family Tree of Mayan Languages



to the area of high culture, where hieroglyphic inscriptions are found, except that the adjacent highland foothills are also included in this Maya Classic area – parts of the Highlands of Chiapas, the Guatemalan Cuchumatanes, the Maya Mountains of Belize, and the western highlands of Honduras are included in the Classic Maya area along with the adjacent Lowlands of the Yucatan Peninsula.

Mayan Languages

There are over fifty distinct languages in the Mayan family of languages, all ultimately descended from a single language (proto-Mayan) spoken some 4000 years ago, in the Archaic period of New World prehistory. As speakers of this language spread out over the area their descendants now occupy, they lost contact with one another and different regional languages emerged, similar to one another because of their common heritage, but no longer mutually intelligible. Linguists group these languages into four major groups: Huastecan, Yucatecan, Western and Eastern Mayan (Fig. I-4). Of these groups, Yucatecan and Cholan (part of Western Mayan) were the main languages of the Classic region. Speakers of other languages were surely involved in peripheral areas, and there is considerable evidence of bilingualism and interaction between languages.

Cholan predominated in the southern Lowlands, where the Preclassic and Early Classic cultures flourished. Yucatecan was the language of the northern Lowlands, more important in the Late Classic and Postclassic--and the area where Europeans first recorded Maya culture. Epigraphers use both Cholan and Yucatecan languages in their research, but recognize that some variety of Cholan is normally the language of the southern monuments, although the influence of Yucatecan is seen in the language of the late northern sites and the Postclassic Codices (the four books which survived the 16th century bookburning: the Dresden Codex, Paris Codex, Madrid Codex, and the Grolier Codex, named after the collections which house them).

Chronology

The development of cultures in southern Mesoamerica defines a series of periods whose names reflect what is going on in the Mayan area and adjacent areas at the time (Fig. I-3). The early time period, before the development of the Olmec civilization, is referred to as the Archaic (up to about 2000 BC). The period of Olmec cultural predominance, 2000 BC to about AD 150, is called the Preclassic of Formative, since it foreshadows later developments. The period of transition, when the Maya began to display the traits of social stratification and divine rulership, begins in the Late Preclassic and runs through the Protoclassic (approximately AD 150-300).

The Classic period is arbitrarily taken to begin with the appearance of the first monuments known to be recorded in a peculiarly Mayan way, around AD 300 (e.g., Tikal Stela 29, AD 292). From this point through the Classic, monuments were dated with what is called the Initial Series, a standard set of data which fixes the recorded event in time, and gives us an absolute chronology of Maya history. The Initial Series is based on a system used by the Olmecs, but the data are recorded in a new way, and this pattern becomes standardized throughout the Mayan area. The Classic period ends with the last known monuments with dates recorded in that fashion, around AD 900-1000. Later dates use the same calendar, but do not give the full set of information and allow for a degree of speculation about just when the events took place.

The Classic period is traditionally divided into Early Classic (AD 300-600) and Late Classic (AD 600-900), basically the periods before and after the fall of Teotihuacan in Central Mexico, which had repercussions all the way into the Mayan area. Many scholars now divide the Classic

into much finer subdivisions, distinguishing Early, Middle, Late and Terminal Classic periods, as well as the sub-divisions of the Post Classic period necessary to account for the later cultural developments in the northern Yucatan area.

Another way of dating events in the Mayan area is to use the dates used by the Maya themselves. This approach sidesteps the problems involved in correlating the Mayan calendar with the European one, but has the disadvantage of being absolutely meaningless to anyone not cognizant of Maya dates. On the other hand, when you are working with a monument which records all the events in the Mayan calendar, it is bothersome to have to keep converting them to European equivalents, so sooner or later you give up and begin to work in Mayan time. A chronology chart is an easy guide to the conversion between the two chronological systems (see the chart in Fig. 29, below).

Maya and Earlier Writing

The writing system used by the Classic Maya grew out of earlier writing developed by their neighbors to the West, the Olmec, who spoke languages of the Mixe-Zoquean family (unrelated to Mayan). The earliest evidence of high culture in Mesoamerica is found in the Olmec or Mixe-Zoque area. At one time or another, from the second through the first millennium BC, the Olmec and related cultures covered a large expanse of territory. Although the Olmec heartland is thought of as the Gulf Coast lowlands of Veracruz and Tabasco, their presence can be detected as far north as the Valley of Mexico, in the Balsas River drainage of Guerrero, and in the Highlands of Oaxaca. To the south, Olmec and related cultures are found across the Isthmus of Tehuantepec to the Pacific Coast, up into the Chiapas highlands, and along the Chiapas and Guatemalan Pacific coast to El Salvador. Long before the Maya, the Olmec recorded dates with the calendar and time-counting system which the Maya would later use (seen on Chiapa de Corzo, Stela 2, dated 36 BC, and on Tres Zapotes, Stela C, dated 31 BC). A newly-discovered monument (La Mojarra, Stela 1; AD 156) shows that they also recorded royal affairs in a well-developed hieroglyphic script, but few long inscriptions have been found; most examples are fragmentary and/or very brief (Meluzin 1987; Winfield 1988). John Justeson suggests that Maya writing derives from the Greater Izapan script, a variant of the southeastern Mesoamerican writing tradition associated with Mixean languages. The southern Veracruz, Tabasco and Chiapa de Corzo variant was associated with the Zoquean languages, and both variants contrast with the Oaxacan logographic script tradition, the forerunner of central Mexican writing (Justeson 1989:28).

The linguistic evidence – especially borrowed words – indicates that Mayans had contact with speakers of Mixe-Zoquean during an early period in their history. The words the Maya borrowed from Mixe-Zoque indicate that the Olmecs were culturally and socially superior to the early Maya (Campbell and Kaufman 1976); Mayas also borrowed the trappings of royalty and much of the iconography associated with rulers from the Olmec. In the first century BC, after centuries of contact, Mayas began to emulate the social organization of the Mixe-Zoque. The new Maya kings dressed in ceremonial clothing adorned with the symbols of Olmec rulership and religion, carried out ceremonies similar to those depicted on earlier monuments, recorded their acts in a script derived from Mixe-Zoquean writing, dated them according to the system used earlier by the Olmecs, and even called royal children *unen*, a Mixe-Zoquean word for 'child' (Hopkins 1991).

But while they were not the inventors of these cultural institutions, the Maya promptly put their own stamp on them, and Maya Classic culture is not just a continuation of what had gone before. The transfer of writing from one language group to another seems to have resulted in fundamental changes, so that Maya writing probably developed beyond the point reached by Olmec antecedents, and in any case the literary production of the Olmec is dwarfed by the diverse quality

and sheer quantity of texts left by the Maya. Because of its origins in a foreign language, the elements of Maya writing are not always understandable from Mayan data; the names of many of the calendric signs and the phonetic values of many of the basic glyphs have no meaning in Mayan languages that is related to the objects depicted.

Context and Content

The Maya wrote in almost every conceivable medium. Most of what we have from the Classic is on the best preserved materials, stone and ceramics. But we also have inscriptions carved in bone and wood, modeled in stucco, painted on walls, scratched on rocks, and written on paper. In fact, much early writing and much routine, non-ceremonial, writing must have been on perishable materials, and we have only a small sample of the whole from which to make our educated guesses.

To appreciate the bias that the loss of writing on perishable material gives us, imagine that the archaeologists of the future have no writing from our culture except that recorded on stone, paper having been burned and plastic melted in the holocaust, and metal having rusted away. They would have little to go on but monumental architecture: cornerstones and carvings over doorways. They would be limited to reading about who was governor, mayor and on the city council when public buildings were inaugurated, and would be treated to any number of grand slogans and famous quotations, but would have no direct descriptions of what was going on. In a way, this is similar to what we have from the Maya. What is recorded on the Classic monuments are the affairs of royalty, including ceremonies which obviously had great meaning for the population at the time. A number of monuments are in fact just like our cornerstones, and were carved to record the dedication of a building by a ruler. Many monuments were erected on the occasion of the end of a time period (usually a 20-year cycle called a **k'atun**), and say simply that So-and-So was king when the katun ended, and did the ceremonies that kings were expected to do on those occasions. Other monuments memorialize the accession of a king to power, or celebrate the anniversary of his accession; still others record the capture of important personages in battle.

We are fortunate that the Maya, in recording these events, often took the opportunity to go beyond the simple statement of the deed, and gave us important information about the actors: their birth dates, the dates of their accession to power and other events in their lives; their parentage, their royal titles, and the deities and mythological beings they are emulating in their royal acts.

Since a prominent ruler may be the protagonist of any number of monuments during his or her life, and be mentioned in later monuments by descendants or successors, a considerable amount of data may be accumulated over a series of inscriptions, and our knowledge of many rulers is as ample as what we know about many of our own historical figures. Whether this information is accurate, or whether we are innocent victims of a misleading propaganda campaign, is of course no more certain with data from Maya monuments than it is with any other kind of historical source. However, we are told very little about anyone but rulers and their immediate families, their subordinates, and their captives. What is being recorded is not Maya history, it is the history of the Maya elite, and we have no direct information from the written record about the rest of society.

The Writing System

Classic Maya writing makes use of a range of types of signs, some more related to phonological units, the others more related to conceptual units. These may be called **phonetic** and **logographic** signs, respectively. The same word may be written in the same text in a variety of ways, making use of the possibilities offered by these two types of signs as well as by graphic variants and stylistic variations in the visual representation of the individual signs. The Classic

Figure I-5. Logographic Signs

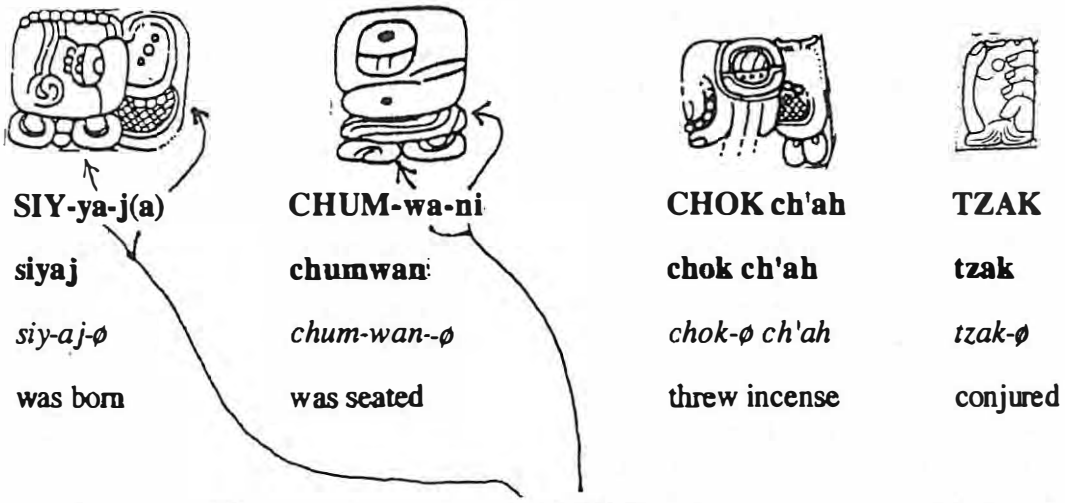


Figure I-6. Phonetic Signs

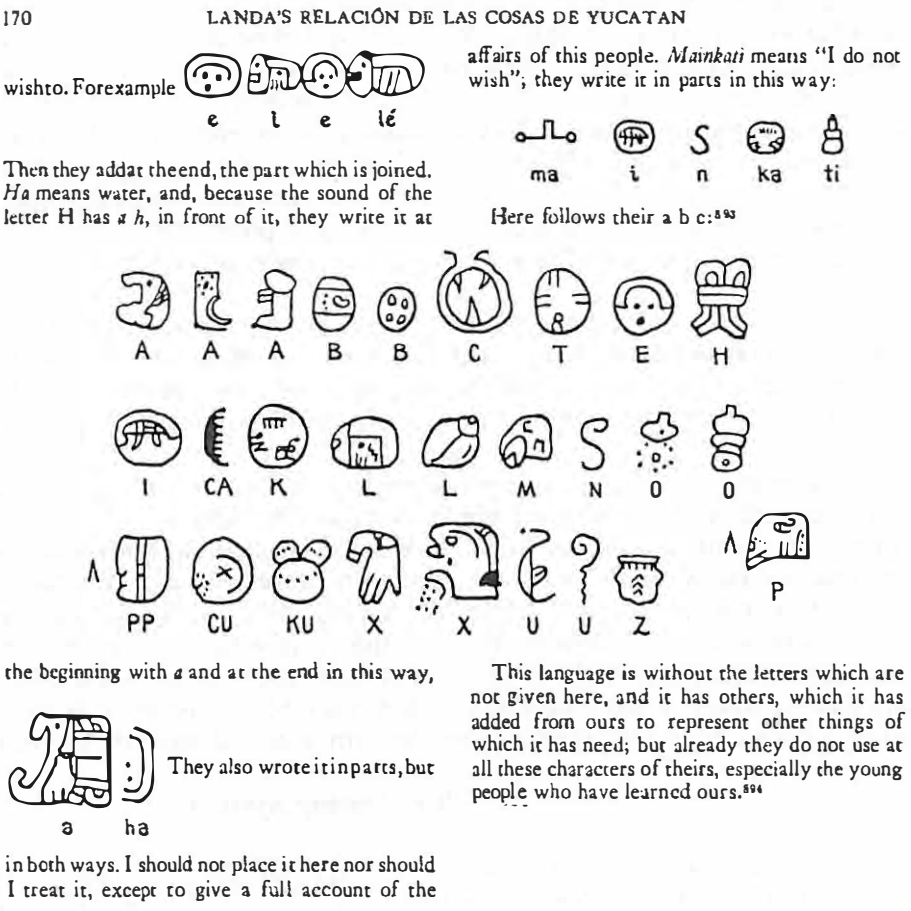


Figure I-7. Landa's "Alphabet"

Maya demonstrate an impressive ability to use word play, iconography, and other linguistic and visual dimensions to create truly magnificent monuments as rich in their literary style as Classic Maya art is in its iconographic displays.

A **logographic sign,** a "sign that represents a word" (G. Stuart 1988:7) is often simply a picture of a major element of the act or object represented. The meaning of many of these signs has been established by an examination of the scenes which accompany the text in which the glyph appears. Examples of this kind of sign (Fig. I-5) include a hand dribbling dots, representing the "scattering" event (the giving of an offering, usually by dropping incense into a fire). A profile of a seated torso represents the act of enthronement, i.e., the "seating" of a lord. Almost any figure bearing a certain kind of headband, the symbol of rulership, signifies 'lord'.

Other signs appear to be logographic but their origins are obscure: a hand holding a fish represents the vision experience which follows certain acts of bloodletting (Winters 1991); the upturned head of an unidentified reptilian or amphibian creature clearly represents birth. Still other apparently logographic signs, including many of the calendar signs, have no discernible visual referent. Their origins are perhaps lost in antiquity, being derived from earlier writing systems based on other languages (e.g., Olmec writing, which represented a Mixe-Zoquean language; cf. Campbell and Kaufman 1976).

Because it represents a particular word or meaning, a given logographic sign occurs in compounds which have related meanings. However, different logographic signs are used to represent various grammatical classes, including nouns, verbs, and attributives. The grammatical function of a sign is often clarified by accompanying morphological affixes, sets of phonetic signs which spell out derivational or inflectional morphemes. Whether or not they are so marked, the grammatical function of logographic signs can usually be inferred from the syntactic context. At the present time, we believe that most glyphic affixation is inflectional rather than derivational (cf. Schele 1982, Bricker 1986, Hofling 1987), which means that what is usually represented by the logographic sign is an inflectable stem: either a root which serves as a stem, or a stem formed from a root with derivational affixes.

Phonetic signs (Fig. I-6) most often represent syllables, usually of the shape CV (consonant plus vowel). Many of these signs were listed in a sixteenth century Maya "alphabet" recorded by Diego de Landa, bishop of Yucatan (Fig. I-7). For many years Landa's "alphabet," included in a manuscript which was discovered in Europe in the nineteenth century (Tozzer 1941), was considered by scholars to be at best useless and at worst a fabrication (Valentini 1880), as its relation to the signs in codices and monumental texts was unclear. It was not immediately obvious how the values given by Landa made sense out of any part of the inscriptions.

Now that the values of many phonetic signs have been independently established, we can reinterpret Landa's text and understand the phonetic values assigned to the glyphs he cites. It appears that Landa elicited the set of signs by asking for the Spanish letters by their names: **a, be, ce, de,** etc. He was given Maya syllable signs in response. Landa was thinking alphabetically and he expressed dismay at the "ponderousness" of the writing system and the seemingly irrational behavior of his informants. Landa gives as an example (Tozzer 1941:168) the spelling of the word *le* 'rope', remarking that he "having made them understand that there are two letters, they wrote it with three," adding at the end the whole word. The Maya text drawn into Landa's manuscript makes it clear that the informant wrote just what he was asked for: "**e-le-e,** le," the names of the letters which spell the word, and then the whole word. Landa must have said "*Escíbame 'lazo', ele-e, le*" ("Write 'rope', L, E, le"), and was given just that sequence of syllable signs in response. Many of Landa's signs have now been confirmed as phonetic signs (cf. D. Stuart 1987).

Figure I-8. A Maya Syllabary

Fig. 7-14 Syllabary, left half.

Fig. 7-15 Syllabary, right half.

In contrast to logographic signs, a given phonetic sign can occur in a variety of compounds which have no common element of meaning, but which share common phonological elements. While the syllabary that has been identified to date is not complete (not all consonant-vowel combinations are represented) no major **dimensions** of contrast are missing from the system (Stuart 1987:46-47). The distinction between syllables having glottalized and non-glottalized consonants, for instance, is clearly maintained in writing, although confusion in Colonial and modern language sources, ignorance of Mayan phonology, and unresolved questions of decipherment have led some scholars to argue that this is not the case (Jones 1984, Coggins 1988). All vowels and all but the rarest consonants (*t'*, *p'*) have been identified in at least some syllabic representations (Fig. I-8). The inventory of known signs grows constantly as scholarship advances.

Mayan words typically end in consonants rather than vowels, and by convention a final syllabic sign often represents C alone rather than CV, as first noted by the Russian scholar Yuri Knorosov (1952, 1956). There is a statistically notable preference for such final syllable signs to have the same vowel as the stem, or to have a phonetically similar vowel. This reflects the common Mayan allophonic pattern in which final consonant phonemes are followed by subphonemic aspiration in the form of an "echo syllable" composed of the (devoiced) consonant and a voiceless repeat of the preceding vowel. Thus, the name of the Palenque ruler Pakal, sometimes represented by the logographic sign for 'shield', may be spelled with three syllable signs, **pa-ka-la** 'Shield'. In accordance with the conventions for writing words ending in a consonant, the last vowel, a synharmonic repeat of the preceding vowel, is to be ignored.

In the transcription of Maya words written hieroglyphically, G. Stuart (1988) has set the current standards by simplifying the scheme proposed by Fox and Justeson (1984a). Logographic signs are transcribed in capital letters: **PAKAL**, 'Pakal (name), shield'. Phonetic signs are transcribed in lower case: **pa-ka-la**. Final synharmonic vowels to be ignored, or phonetic complements, are written between parentheses: **pa-ka-l(a)**, 'Pakal'; **K'IN-(ni)**, 'sun, day'.

Combinations of glyphs usually appear in "glyph blocks" (G. Stuart 1988:8) which are roughly square. These blocks often feature a larger, central, **main sign**, with one or more smaller **affixes** attached to the main sign. Glyph blocks have also been called "glygers" (from "glyph group," Kelley 1976) or "collocations" (Bricker 1986). In earlier research, the affixes were also called "prefixes," "superfixes," "subfixes," or "suffixes," according to their position to the left, above, below, or to the right of the main sign (Fig. I-9). It is now generally accepted that affixes may freely alternate between the prefix and superfix positions, on the one hand, and between the subfix and suffix positions on the other. Consequently the terrn **prefix** is applied to any affix which is to the left or above the main sign, while **suffix** is applied to any affix which is below or to the right of the main sign. Within a glyph block, the reading order of elements is basically left to right, top to bottom, with prefixes being read before the main sign, suffixes after it. A rule of thumb would be to read the upper left-hand corner first. There are many exceptions to this general rule, including many glyph blocks which have no clear main sign, but an educated reader has little trouble following the order of affixes.

There is a close but not inevitable correspondence between the graphic unit (a glyph block) and the syntactic unit (a word, i.e., a stem and its affixes). On the other hand, there is considerable artistic play with the representations of a given word or phrase, even within the same text. A single text may contain instances of a phrase written with various glyphs distributed across two or more glyph blocks, along with instances of the same phrase compressed into a single glyph block, or appearing as part of a glyph block. These possibilities are often manipulated for effect: a name or

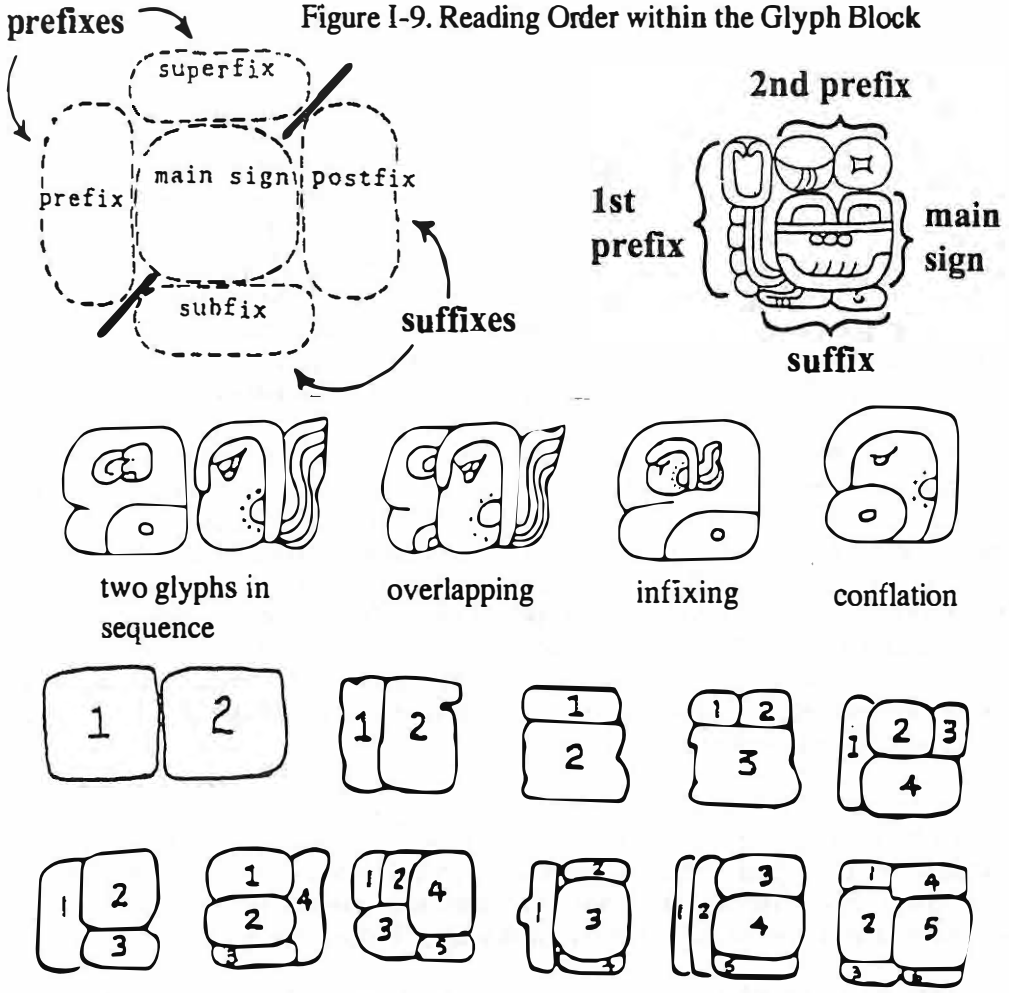


Figure I-9. Reading Order within the Glyph Block

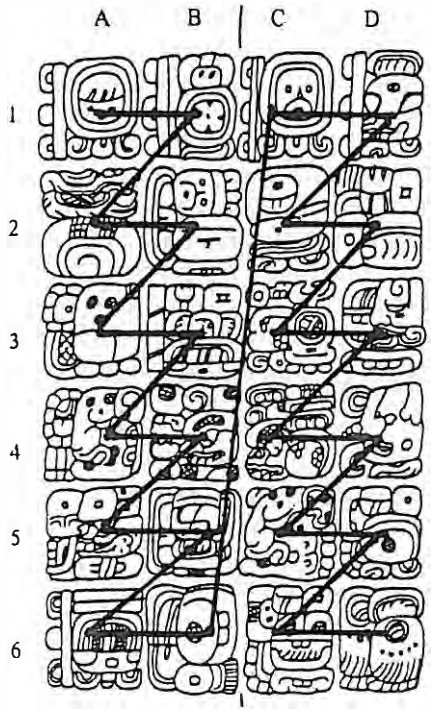


Figure I-10. Reading Order of Glyph Blocks

event may occupy more space when first mentioned, then be compressed into smaller spaces in later mentions. As with the reading order of affixes within glyph blocks, an educated reader can disambiguate all but the most creative selections and arrangements of glyphic elements.

Hieroglyphic Texts

Glyph blocks are arrayed to form texts. Short texts may consist of one or more glyph blocks, arranged in a single horizontal or vertical line, read from left to right or top to bottom. They may also be arranged in a line which bends from horizontal to vertical around an image, or otherwise accommodates the text to the art or architecture it accompanies. In long texts the most common arrangement of glyph blocks is in the form of a grid-like rectangle, within which the blocks are read in double columns, beginning at the top left corner of the text. Reading proceeds from the top left glyph block to the block at its right, then down to the next line to read left to right again (Fig. I-10). By convention of modern scholars, vertical columns of glyphs are given letters, left to right, and horizontal rows are numbered with arabic numerals from top to bottom. Thus in a normal long inscription the first glyph read is A1, the next B1, then A2, B2; A3, B3; A4, B4, etc.

Word Order

It has long been known that Maya hieroglyphic texts consisted of sets of sentences and that these sentences displayed the general characteristics of Mayan syntax (Proskouriakoff 1960, Knorozov 1965:159-176). The order of elements in a meaningful segment of hieroglyphic text is directly comparable to the order of words in a sentence, and changes in word order are among the most common indicators of informational importance. Normal, expected word order ("unmarked" order) does not stress any one part of the sentence over any other part. Unexpected, or "marked" word order focuses attention on a particular element within the sentence, and thus indicates its increased importance in the development of the narrative.

New information is often presented in marked constructions; old information is downplayed and may even be omitted from a sentence in order to highlight what remains. Important new information may be repeated several times, or elaborated on by adding extra bits of new information in each restatement.

In the hieroglyphic inscriptions, normal (expected, unmarked) word order is the same as most Mayan languages, and is characterized as "verb initial." This refers to the order of words in a simple Transitive sentence with only three elements – actor (subject), action (verb), and recipient of the action (object), that is, Subject, Verb, and Object, or, more technically, Agent, Verb, and Patient. In English, the normal order of these elements is SVO, Subject Verb Object ("the boy hit the ball"). For Mayan languages and for the hieroglyphic texts, the order of these elements is Verb Object Subject, or VOS. Any other order is considered to be "marked."

The rules of Maya grammar require that the Subject be marked by a pronoun attached to the verb; for Transitive verbs, this pronoun is prefixed, so it might appear that the Subject is now first, but this is not a change in order, since an independent Subject can still occur (optionally), in the normal, sentence-final position. The third-person verbal pronoun is one of the most common elements in any Maya language, as it serves two very important functions: besides being a verbal subject for Transitive verbs, it is also the Possessive Pronoun which precedes possessed nouns. Not surprisingly, the third-person verbal pronoun *u* (modern Chol *i)* 'he/she' was one of the earliest grammatical elements to be deciphered in Maya hieroglyphs (Glyph number 1, or T1, in Eric Thompson's 1962 catalog of Maya glyphs).

Figure I-11. Examples of Classic Syntax

VTR: **u-CH'AM yax-tun RULER1 Ch'uh YOCHIB Ajaw**
He-set [his] first stela Ruler 1, Holy Lord of Piedras Negras.

VIN: **i ụti 7 MANIK CHUM PAX**
And then, it came to be 7 Manik Seating of Pax.

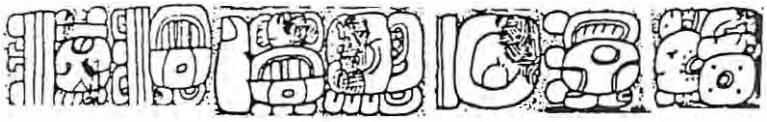
VPO: **CHUM-laj ta Ahawle K'inich Ajkal Mo' Nab'.**
Seated as Lineage Lord [was] K'inich Ajkal Mo' Nab'.

Figure I-12. Unmarked and Marked Word Order

i CH'AM-hun tu b'ah MAT [ta] 9 IK 0 SAK
Normal Word Order: The Temporal Phrase falls at the end of the sentence.

8 IX 7 YAX CH'AM-jun tu b'ah CHAK ZOTZ' b'a ajaw.
Marked Word Order: The Temporal Phrase is fronted to the begining.

Figure I-13. Backgrounding and Foregrounding

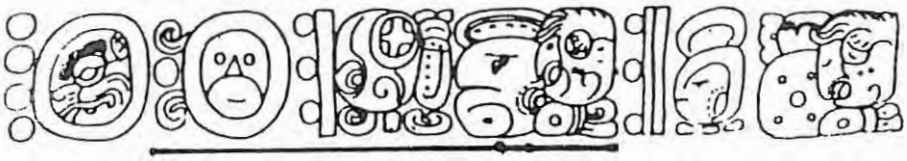


[tz'akaj] 17 k'in, 7 winal, 16 tun, 1 k'atun, SIY-aj-hi-y(a) [ta] 5 AHAU 3 ZEC,
[It had been] 17 days, 7 months, 16 years and 1 k'atun since [he] was born on 5 Ahau 3 Zec,

i u-CH'AM hun tu b'ah [ta] 5 Caban 0 Zotz'.
and then he took to himself the headband on 5 Caban Seating of Zotz'.

Figure I-14. Examples of Peak Events

u-nikil K'an Mo' Hix, u-huntan Ix Sak K'uk', **[ta] 8 AHAU 13 POP SIY-aj.**
Fronting: The Parentage Statement is fronted to the beginning of the sentence.



4 CHICCHAN 1 AHAU 8 KAYAB u-CHUM-tun Sak K'uk' 13 YAX neb'i Sak K'uk'
Sentence Insertion: The Period Ending is inserted in the Death Statement.

Sentences with Intransitive verbs or Positional verbs have only two elements, the Verb and its Subject. There is also an Existential verb in Chol and other Mayan languages, which may occur in the hieroglyphic texts; it is followed by a single noun phrase, its Subject. Other kinds of sentences can be formed with two elements, neither of which is a Verb, properly speaking. In these cases one of the elements acts as a Predicate, the equivalent of a Verb, and the other acts as its Subject. All of these sentence types are Verb-initial in Chol and most other Mayan languages, and normal order for simple sentences in the hieroglyphic inscriptions seems to be Verb-initial as well.

If other elements are added, beyond the verb, its object and its subject, then the word order is likely to change. The new elements may occur first, as is usually the case with Temporal Adverbs, or some of the previous elements may be dropped. This seems to be related to restrictions on the number and length of noun phrases following the verb. (Rules governing run-on sentences existed even for the Classic Maya!) Thus, if both Object and Indirect Object are specified (or Object and Instrument, or Object and Location), the Subject may be omitted. Presumably the Subject is already "known" in these cases, that is, it is "old information." Any deviation from unmarked word order can be taken as an indication of special importance, or **foregrounding**. In hieroglyphic texts, the grammatical techniques for foregrounding include elaboration, fronting, promotion, and "marked" syntax or unusual grammar (Josserand 1989; see also Hofling 1989 for a discussion of highlighting in the Dresden Codex).

Elaboration can be as simple as adding to a ruler's name-phrase his or her titles, parentage, and other attributives. Coupleting, the repetition of a syntactic structure with slightly altered lexicon, can be considered a kind of elaboration, and indicates foregrounding. Fronting usually involves moving a phrase (subject or other argument) from its unmarked, post-verbal position to a pre-verbal one. Sentence-initial temporal phrases (e.g., Calendar Rounds) can be considered to have been fronted from an unmarked post-verbal position, and therefore to have been foregrounded.

Phrases which normally occur unmarked as low-level sentence constituents may be promoted to a higher level in a new sentence. Thus, the information which may be stated in an unmarked fashion as a temporal adverb (e.g., a Calendar Round), may be foregrounded by promoting it to Subject of the verb **ut** 'to come to pass' in an independent sentence. On the other hand, deletion of expected sentence elements (notably Subjects) in a string of sentences heightens dramatic tension, and has the effect of foregrounding the information (e.g., the name of the protagonist) when it is finally stated.

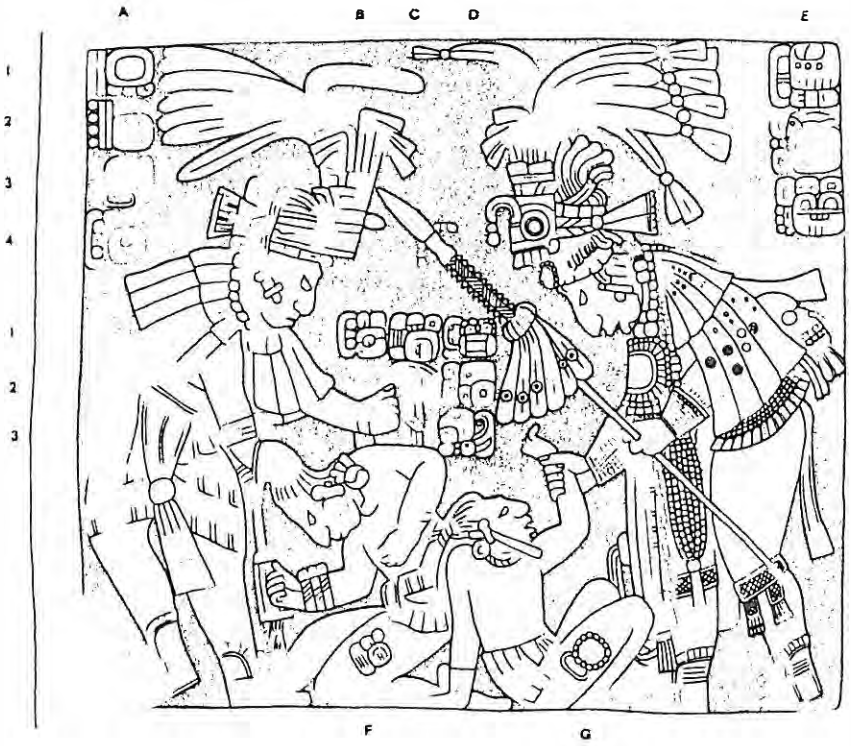
Sentences may be conjoined in such a way that one is clearly foregrounded with respect to the other (which is **backgrounded**). It is common to mark the verb of the foregrounded clause with the sentence conjunction **i** 'and then', while the backgrounded verb is marked with the perfective aspect suffix **-ya** (writing the suffix *-y*).

Finally, "unusual" syntax may also indicate foregrounding. In both Classical and modern Mayan literature, the peak events of a narrative are "zones of turbulence" (Longacre 1985). This turbulence may take the form of a combination of the foregrounding devices just discussed, or it can be more extreme. Perhaps the most extreme examples of syntactic turbulence in hieroglyphic texts are those several known instances in which an entire sentence is inserted into the middle of another sentence, as in the text from the Sarcophagus Rim, Palenque.

Text Composition

Maya hieroglyphic texts usually consist of one or more complete sentences; a few texts or discrete sections of text represent phrases rather than sentences. In these cases, the text is naming

Fig. I-15, Yaxchilan Lintel 8



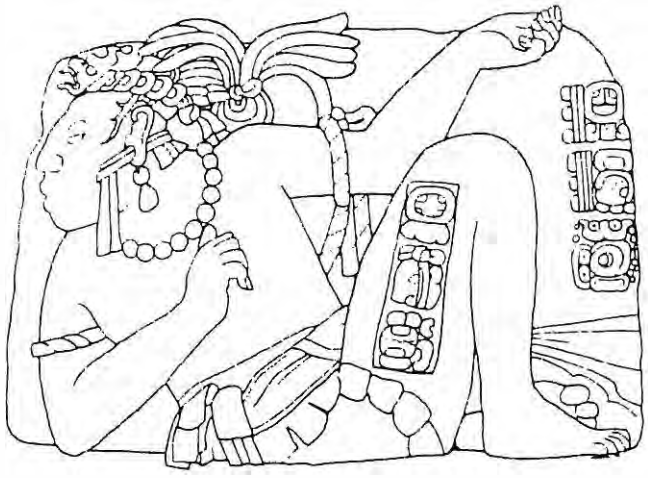


Figure I-16. Tonina, Monument 22

people or objects; the name of a pictured protagonist may appear near his face or head, or actually on the body. This is especially true for captives, such as Bird Jaguar's captive Jeweled Skull, whose name appears on his thigh on Yaxchilán Lintel 8 (Fig. I-15, Graham and von Euw 1977: 27), or king K'an Hoy Chitam of Palenque, shown as a captive on a monument found at Tonina (Fig. I-16).

Some artifacts, particularly small portable objects, bear simple statements giving the ownership of the object: "This is the sacrificial bowl of So-and-so" (Houston, Stuart and Taube 1989). Others bear a statement of authorship: "So-and-so painted this vase" (D. Stuart 1989b). Many stone monuments bear, along with their main text, smaller, often incised inscriptions which have been read as artists' or craftsmen's signatures (D. Stuart 1989b).

Probably the majority of inscriptions, however, and certainly the ones most interesting in terms of discourse structure, are longer texts. Long texts are usually historical and narrative in nature, that is, they tell a story, and they include specific dates or other temporal references that fix the reported event or series of events firmly in time. Such texts have translations resembling the following: "On such-and-such a date, So-and-so became ruler. So many days later, on another date, he performed a blood sacrifice; so many years after that, it was the end of a major time period." This genre of texts has the richest known displays of discourse phenomena.

Long historical texts may contain dozens of sentences, recording events which are placed chronologically with respect to each other through extensive use of dates in the Maya calendric system. The statement of a date itself may be very elaborate, involving a number of sentences, as in the Initial Series and Supplementary Series sequences which frequently open Classic texts. Or, a date may appear in a reduced form, perhaps only a Calendar Round. The events in a text may be tied to each other by statements of time elapsed (Distance Numbers) between dates (Calendar Rounds). Or events may be tied to unique chronological landmarks (e.g., Period Endings, ends of major time periods in the Long Count) to eliminate any possible chronological ambiguity. The function of these texts appears to be the recording of history, and this function is served only if the chronological place of the various events is clearly stated. A considerable percentage of a historical text, then, may be devoted to chronological markers, and these are frequently "fronted," placed at the beginning of sentences.

So extensive is the textual use of temporal frameworks, and so clear and precise the mathematics relating one date to another, that the chronology of many inscriptions was thoroughly understood long before modern scholars had any idea of the historical content of the inscriptions (cf. Thompson 1960). There was in fact a period in Mayan studies when leading scholars were convinced that the chronology was the **only** interpretable content, and that the remaining portions of the texts were devoted to arcane astronomical, astrological, and numerological concems beyond our comprehension. The major breakthrough in modern Mayan epigraphy has been the demonstration that the chronology is not the content, but merely the reference point for the important historical events being recorded by the Maya (Proskouriakoff 1960, 1963, 1964).

An understanding of the chronological framework of a text is essential to decipherment, since events are not necessarily presented in the order in which they occurred. But beyond matters of historical content, the manipulation of the time line is a key element in Classic Maya literary technique. Major internal divisions within a text may be explicitly marked by particular kinds of breaks in the time-line, and different sections of text may handle their chronology differently (Josserand 1991).

Relationships between sentences in a text also showed that many low-level discourse phenomena were marked in Maya hieroglyphic texts (cf. Schele 1981, on pronominal cross-

Figure I-17. Genres of Speech in Chamula Tzotzil (Gossen 1974:50-51)

k'op, words or language

lo'il k'op, ordinary or conversational language

k'op sventa xk'ixnah yo'nton, language for people with heated hearts
k'op sventa tahimol h'olol, children's improvised games
k'ehoh sventa h'olol, children's improvised songs
sk'op h'opisyal, oratory for cargoholders
k'op sventa kavilto, court language
k'op sventa chopol kirsano, emotional or bad language

puru k'op, pure words, oral tradition
'ach' k'op, recent words
batz'i 'ach' k'op, true recent narrative
'ach' lo'il, recent talk
chubah lo'il, crazy talk
'ixtol k'op, frivolous language
hut k'op, lies, untrue prose jokes
batz'i 'ixtol lo'il, truly frivolous talk, verbal dueling
mukul k'op, *baba k'op*, buried or superficial language
k'ehel k'op, obscure words, proverbs
hak'om k'op, hidden words, riddles
tahimol, tradtitional games
sventa muk'ta kirsano, adult games
sventa h'olol, childrren's games
'antivo k'op, ancient words
batz'i 'antivo k'op, true ancient narrative
sventa ba'yel banamil, First Creation narratives
sventa xcha'lomal banamil, Second Creation narratives
sventa yoxibal banamil, Third Creation narratives
k'op ta xak' riox, language for rendering holy
sventa bisob satik, for measuring the face, crossing oneself
sventa xich' Ho' h'olol, for baptism
sventa nupunel, for marriage
sventa muklumal, for burial
sventa kirsano, for laymen
sventa h'abtel xchi'uk h'ilol, for cargoholders and shamans
resal, prayer
sventa kirsano, for laymen
sventa 'anima, for the dead
sventa h'abtel, for cargoholders
sventa h'ilol, for shamans
sventa pale, for the priest
sventa chopol kirsano, for evil people (Protestants, witches, etc.)
k'ehoh, song
sventa yahval h'ch'uleletik, for the patron of our souls
sventa htotiketike, for the saints

reference, gapping, etc.). When discourse models of text linguistics were applied to the hieroglyphic texts, it was possible to demonstrate that texts also obey higher-level rules of structure, and can be treated as one or more genres of written literature (Josserand 1986, 1987, 1991). One such genre has characteristics similar to those of modern Mayan traditional narratives (Hopkins and Josserand in press); this genre includes the historical texts of the majority of stone monuments.

Literary Style

The basic grammatical structures of Maya hieroglyphic inscriptions are deliberately manipulated for artistic effect on many monuments. As in speech, placing phrases out of their normal or unmarked order calls attention to them; expressing a concept in an unusual way has the same effect. Specific linguistic techniques have the function of highlighting some events, while marking others as background. Narrative tension may be maintained by deleting mention of subjects through a series of clauses, making the eventual mention of the actor more dramatic. These and other literary devices are common in long texts, which are themselves divided into coherent sections not only by changes in chronology and content, but by explicit use of different linguistic constructions and manners of expressing events and the names of their protagonists (Josserand 1991).

A very important recent advance in the study of Mayan inscriptions is the discovery that monumental Classic texts are not sterile recitations of the facts of history, but are complex and carefully planned literary works whose artistry is on a par with (and integrated into) that of the accompanying architecture and iconography. It is our intent to describe and illustrate the elements of literary technique which have been established to date, and to relate them to the patterns of modern (oral) Mayan literature, specifically those of Chol, one of the direct descendants of the language of the southern Classic Maya area (Hopkins and Josserand in press).

The Maya Literary Tradition

One feature of culture that distinguishes modern Maya communities from other Mesoamerican groups is the richness of their oral tradition. Across the Maya area, from Guatemalan and Chiapas highlands to northern Yucatan, the Maya not only have a rich inventory of tales to tell, they also tell them very well. The stories, whether they relate the origin of the Sun and Moon, recite famous events of the past, or simply tell about a recent hunting trip, are well crafted. There is a strategy to the telling, and a rhythmic, repetitive style of narration that is characteristically Mayan.

Studies of Mayan languages (e.g., Gossen 1974; Fig. 1-17) show that there is a range of speech styles, from the less structured, less predictable extreme of casual conversation to the highly structured, almost inflexible, patterns of prayer. Between these two extremes lie intermediate types of speech, such as the ritual speech of civil and religious authorities, or the formal style employed for traditional narratives.

Other Mesoamerican groups have formal and informal speech patterns, and a common feature of Mesoamerica is the respect given to the good speaker. Being able to speak well is a prime factor in getting social recognition. Each language or language family has its own ways of marking speech as formal. Nahuatl, the language of the Aztecs, is famous for its honorifics – suffixes like *-tzin* which attach to nouns to make them special. While often called 'diminutive' and translated as 'little', this suffix (the inspiration for the modern Mexican Spanish tendency to add *-ito* 'diminutive' to nouns) actually has more of an honorific sense than one of small size: *no nan-tzin* 'our holy mother', *ta'-tzin-tli* 'venerated father' (Sullivan 1976:37-40).

Mayan languages mark formality by the device of repetition (Brody 1986), especially what are called **couplets** (Norman 1980). A couplet is a pair of similarly structured words, or phrases, or sentences, which differ only slightly in meaning. For us, rhyme is **phonological** rhyme, playing one word or syllable against another that sounds almost like it. For the Maya, rhyme is **semantic**, and they play words against one another for their meaning, not for their sound. To take an example, consider this excerpt from a Tzotzil Maya prayer (Vogt 1969:646-647).

En el ch'ul nompre yos hesukristo kahval	In the divine name of Jesus Christ my Lord,
K'usi yepal 'un htot,	So much my father,
K'usi yepal 'un kahval,	So much my lord,
Ta hk'an ti ch'ul pertonale	I beseech your divine pardon,
Ta hk'an ti ch'ul lesensiae,	I beseech your divine forgiveness,
Ti ta ch'ul ba meshae,	At the holy head of the table,
Ti ta ch'ul chak meshae...	At the holy foot of the table...

The prayer begins with an invocation (A): "*En el ch'ul nompre Yos, Jesukristo, Kahwal*;" "In the holy name of God (the Father), Jesus Christ (the Son) and Our Lord (the Holy Spirit)". It also ends with a similar phrase (*Amen*), and these two lines form a couplet which opens and closes the prayer. In between, each pair of lines forms a couplet. The first couplet (B) plays **my father** against **my lord**; the second (C) plays **divine pardon** against **divine forgiveness**, the third (D) plays **head of the table** against **foot of the table**, and so on. The rhyme scheme of this prayer is A BB CC DD... A. That is, the text consists of a series of couplets (BB, CC, DD, etc.), nested between the opening and closing invocations, themselves forming a framing couplet (A... A). Sometimes the pattern of repetition is like a mirror inversion ABCCBA. This is called a chiasmic structure, or "nested couplets." If this repetitive pairing of lines sounds somehow familiar, it may be because couplets are not exactly alien to our own poetic tradition, as we can see in this excerpt from Psalm 29 (Guilbert 1977:40):

The voice of the Lord is a powerful voice;
the voice of the Lord is a voice of splendor.
The voice of the Lord breaks the cedar trees;
the Lord breaks the cedars of Lebanon...
The voice of the Lord makes the oak trees writhe
and strips the forests bare.

Here we see couplets involving pairs like **powerful voice**: **voice of splendor**; **breaks the cedar trees**: **breaks the cedars of Lebanon**; **like a calf**: **like a young wild ox**, and so on. It is apparent that the language from which this text is translated had a couplet rhyming tradition like that of the Maya. In fact, one of the most useful discussions of couplets we have found is in a commentary on the Psalter (Guilbert 1978). In Maya culture, couplets also occur in ritual speech, as in the Tzotzil Maya oath of office for the Senior Alcalde Viejo (excerpt from Cancian 1965:223, reformatted):

Ah, Beloved Ancient Father,
has your earth arrived, has your mud arrived,
here beneath the foot, here beneath the hand,
of Señor Esquipulas,
Beloved Ancient Father?

Couplets also figure in the rhetorical structure of narrative texts, as in the Chol story about the Lightning god, Lak Mam. In modern narratives, the frequency of couplets increases around peak events – in this story a set of nested couplets marks the action climax as Lak Mam (Lightning) throws lightning bolts at a water animal who has him by the foot.

Che jale 'ora,	And then it happened,
k'iñlaw 'ab'i,	flashing, they say,
ñup'law 'ab'i,	crashing, they say,
tza' tyojmi jiñ chajki,	Lightning exploded,
b'a' tzi' ñijka 'i b'ä jiñ lak mami.	when Our Grandfather shook himself.
Tza jach 'i ñijka 'i b'ä,	He just shook himself,
tza' tyojmi jiñ chajki.	and lightning exploded.
Tza' tyiki jiñ ja'.	The water dried up.
Tza säjp'i jiñ ja',	The water went down,
ma che' ku 'añix ja'.	there wasn't any water any more.
K'iñlaw,	Flashing,
ñup'law 'ab'i 'añ.	crashing, they say, it was.
'Añ 'i chäñil ja',	The water animal
tza' chämi.	died.

A very important recent discovery is that not only couplets, but many other literary devices attested in modern Maya narratives (cf. Hopkins and Josserand 1986), are also found in the historical narratives inscribed in hieroglyphics on Classic Maya monuments (Josserand 1986). A good example is Quirigua Stela C (Fig, I-18; Hopkins 1995).

Quirigua Stela C is one of several Classic inscriptions that talks about the events that took place on the Creation date, 13.0.0.0.0, 4 Ahau 8 Cumku. The text on the east side of the monument begins with the Initial Series date of the Creation. It then relates the setting of three stones, each by a different deity, each in a different place, each called a different "throne stone." The text closes with a back reference to the Creation date and an attribution of the event to the Creator God Itzamna, called the Six Sky Lord.

The reader then moves from the east to the south face of the monument, where the Ruler I of Quirigua is pictured dancing in the guise of Itzamna – he (the Lord) has the axe of number Six in his eye and the crossed bands of the Sky in his mouth. The text moves to the west side of the stela, where a new Initial Series introduces an earlier 6 Ahau stela erection, presumably by an ancestor of Ruler I, then moves forward to the contemporary "scattering" by Ruler I on 6 Ahau.

The structure of the text on the east side is one of nested couplets. The opening date (13.0.0.0.0, 4 Ahau 8 Cumku) is coupleted by the closing line, "Thirteen b'ak'tuns were completed;" this is couplet set A. The second couplet (B) refers to three stones being set, without details. The third set (C) is a triplet describing the details of the stone setting. One of these statements uses a distinct verb for the event and arranges the details (the deity acting, the place, and name of the throne stone) in a different order. This is the peak event, and the actor is Itzamna. The chiasmic structure of the text is, then, ABCCCBA.

Figure I-18. Quirigua, Stela C, East Side

ISIG 13 bak'tuns 0 k'atuns 0 tuns 0 winals 0 k'ins, 4 Ahau 8 Cumku Creation Event

Three stones were set.

Erected a stone the Paddler Gods, in the Sky place, the Jaguar Throne stone.

Erected a stone the Black God, in Big Town place, the Snake Throne stone

And then, it happened: placed a stone Itzamna, the Water Throne stone, in the Sky place.

It was the First Three Stones (Hearth).

Ended 13 bak'tuns

under the authority of Six Sky Lord.

Quirigua Stela C

A1 13.0.0.0.0, 4 Ahau 8 Cumku, the Creation Event took place.
B1 Three stones were set.
C1 The Paddler Gods erected a stone, in the First Five Sky place;
it was the Jaguar Throne Stone.
C2 The Black Deity erected a stone, in the Large Town place;
it was the Snake Throne Stone.
C3 And then it came to pass that Itzamna set a stone,
the Water Throne Stone, in the Sky place.
B2 This was the First Three Stones (the First Hearth).
A2 13 b'ak'tuns were completed, under the supervision of the Six Sky Lord.

The Poetry of Classic Maya Inscriptions

Hieroglyphic texts are very poetic in their structure, as are traditional Mayan texts, whether they be prayers and rituals or tales of gods and heroes. The grammatical structures which characterize these language styles are formal and constrained. Where our poetry is governed by patterns of meter and rhyme, theirs is revealed in patterns of repetition and paired phrases (coupleting), in stanza structures and parallel constructions, and in word plays of many kinds.

The antiquity of the literary device of coupleting has long been suspected from its widespread occurrence across the Maya area. Now we are able to confirm that suspicion with actual written evidence. The Leiden Plaque, an early Tikal text, is in fact our earliest recorded example of Maya poetry. The text records a single event, the accession to office of the Early Classic Tikal ruler Zero Bird, in A.D. 320. But note how the date is coupleted with the event (Fig. I-19): "Seated was the month Yaxkin; seated was the ruler Zero Bird."

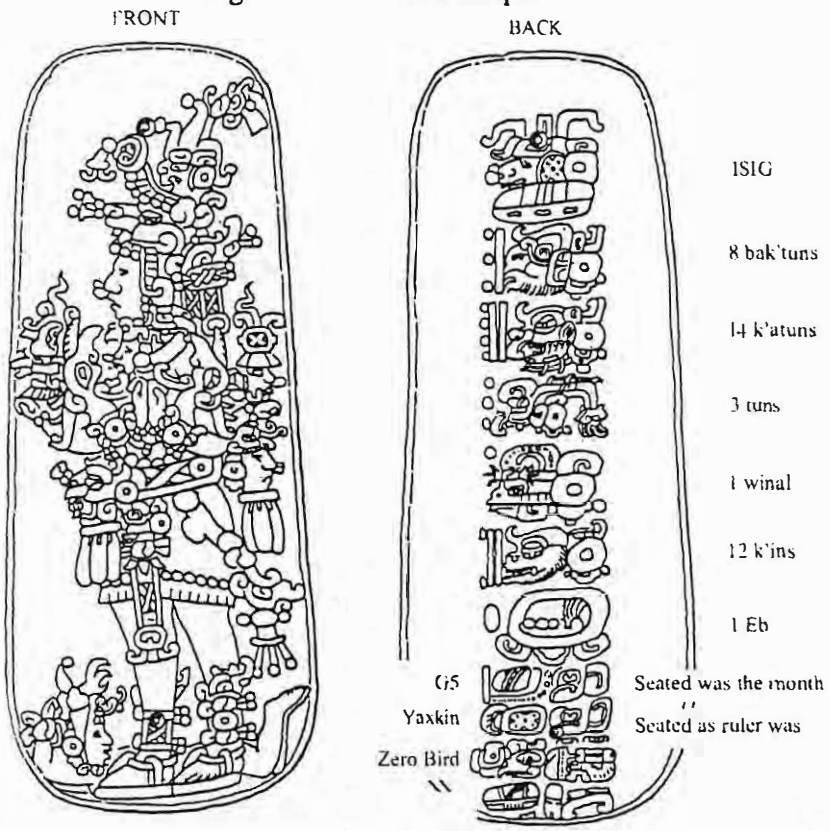
Visual Composition of the Texts

The structures which are so obvious when the hieroglyphic text is cut apart and rearranged on the page in structural analysis – or when a translation is laid out in verse form – **disappear** almost completely when the poetically-structured text is poured into the normal double-column format of a Maya monument.

But the text structure is not always lost completely. Sometimes, in fact, it is used strategically to emphasize a point. In Stela 12 of Yaxchilan (Fig. I-20), two statements are coupleted with one another, and are visually matched as well. The death of Shield Jaguar, stated in the left half of the text, is paired with the accession of his son and successor Bird Jaguar in the right half of the text, and the structural elements of the two statements correspond point for point.

Thus, the Maya scribes were well aware of the elements of text language structure, and could use them visually when they wished. However, the conventions of Maya monumental literature did not **require** that the structure be displayed visually. On the contrary, a famous example from Copan (Copan Stela J, Fig. I-21) shows just how well a literary structure can be transformed into something else. The text on one face continues to defy epigraphers, who can read each of the text segments which delineate the features of a god mask, but have no idea how they are to be put together. The text on the other face has been resolved: it has two sections, and each is recorded on a strip of flattened reed, the two strips then being woven together to form a mat, symbol of rulership.

Figure I-19. Leiden Plaque



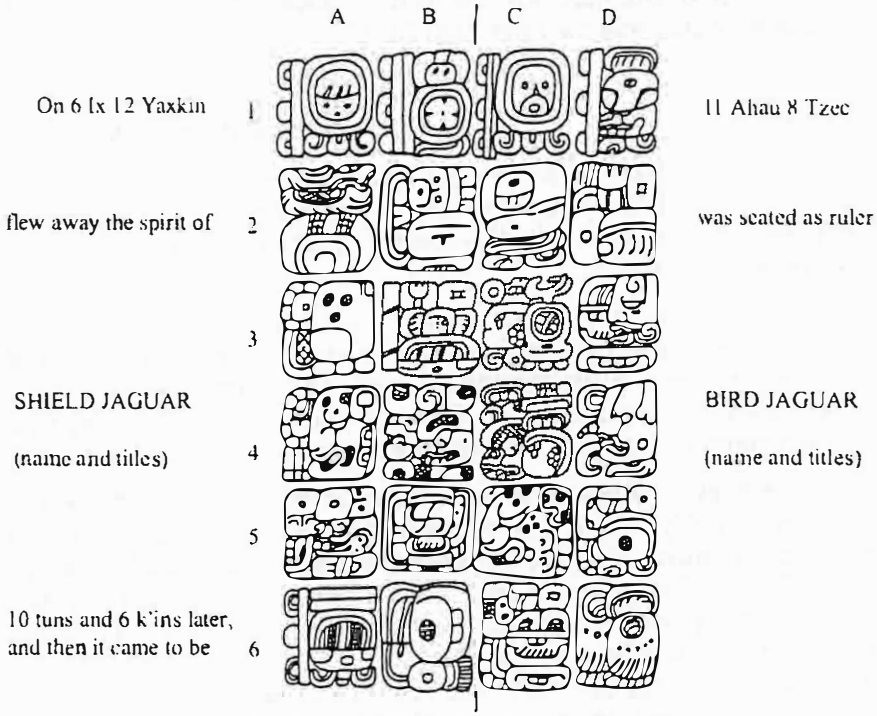
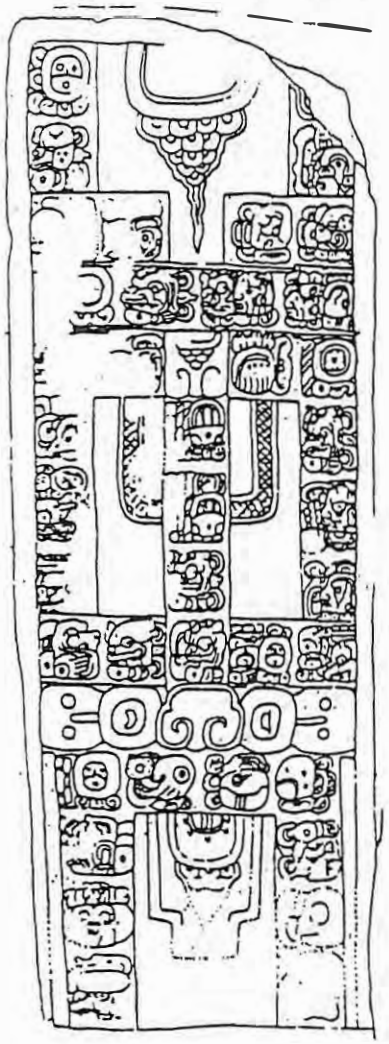


Figure I-20. Yaxchilan, Stela 12

Figure I-21. Copan, Stela J

FRONT

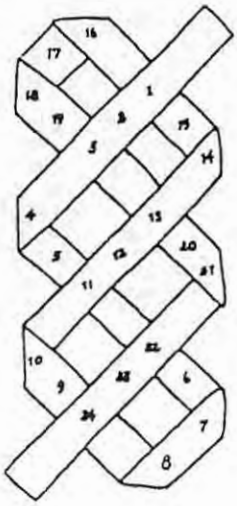


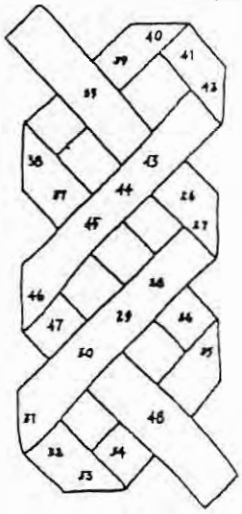
BACK

GOD MASK

MAT WEAVE

Episode 1





Episode 2

Figure I-22. Palenque, Tablet of the Cross

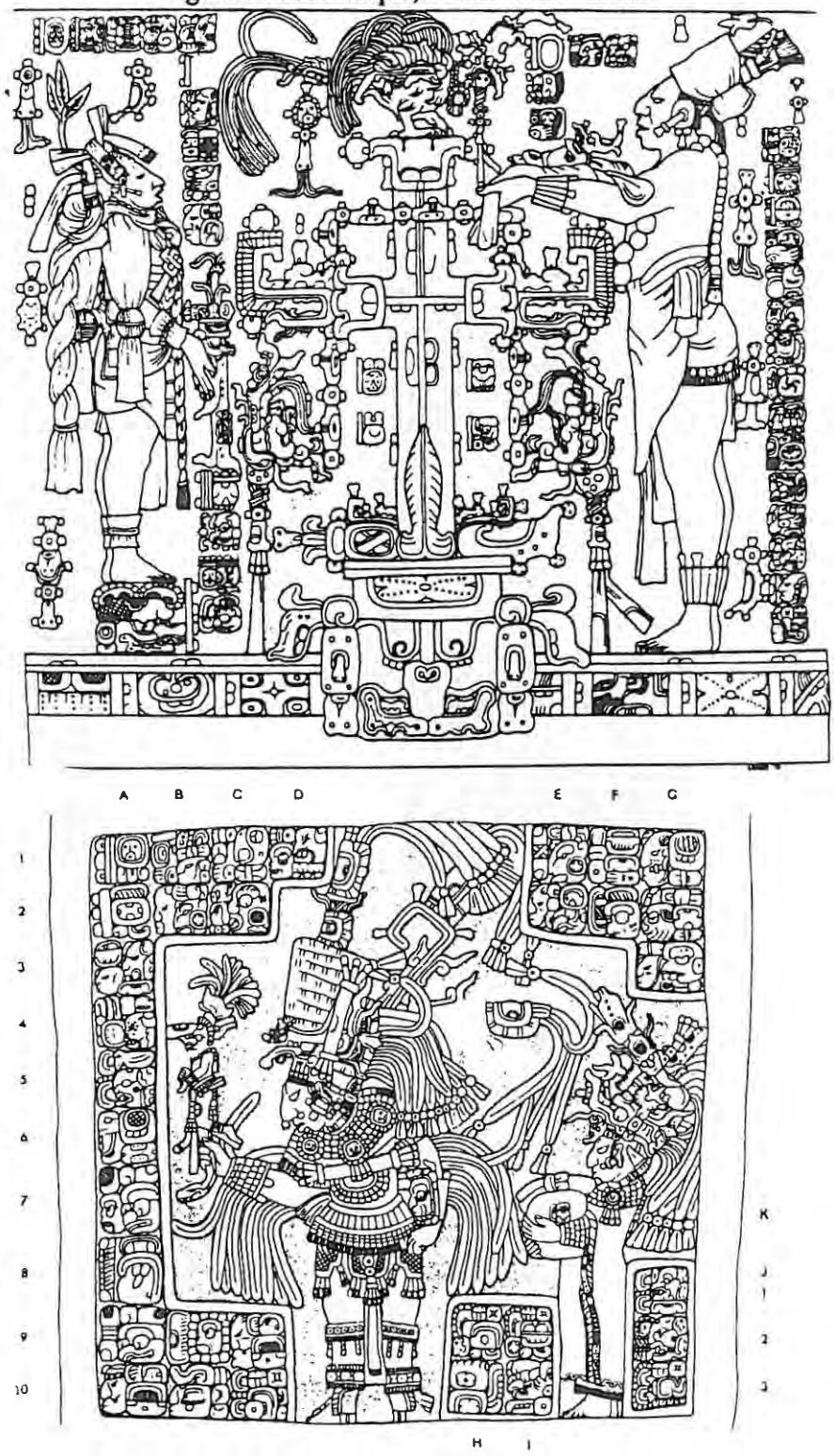


Figure I-23. Yaxchilan, Lintel 1

The Interplay of Text and Image

The description of the content, character and conventions of the images in Maya art is the traditional arena of the art historian and student of iconography. Several recent books and articles have addressed the narrative quality of Maya art, notably Berlo (1983), Clancy (1986), and Reents (1989). Schele and Miller (1986) review elements and canons of Maya art, and discuss Maya art as "a complex symbolic language with profoundly important social functions" (Schele and Miller 1986:41).

Other conventions relate to the interplay of the text and the accompanying images. Karen Bassie has recently presented a new synthesis of these unwritten rules of composition and their function in clarifying and augmenting the information given separately in the text and image portions of monuments (Bassie 1990). A very common pattern is to frame the image with blocks of text, forcing the eye to move across the image of the protagonist (or the topic of the text) in order to follow the reading order of the hieroglyphic inscription.

On the Tablet of the Cross from Palenque (Fig. I-22), the caption texts are arranged around the heads of the figures in the central image, identifying the actor and action portrayed in each. Another example of the same phenomenon is found on Yaxchilan Lintel 1 (Fig. I-23), which shows two figures, each framed by the text which relates his or her actions. The caption text is strategically divided across each figure's head, so that a portion of his name phrase ends the first segment, and the name phrase continues as the beginning of the next segment. Thus the reader's eyes must move across the ruler's body to continue with the text.

As an alternative to the first pattern, the text may frame the focused action itself rather than the protagonist, as on the katun-enclosure (twin pyramid complex) stelae of Tikal (Fig. I-24 shows the text and image of one of one such stela, Stela 22). On these stelae the focused event, a Period-Ending scattering rite (shown as drops descending from an outstretched hand), intrudes into a space framed by the text. The obligatory reading order requires the eye to move across the image of scattering.

It is clear from these examples and many others that there are **two layers** of composition in these texts. The inner layer is that of the **poetic structuring** of the language of the text, involving couplets and other rhetorical devices. The outer layer is that of the **visual composition** of the monument, in which the text is played against the images. This second, outer, layer of composition often ignores the first, and may disguise it beyond easy recognition. Elements in the text are placed not where their role in the language of the text would be emphasized, but where they contribute best to the overall visual impact of the monument.

On Dumbarton Oaks Relief Panel 1 (Fig. I-25), from a site subsidiary to Piedras Negras), the protagonist is framed by a text relating his birth, his parentage, his accession to an office (**kahal**, not supreme rule) and his death, further relating these events to the dynastic rule of the major site, Piedras Negras. As the protagonist stands holding his spear, he is framed by a text which begins with the time before his birth, surrounds him with the events of his life, and ends by relating time passed after his death. Not accidentally, his headdress touches his name glyph, behind his head (at G3).

The same kind of convention is reflected on Palenque's Tablet of the Slaves, a wall panel featuring a warrior rather than a supreme ruler. While the focused event in the language of the text is the accession of his patron the king, visually the protagonist's image is surrounded by the major events of his own life, and his name glyph lies just above and behind his head.

Figure I-24. Tikal, Stela 22

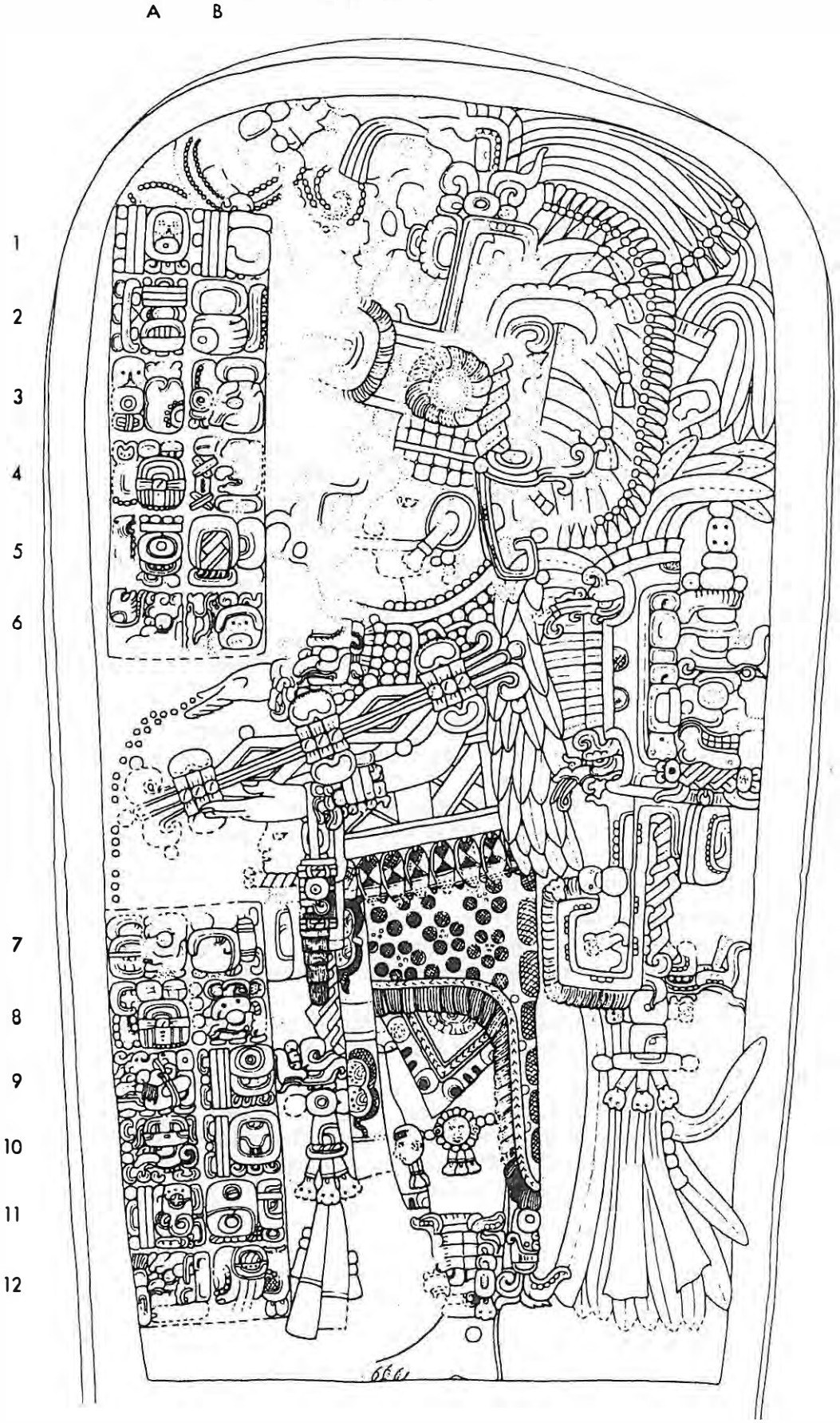


Figure I-25. Dumbarton Oaks Relief Panel 1

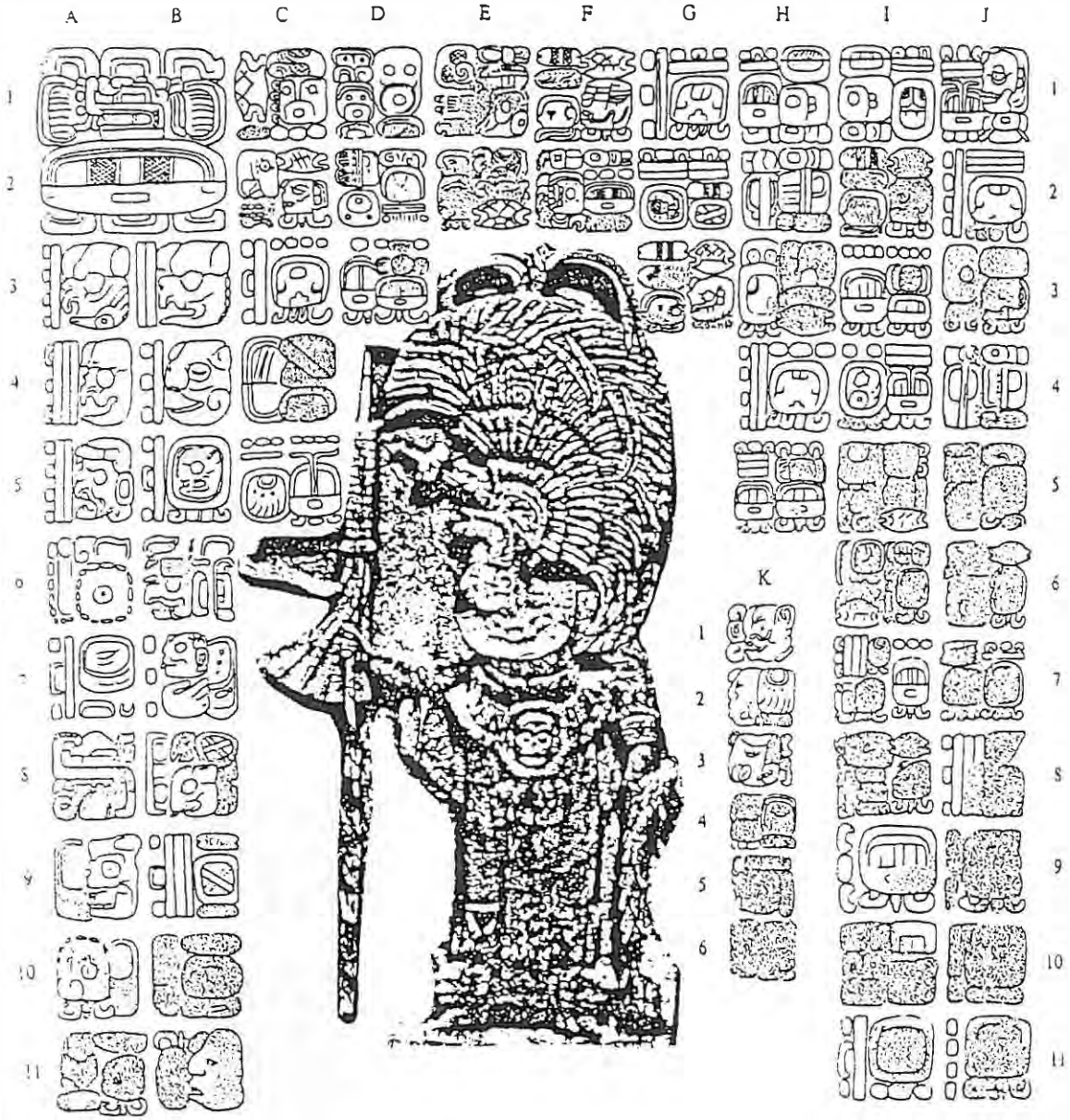
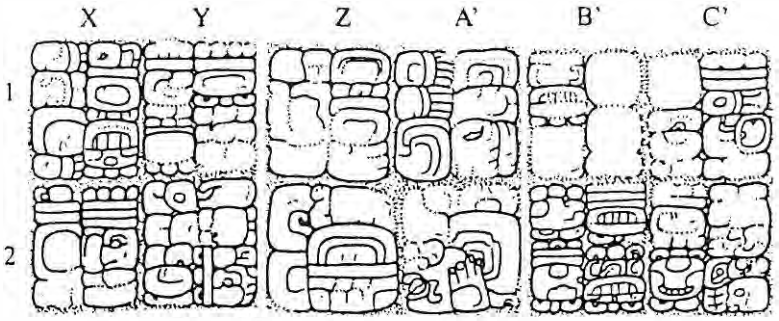


Figure I-26. Quirigua, Altar of Zoomorph O



Ruler's Name and Title

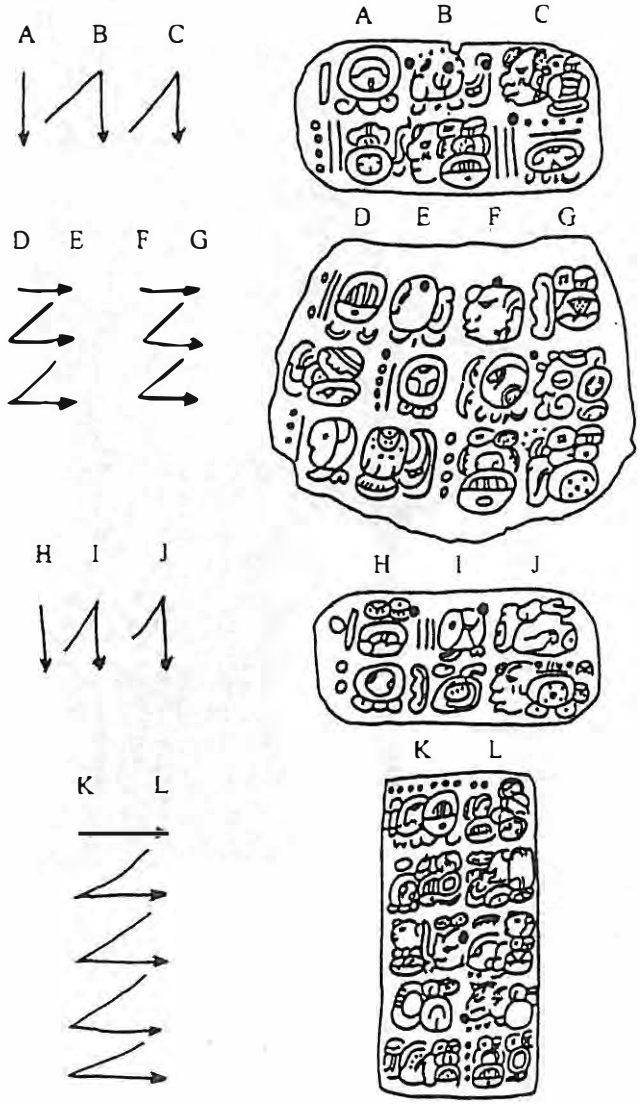


Figure I-27. Piedras Negras, Shell Plaques (Proskouriakoff)

There are other ways of making an protagonist's name more prominent in the text. On the Altar of Zoomorph O at Quirigua, the text reads around the monument in a counter-clockwise direction, starting in the middle with an Initial Series, near the dancing figure. The reader moves around the monument to follow the reading order, and the orientation of the glyph blocks changes accordingly in each section. But well into the text, doubtless around the peak event, the protagonist's name appears in glyph blocks that are roughly twice the size of the other glyphs (Fig. I-26); this is the Classic Maya equivalent of switching from normal 12-point type to 24-point Garamond Bold.

Finally, a technique which often reflects internal text structure involves changes in the reading order of glyphs within a glyph block or between glyph blocks. Normal reading order is left-to-right, top-to-bottom, in double columns, but there are any number of exceptions to this general rule. A particularly fetching example is the text on the Piedras Negras Shell Plaques from Burial 5. The reading order (shown in Fig. I-27) is different for each plaque, a little game the artist has played to give this piece even more charm.

On Interpreting Inscriptions

Mayan monumental texts have at least two major layers of composition: the poetic structure of the text language itself, and the artistic array of the text in relation to an image or space. In the composition of the language of the text, use is made of traditional rhetorical devices, such as couplets. In the artistic array of the text, there are other conventional mechanisms used to make names appear more prominent or stress some relationship the artist wishes to point out. Only a few of the techniques which have been identified have been discussed here.

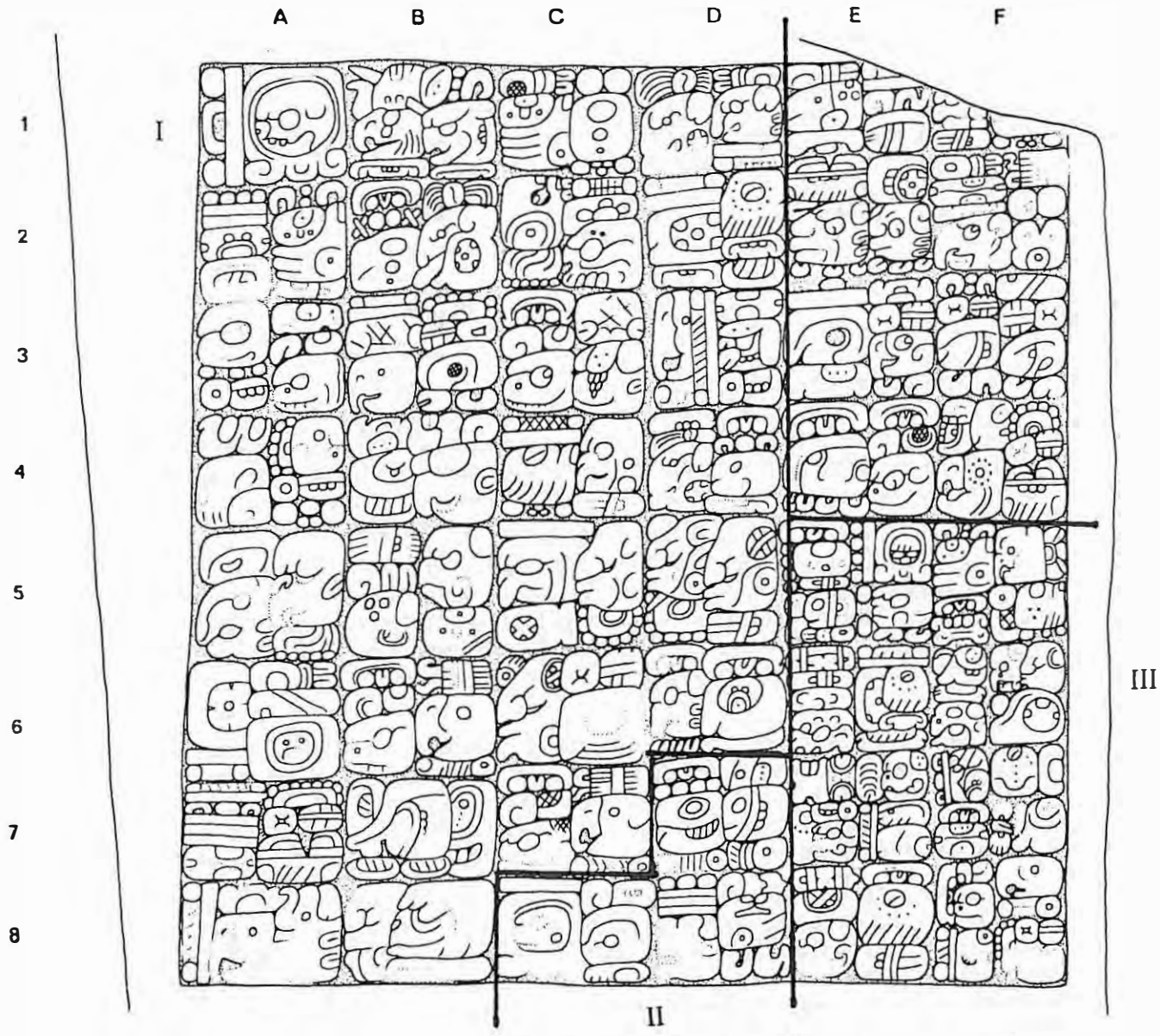
The medium on which the text is to be displayed has an effect on the possibilities which exist for artistic expression. A slim vertical shaft of stone (such as a stela) forces text and image into a different kind of space than the rectangular lintel or the wide, horizontal extension of a wall panel. Different opportunities are presented by a single monument and an integrated series of monuments. These factors affect the outer layer of composition, the array of an inscription in its context.

However, it appears to be the case that the differences in treatment which the various media demand do not significantly affect the inner layer of composition of the text, the language of the inscriptions, as much as they do the outer layer of composition. Similar language and text construction is found across media boundaries. The language of the text on the Leiden Plaque is not unlike that of the stelae.

In view of the regular occurrence of the devices which have been noted, Maya monumental inscriptions must be understood as literary and artistic creations of the highest order. There are many phenomena in the language of Classic texts which we used to think of as Maya **mistakes** – glyphs out of normal order, distance numbers leading nowhere, names deleted at critical points – but which we now have identified as elements in a repertory of devices used for literary effect. By the same token, we should understand that unexpected changes in reading order, in placement and relative size of glyphs, etc., are not evidence of haste, clumsiness, drugs or drunken stupor on the part of the sculptors, but are elements deliberately manipulated for their literary effect.

On Yaxchilan Lintel 10, the last monument to be carved at Yaxchilan, the glyphs are much bigger at the beginning of the text than at the end (Fig. I-28). For most of the text, the glyphs are to be read left to right within each glyph block (after the Calendar Round beginning, A2a-A2b, B2a-B2b, etc.) About halfway down the last double column, the text abruptly scales down the size of the

Figure I-28. Yaxchilan, Lintel 10



glyphs (beginning with the distance number expression at E5), and employs a somewhat unusual internal reading order: within the glyph blocks, each of which contains four glyph complexes of roughly equal size, the glyphs are to be read top to bottom on the left half, then top to bottom on the right half.

A few years ago, the prominent art historian Mary Miller, in an oral presentation, dismissed the relative size of the glyphs in the latter part of this inscription as the result of excessive haste: "things were happening so fast they couldn't get it all in," a sort of Maya equivalent of the badly spaced "Plan Ahead" signs which begin with proper spacing but crowd the later letters.

More recently, Martin and Grube (2000:137) characterized this lintel as "cramped in style and poorly executed." But they also note that the final passage of the text (E5-F8, the section where the glyphs are "cramped") contains the "most interesting information" in the text: it records the capture of the last ruler of Piedras Negras, Ruler 7, by the ruler of Yaxchilan. In other words, this is the peak event of the narration, a fact that is being marked by the scribes through the use of a distinct size of glyphs and a distinct reading order. This is not hasty composition or poorly executed writing. It is a deliberate use of alternatives to draw our attention to the most important event of the narration.

If we are to give to the Maya the credit due for their literary and artistic creations, we must go beyond facile interpretations. What we are seeing on the Classic monuments is not hastily-composed first drafts, but painstakingly crafted and artfully arranged literary texts incorporated into the iconography and architecture of the buildings and plazas where they were placed, in an impressive expression of a truly exceptional literary tradition. To the recognized arts and sciences of the Classic Maya – art, architecture, writing, mathematics, calendrics and astronomy – we must add the art and science of literature, the practice of which incorporates all of the others.

Figure I-29. Correlation between Maya and European Calendars

LONG COUNT – CHRISTIAN CORRELATIONS

Adapted from S. G. Morley *The Ancient Maya*, 1946

8.14.0.0.0	7 Ahau 3 Xul	AD 317, Sept. 1
8.14.5.0.0	13 Ahau 18 Zotz	AD 322, Aug. 6
8.14.10.0.0	6 Ahau 13 Zip	AD 327, July 11
8.14.15.0.0	12 Ahau 8 Uo	AD 332, June 14
8.15.0.0.0	5 Ahau 3 Pop	AD 337, May 19
8.15.5.0.0	11 Ahau 3 Cumku	AD 342, April 23
8.15.10.0.0	4 Ahau 18 Pax	AD 347, March 28
8.15.15.0.0	10 Ahau 13 Muan	AD 352, March 1
8.16.0.0.0	3 Ahau 8 Kankin	AD 357, Feb. 3
8.16.5.0.0	9 Ahau 3 Mac	AD 362, Jan. 8
8.16.10.0.0	2 Ahau 18 Zac	AD 366, Dec. 13
8.16.15.0.0	8 Ahau 13 Yax	AD 371, Nov. 17
8.17.0.0.0	1 Ahau 8 Chen	AD 376, Oct. 21
8.17.5.0.0	7 Ahau 3 Mol	AD 381, Sept. 25
8.17.10.0.0	13 Ahau 18 Xul	AD 386, Aug. 30
8.17.15.0.0	6 Ahau 13 Tzec	AD 391, Aug. 4
8.18.0.0.0	12 Ahau 8 Zotz	AD 396, July 8
8.18.5.0.0	5 Ahau 3 Zip	AD 401, June 12
8.18.10.0.0	11 Ahau 18 Pop	AD 406, May 17
8.18.15.0.0	4 Ahau 18 Cumku	AD 411, April 21
8.19.0.0.0	10 Ahau 13 Kayab	AD 416, March 25
8.19.5.0.0	3 Ahau 8 Pax	AD 421, Feb. 27
8.19.10.0.0	9 Ahau 3 Muan	AD 426, Feb. 1
8.19.15.0.0	2 Ahau 18 Mac	AD 431, Jan. 6
9.0.0.0.0	8 Ahau 13 Ceh	AD 435, Dec. 11
9.0.5.0.0	1 Ahau 8 Zac	AD 440, Nov. 14
9.0.10.0.0	7 Ahau 3 Yax	AD 445, Oct. 19
9.0.15.0.0	13 Ahau 18 Mol	AD 450, Sept 23
9.1.0.0.0	6 Ahau 13 Yaxkin	AD 455, Aug. 28
9.1.5.0.0	12 Ahau 8 Xul	AD 460, Aug. 1
9.1.10.0.0	5 Ahau 3 Tzec	AD 465, July 6
9.1.15.0.0	11 Ahau 18 Zip	AD 470, June 10
9.2.0.0.0	4 Ahau 13 Uo	AD 475, May 15
9.2.5.0.0	10 Ahau 8 Pop	AD 480, April 18
9.2.10.0.0	3 Ahau 8 Cumku	AD 485, March 23
9.2.15.0.0	9 Ahau 3 Kayab	AD 490, Feb. 25
9.3.0.0.0	2 Ahau 18 Muan	AD 495, Jan. 30
9.3.5.0.0	8 Ahau 13 Kankin	AD 500, Jan. 4
9.3.10.0.0	1 Ahau 8 Mac	AD 504, Dec. 9
9.3.15.0.0	7 Ahau 3 Ceh	AD 509, Nov. 13
9.4.0.0.0	13 Ahau 18 Yax	AD 514, Oct. 18
9.4.5.0.0	6 Ahau 13 Chen	AD 519, Sept. 22
9.4.10.0.0	12 Ahau 8 Mol	AD 524, Aug. 26
9.4.15.0.0	5 Ahau 3 Yaxkin	AD 529, July 31
9.5.0.0.0	11 Ahau 18 Tzec	AD 534, July 5
9.5.5.0.0	4 Ahau 13 Zotz	AD 539, June 9
9.5.10.0.0	10 Ahau 8 Zip	AD 544, May 13
9.5.15.0.0	3 Ahau 3 Uo	AD 549, April 17
9.6.0.0.0	9 Ahau 3 Uayeb	AD 554, March 22
9.6.5.0.0	2 Ahau 18 Kayab	AD 559, Feb. 24
9.6.10.0.0	8 Ahau 13 Pax	AD 564, Jan. 29
9.6.15.0.0	1 Ahau 8 Muan	AD 569, Jan. 2
9.7.0.0.0	7 Ahau 3 Kankin	AD 573, Dec. 7
9.7.5.0.0	13 Ahau 18 Ceh	AD 578, Nov. 11
9.7.10.0.0	6 Ahau 13 Zac	AD 583, Oct. 16
9.7.15.0.0	12 Ahau 8 Yax	AD 588, Sept 19
9.8.0.0.0	5 Ahau 3 Chen	AD 593, Aug. 24
9.8.5.0.0	11 Ahau 18 Yaxkin	AD 598, July 29
9.8.10.0.0	4 Ahau 13 Xul	AD 603, July 4
9.8.15.0.0	10 Ahau 8 Tzec	AD 608, June 7
9.9.0.0.0	3 Ahau 3 Zotz	AD 613, May 12
9.9.5.0.0	9 Ahau 18 Uo	AD 618, April 16
9.9.10.0.0	2 Ahau 13 Pop	AD 623, March 21
9.9.15.0.0	8 Ahau 13 Cumku	AD 628, Feb. 23
9.10.0.0.0	1 Ahau 8 Kayab	AD 633, Jan. 27
9.10.5.0.0	7 Ahau 3 Pax	AD 638, Jan. 1
9.10.10.0.0	13 Ahau 18 Kankin	AD 642, Dec. 6
9.10.15.0.0	6 Ahau 13 Mac	AD 647, Nov. 10
9.11.0.0.0	12 Ahau 8 Ceh	AD 652, Oct. 14
9.11.5.0.0	5 Ahau 3 Zac	AD 657, Sept. 18
9.11.10.0.0	11 Ahau 18 Chen	AD 662, Aug. 23
9.11.15.0.0	4 Ahau 13 Mol	AD 667, July 28
9.12.0.0.0	10 Ahau 8 Yaxkin	AD 672, July 1
9.12.5.0.0	3 Ahau 3 Xul	AD 677, June 5
9.12.10.0.0	9 Ahau 18 Zotz	AD 682, May 10
9.12.15.0.0	2 Ahau 13 Zip	AD 687, April 14
9.13.0.0.0	8 Ahau 8 Uo	AD 692, March 18
9.13.5.0.0	1 Ahau 3 Pop	AD 697, Feb. 20
9.13.10.0.0	7 Ahau 3 Cumku	AD 702, Jan. 26
9.13.15.0.0	13 Ahau 18 Pax	AD 706, Dec. 31
9.14.0.0.0	6 Ahau 13 Muan	AD 711, Dec. 5
9.14.5.0.0	12 Ahau 8 Kankin	AD 716, Nov. 8
9.14.10.0.0	5 Ahau 3 Mac	AD 721, Oct. 13
9.14.15.0.0	11 Ahau 18 Zac	AD 726, Sept 17
9.15.0.0.0	4 Ahau 13 Yax	AD 731, Aug. 22
9.15.5.0.0	10 Ahau 8 Chen	AD 736, July 26
9.15.10.0.0	3 Ahau 3 Mol	AD 741, June 30
9.15.15.0.0	9 Ahau 18 Xul	AD 746, June 4
9.16.0.0.0	2 Ahau 13 Tzec	AD 751, May 9
9.16.5.0.0	8 Ahau 8 Zotz	AD 756, April 12
9.16.10.0.0	1 Ahau 3 Zip	AD 761, March 17
9.16.15.0.0	7 Ahau 18 Pop	AD 766, Feb. 19
9.17.0.0.0	13 Ahau 18 Cumku	AD 771, Jan 24
9.17.5.0.0	6 Ahau 13 Kayab	AD 775, Dec. 29
9.17.10.0.0	12 Ahau 8 Pax	AD 780, Dec. 2
9.17.15.0.0	5 Ahau 3 Muan	AD 785, Nov. 6
9.18.0.0.0	11 Ahau 18 Mac	AD 790, Oct. 11
9.18.5.0.0	4 Ahau 13 Ceh	AD 795, Sept. 15
9.18.10.0.0	10 Ahau 8 Zac	AD 800, Aug. 19
9.18.15.0.0	3 Ahau 3 Yax	AD 805, July 24
9.19.0.0.0	9 Ahau 18 Mol	AD 810, June 28
9.19.5.0.0	2 Ahau 13 Yaxkin	AD 815, June 2
9.19.10.0.0	8 Ahau 8 Xul	AD 820, May 6
9.19.15.0.0	1 Ahau 3 Tzec	AD 825, April 10
10.0.0.0.0	7 Ahau 18 Zip	AD 830, March 15
10.0.5.0.0	13 Ahau 13 Uo	AD 835, Feb. 17
10.0.10.0.0	6 Ahau 8 Pop	AD 840, Jan. 22
10.0.15.0.0	12 Ahau 8 Cumku	AD 844, Dec. 26
10.1.0.0.0	5 Ahau 3 Kayab	AD 849, Nov. 30
10.1.5.0.0	11 Ahau 18 Muan	AD 854, Nov. 4
10.1.10.0.0	4 Ahau 13 Kankin	AD 859, Oct. 9
10.1.15.0.0	10 Ahau 8 Mac	AD 864, Sept. 12
10.2.0.0.0	3 Ahau 3 Ceh	AD 869, Aug. 17
10.2.5.0.0	9 Ahau 18 Yax	AD 874, July 22
10.2.10.0.0	2 Ahau 13 Chen	AD 879, June 26
10.2.15.0.0	8 Ahau 8 Mol	AD 884, May 30
10.3.0.0.0	1 Ahau 3 Yaxkin	AD 889, May 4
10.3.5.0.0	7 Ahau 18 Tzec	AD 894, April 8
10.3.10.0.0	13 Ahau 13 Zotz	AD 899, March 13
10.3.15.0.0	6 Ahau 8 Zip	AD 904, Feb. 16
10.4.0.0.0	12 Ahau 3 Uo	AD 909, Jan. 20

PART II:

AN INTRODUCTION TO CLASSIC MAYA INSCRIPTIONS:

MAYA NUMBERS AND THE CALENDAR

The easiest place to start learning about Maya hieroglyphics is also one of the most frequent kinds of hieroglyphs – those that record numbers and the elements of the Maya calendar. Since most Classic inscriptions (at least those on monuments) are narratives of Maya history, there is a lot of attention given to the dates of events, and the dates are recorded in standard ways. Being able to read dates (and the numbers they require) means that at least you can walk up to almost any inscribed monument and read parts of it. Shock and amaze your friends! And this is not just idle knowledge. The key to deciphering any inscription is to work out the chronology of the events recorded and how that chronology is presented. In the methodology that we have developed over the years, the first step in understanding a monumental inscription is to go through it and mark the dates; this reduces the inscription to a series of segments that can then be examined in detail.

The Maya numerical system is not decimal, like ours, but vigesimal, based on twenty as opposed to ten. Instead of counting in units of tens – ten, twenty, thirty, forty, and so on – the Maya count in units of twenty: twenty, forty, sixty, etc. You might think of this best as counting "scores": one score, two scores, three scores, and so on. Where our higher numbers are based on powers of ten – ten (10 or 10^1), one hundred (10 x 10, or 10^2), one thousand (10 x 10 x 10, or 10^3), the higher numbers in the Maya system are based on powers of twenty – twenty (20, or 20^1), four hundred (20 x 20, or 20^2), eight thousand (20 x 20 x 20, or 20^3). This is really more a matter of what numbers are called and which numbers receive special names than it is a matter of any difference in numerical values. A comparison of numbers in the Cholan languages has made it possible to reconstruct (hypothetically) the words for numbers in a the spoken Maya language that was written as Epigraphic Maya. Those reconstructions are listed below. They are very close to the number names in modern Chol (in parentheses), and we often use modern Chol as a guide to what Classic Cholan was like. Note that in modern Chol, numbers from 1-19 have to be accompanied by an element that specifies what kind of thing is being counted (a "numeral classifier"); here we have chosen *p'ejl* 'things'.

Proto-Cholan (and Modern Chol) Number Names

1	jun	(juñ p'ejl)	11	b'uluch	(b'uluch p'ejl)
2	cha'	(cha' p'ejl)	12	lajchan	(lajchäñ p'ejl)
3	'ux	('ux p'ejl)	13	'ux-lajun	('ux-lujuñ p'ejl)
4	chan	(chän p'ejl)	14	chan-lajun	(chäñ-lujuñ p'ejl)
5	ho'	(jo' p'ejl)	15	ho'-lajun	(jo'-lujuñ p'ejl)
6	wäk	(wäk p'ejl)	16	wäk-lajun	(wäk-lujuñ p'ejl)
7	huk	(wuk p'ejl)	17	huk-lajun	(wuk-lujuñ p'ejl)
8	waxäk	(waxäk p'ejl)	18	waxäk-lajun	(waxäk-lujuñ p'ejl)
9	b'olon	(b'oloñ p'ejl)	19	b'olon-lajun	(b'oloñ-lujuñ p'ejl)
10	lajun	(lujuñ p'ejl)	20	jun k'al	(juñ k'al) ("one score")

Fig. II-1. Bar-Dot Numbers

0

The Maya "zero" is an empty shell, suggesting they used shells to make a kind of abacus.

20

A single bead in the "twenties" position equals 20.

An empty shell in the "ones" position equals zero.

40

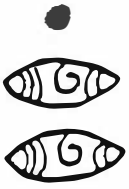
Two beads in the "twenties" position equals 40.

41

40

A single bead in the "ones" position equals 1

400



A single bead in the "400s" position equals 400.

1907

4 x 400 = 1600

15 x 20 = 300

7 x 1 = 7

1907

From there, the landmark numbers are:

40	cha' k'al	120	wäk k'al	200	lajun k'al
60	'ux k'al	140	huk k'al	220	b'uluch k'al
80	chan k'al	160	waxäk k'al	240	lajchan k'al
100	ho' k'al	180	b'olon k'al	260	'uxlajun k'al

and so on until you reach 380, 19 x 20, b'olon-lajun k'al, and then on to the next big landmark number, 400 (20 x 20), jun b'ak' ("one 400;" modern Chol b'ajk').

In between the even-score landmarks, you count towards the next highest one, not from the next lowest one (the prefix 'u-, with a variant y-, turns the number into an ordinal number):

21	jun 'u-cha' k'al	"one in the second score"
22	cha' 'u-cha' k'al	"two in the second score"

all the way to 39, b'olon-lajun 'u-cha' k'al, "nineteen in the second score," and then cha' k'al ("two score," 40). Then 41 is jun y-ux k'al, "one in the third score." and so on.

Bar-Dot Numbers

The real advantage of learning to count like a Maya is that the way numbers are written corresponds to this system, not to our decimal system. In this writing system, a dot stands for the value "one," and a bar stands for "five," so the system is called the "bar-dot number" system. There is no theoretical limit on the size of numbers that can be written this way; they can easily run into the gazillions.

Before getting into the details, let's consider our own system for writing large numbers. It's a kind of "positional notation," in which the position of the integers with respect to others changes their value. A number like 1907, for instance, represents

1 x 1000
9 x 100
0 x 10
7 x 1

OR

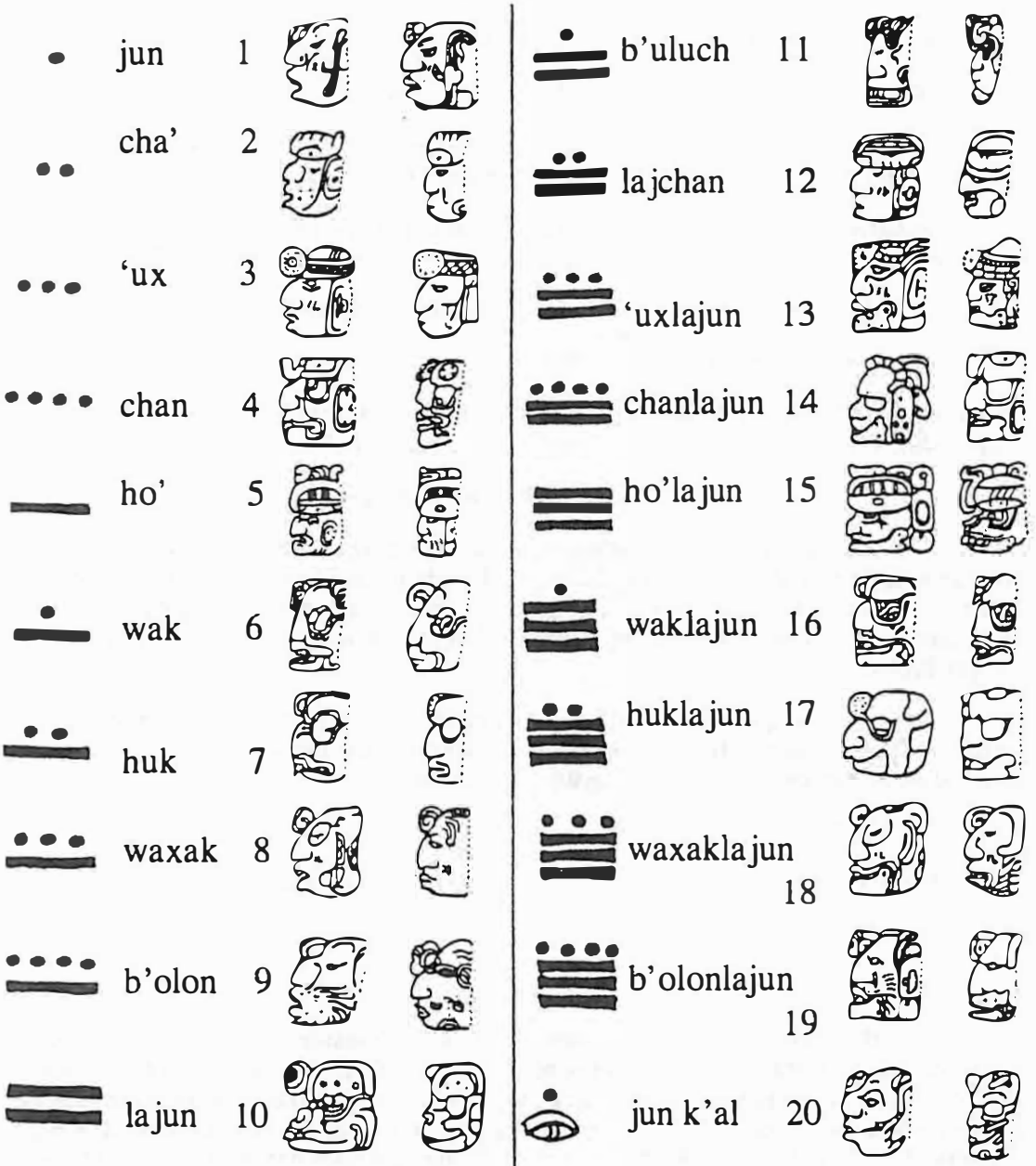
Thousands	Hundreds	Tens	Ones
1	9	0	7

A "one" in the thousands position stands for "one thousand," not for "one." A "nine" in the hundreds position stands for "nine hundred," not for "nine." So the value of an integer depends on its position in the sequence. Now, think of this as a set of boxes, one of which holds the "ones," another holds the "tens," and so on. What can go into any of the boxes is one (and only one) of the integers, 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. If you "fill up" the ones box with 9, and add one, what do you do to write the result? You put a "zero" in the ones box, and put a 1 in the next box to the left (10, one ten, no ones).

The Maya positional notation works very much like this, but it stacks its boxes vertically, one on top of the other (Fig. II-1). The bottom box holds "ones," the next box holds "twenties," the next box "four hundreds," and so on up as far as you care to go (some texts have as many as 20 boxes!). An empty box ("zero") is represented by an empty shell. We think this is the case because

Fig. II-2. Bar-Dot Numbers and Head Variants

BAR-DOT NUMBERS AND HEAD VARIANTS, ONE THROUGH TWENTY



The number "zero" was probably *mi*, since the "flower" variant is the syllable sign **mi**.

the Maya used shells to hold their beads and bars, making a kind of abacus that would allow them to add and subtract. In the Maya system, 1907 is not thought of as "one thousand," "nine hundred," etc., but is conceived of in terms of twenties: "four 400s," "fifteen twenties," and "seven", or 4 x 400 (chan b'ak'), 15 x 20 (ho'-lajun k'al), 7 x 1 (huk). That is, it will be written using three "boxes," the lower one holding the ones, the next one the twenties, and the top one the 400s (Fig. II-1). And to read this number, you have only to read: chan b'ak', ho'-lajun k'al, huk.

Fancy Ways to Write Numbers

Bar-dot numbers were used when the numbers were to be manipulated – added or subtracted from one another – as in eclipse tables and other astronomical reference works. They are also used frequently in calendric notations (below). In monumental inscriptions, for reasons that will become clear later, the written numbers are never higher than 19. For this set of numbers, there are two very elegant ways of representing the numbers, called (by us, who knows what the Maya called them!) "head variants" and "full-figure variants" (Fig. II-2). Instead of writing the number with boring old bars and dots, we represent the numbers by personifying them, by converting them into images of the (presumed) deities associated with them. Head variants show only the head of the personage; full-figure variants show the whole body, and the body may be engaged in some activity.

Each of the head variants has one or more distinctive features that allow us to recognize them. These features also appear on the full-figure variants. The principal distinguishing features are:

1 The number "one" is represented by the Maize God as a young person, with a lock of hair (or corn silk) falling down his cheek, and a bead on his forehead. (We used to think this was the Moon Goddess, but modern scholars have disputed this identification.)

2 The number "two" is represented by a male with a fist on his head like a headdress, the back of the hand toward the viewer.

3 The number "three" is represented by a head with a headband that usually has a mirror or shiny object affixed to it in front.

4 The number "four" is represented by the Sun God, who is recognized by his square Roman nose, a prominent snaggle-tooth for an incisor, and a "barbel" (like a catfish whisker) coming out of the back of his mouth. He also is cross-eyed, and he often wears his name glyph (k'in) as an earpiece.

5 The number "five" is represented by an old man with no teeth and a wrinkled face; on his head he wears a tun "stone/year" sign as a headdress, perhaps marking the heavy weight of years that he bears.

6 Number "six" has an axe in his eye, a curved wooden handle with a stone blade stuck through it.

7 Number "seven," one of the hardest to recognize, has a spike-like incisor and an eye with a border around it.

8 Number "eight" is another image of the Maize God, but a mature maize god, with the curl of a leaf at his forehead and a skull that often takes on the contours of an ear of corn.

9 Number "nine" is a jaguar, and often has spots and whiskers, as well as a Yax sign on his forehead (a common feature of what is called the "water-lily jaguar").

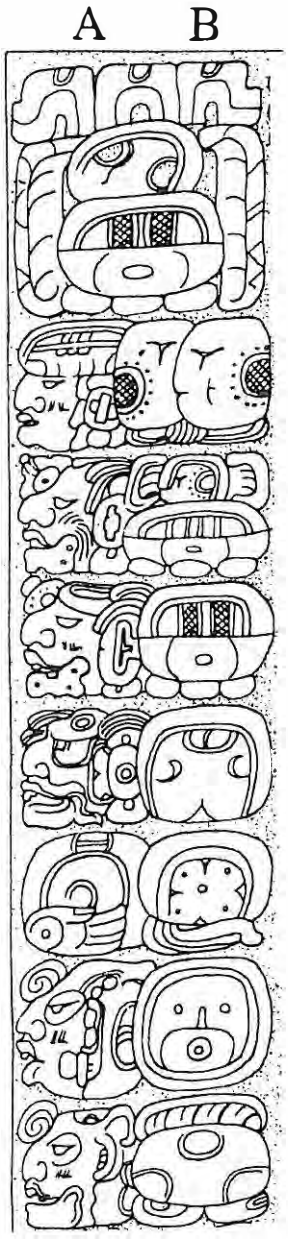
10 Number "ten" is a Death's Head, a skull, with a fleshless lower jaw and often three holes in his skull representing the foramina, small holes where the nerves pass through. Note that lajuñ "ten" is probably based on laj "to end, to die."

11 The number "eleven" is represented by a head with a headdress composed of the Earth glyph (Kaban); the distinctive feature is a dot with a curly tail, perhaps a sprouting seed.

12 Number "twelve" is represented by a head with a Sky (Chan) headdress.

13-19 The remaining numbers are represented by combinations of "ten" (the fleshless jaw) and the numbers 3-9 with their distinctive features.

Fig. II-3. Head and Full-figure Variants, Tablet of the Cross and Palace Tablet, Palenque.



ISIG
12 b'ak'tun
19 k'atun
13 tun
4 winal
0 k'in
8 Ahau
13 Tzec

12.19.13.4.0, 8 Ahau 13 Tzec

ISIG
9 b'ak'tun
10 k'atun
11 tun
17 winal
0 k'in
11 Ahau

9.10.11.17.0, 11 Ahau (8 Mac)

The choice between bar-dot numbers, head variants, and full-figure variants engaged in activities gave the Maya scribes tremendous liberty to play visual games and to convert what might be a simple date into an opportunity to comment on the gods and their interactions. At Palenque we can see good examples of scribal choice on the Tablet of the Cross (head variants of numbers) and the Palace Tablet (Fig. II-3).

The Calendar and the Maya "Fascination with Time"

What do you use numbers for most of the time? Keeping track of time. The Maya were once thought to have a fascination with time, to be concemed with time for its own sake. This view, held by scholars up until just a few years ago, was based on the observation that a considerable part of any Classic inscription is devoted to calendric matters. At the beginning of a monumental inscription a base date is established, and all the other dates in the inscription are linked to that date by precise counts of the intervening time periods. When the mathematics and the calendrics were the only parts of the inscriptions scholars had deciphered, it was easy to believe that the Maya were obsessed with time.

Now that we can read most of the rest of the inscriptions, we know that the elaborate attention that was given to keeping track of time was not an obsession with time but an attempt to keep track of history. The Maya were not so concemed with time in itself, they were interested in keeping track of when events had taken place in order to be precise about their historical records. For this purpose they adopted and elaborated on a wide-spread Mesoamerican calendar. Just how that calendar worked is a topic we will get to below.

The Long Count

In order to anchor their dates in time, the Maya made use of a system that had been used earlier by the Olmecs, the so-called "Long Count" (our term, not the Maya's). By means of this continuous count of days from a specific starting point, the position of any given day can be absolutely determined. In our calendar, we specify what year we are in by counting years from a specific starting point, said to be the birth of Christ. From that point, we simply count the number of years that have passed, and give the year that number, e.g., 2010 AD (Anno Domini 2010, "the year of Our Lord 2010"). The Maya counted days, not years.

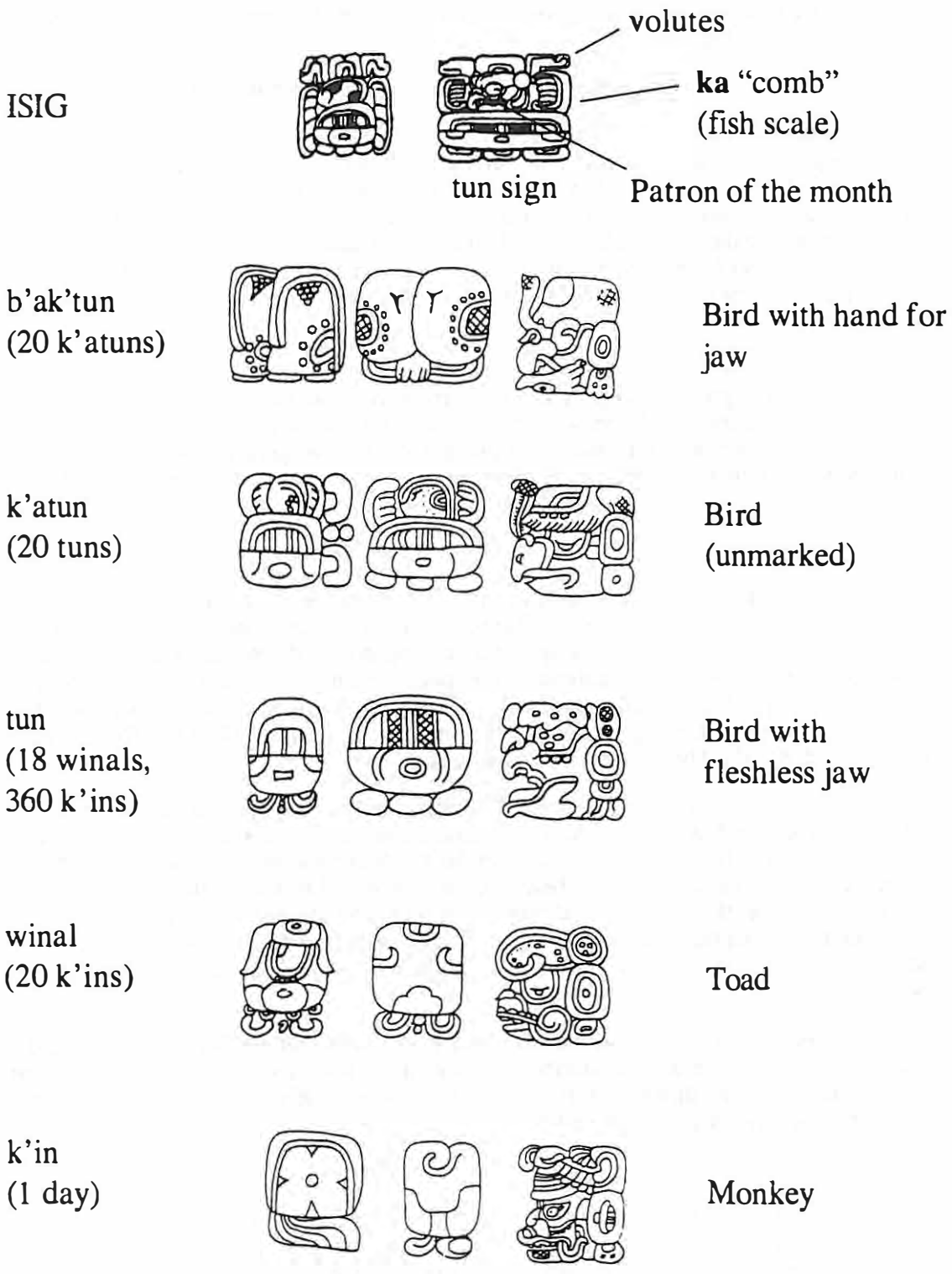
The choice of a starting date for the Mesoamerican calendar count of days was made by the Olmecs before the Maya began to record dates, and we do not know why this particular starting point was chosen. In any case, in our calendar the Maya starting point corresponds to August 13, 3114 BC. Mesoamerican peoples believed that the world had gone through a series of creations, and it may be that this was their calculation of when the present creation began. The hieroglyphic texts that talk about this date do seem to be about the gods setting the world in order (e.g., Quirigua Stela C). It is also the case that only supernaturals are named as actors in dates prior this starting point.

From this starting point, the Maya, like the Olmec before them, counted the days that had elapsed, and gave the unique number to each individual day as its Long Count position. (Our astronomers do something similar with "Julian days.") Of course, the Maya being Maya, they counted these days in groups of twenty.

The Time Periods

We use the Maya words for the time periods they counted (Fig,II-4) because these do not exactly correspond to our units of time. The smallest unit of Maya time is a single day, one **k'in**. Twenty k'in make up a Maya "month," one **winal** (written *uinal* in Colonial sources). The next unit

Fig. II-4. Initial Series Glyphs (ISIG and Time Periods).



up should logically be twenty winals, but in order to create a time period that corresponded roughly to the length of a solar year, Mesoamericans made this next unit only eighteen winals long (360 days): the **tun**. However, the longer periods of time are counted in groups of **twenty**: 20 tuns make a **k'al-tun**, reduced to **k'atun** (7200 days). Twenty k'atuns make a **b'ak'-tun** (144,000 days). (Note that for various reasons some modern scholars use other words for these time periods.)

To fix a date in time, the Maya stated how many b'ak'tuns, how many k'atuns, and how many tuns, winals and k'ins had passed since the starting date. That series of numbers gives the day its unique Long Count position; comparing the Long Count positions of two events tells you which was earlier and which later, and how much time separated the two events. Good for history!

The Initial Series

During the Classic period, it was common practice to start an inscription with a Long Count date that corresponded to the first important event recorded in the inscription, This statement of time periods is called the Initial Series (by us), since it is the first thing on a monument. Each of the time periods being counted was written with a distinctive hieroglyph, and each was accompanied by a numerical "coefficient." The coefficients could be written with bar-dot numbers, head variants or full-figure variants, and of course there were lots of ways to write each time period as well. What makes things somewhat easier is the fact that the time periods are always listed in order of descending size, from b'ak'tuns down to k'ins. Thus, even if a monument is severely eroded and we can only read some of the time periods, we know what they should be by their order. (The Olmec, in fact, did not write the time periods, they only gave the numerical coefficients, in the prescribed order.)

The Initial Series typically begins with a special combination of glyphs called (again, by us) the Initial Series Introductory Glyph (or ISIG). The ISIG (Fig. II-4) has several fixed parts and one variable element. The fixed parts – well, "fixed" is maybe not the right term, considering the scribe had a lot of altematives... The fixed elements are a set of curved shapes called "volutes" on top; a set of two comb-like shapes at the sides (or whole fish!), and a tun sign at the bottom. In the middle, above the tun sign, below the volutes and between the combs is the variable elements, the "Patron of the Month," a glyph that corresponds to the month in which the date falls.

We don't know what all these glyphs symbolize, but the volutes were used by the Olmecs in their Initial Series in just the same place, and the Olmecs placed the actual month date under the volutes, not just the Patron. Some people read the Maya ISIG as *tzikaj tun* "the tuns are counted."

The time periods each have a number of glyphic variants (Fig. II-4), and like the number glyphs these range from an abstract or geometric glyph to head variants and full-figure variants. In their simplest forms, the b'ak'tun glyph is a pair of Cauac (Kawak) signs (see the day names, below). The k'atun glyph is a tun sign below, with two combs bracketing a Cauac sign above. The tun glyph is a tun glyph, probably a slotted drum. The k'in sign is a four-petaled flower, representing the Sun (also *k'in*). The winal glyph is anybody's guess.

In their head- and full-figure variants, b'ak'tun, k'atun and tun are all represented by anthropomorphic birds, the winal is a toad, and the k'in is a spider monkey or the Sun himself.

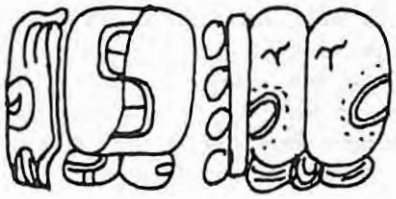
Modern Notation for Long Counts

Archaeologists and epigraphers use a short-hand notation to write Long Counts. Since the time periods always follow in the same order, we simply write the coefficients, separated by periods, without the names of the time periods. Thus, instead of writing "9 b'ak'tuns, 12 k'atuns, 6 tuns, 5 winals and 8 k'ins," we write 9.12.6.5.8.

Fig. II-5. Period Endings

13 b'ak'tuns ended.
(13.0.0.0.0)

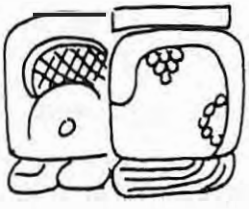
The 14th K'atun ended.
(9.14.0.0.0)



9 b'ak'tuns were completed.
(9.0.0.0.0)

First Quarter K'atun
(x.x.5.0.0)

Half K'atun
(x.x.10.0.0)



Three-Quarter K'atun
(x.x.15.0.0)
"five tuns lacking"

The starting date of the current Maya era was recorded as 13.0.0.0.0, the end of 13 b'ak'tuns (in the previous creation) and the beginning of 13 b'ak'tuns (in the present creation). From this date they began to count anew, and the earliest recorded Maya dates are in the 8th b'ak'tun of the current era, that is, they are after 8.0.0.0.0. For instance, Tikal Stela 29 has an Initial Series of 8.12.14.8.15, and the Leiden Plaque has an Initial Series of 8.14.3.1.2. Most Classic dates fall in B'ak'tun 9, butthe Classic lasted into the 10th b'ak'tun, with Initial Series dates of 10.0.0.0.0 and later. We are now in the 12th B'ak'tun and rapidly approaching a new era that will begin on the next 13.0.0.0.0. The last day of the current b'ak'tun is 12.19.19.17.19, December 22, 2012 (Julian day 2456284).

Period Endings

The ends (or maybe the beginnings) of major time periods, like the end of a k'atun or a b'ak'tun – anniversaries of the Creation date – were special occasions for the Classic Maya, and many monuments were erected to commemorate those dates, called "Period Endings" in the literature (Fig. 9). It became a matter of historical record who was ruler of a site at a Period Ending, a fact that might be recalled centuries later on another monument. At Palenque, for instance, some monuments record the birth and accession dates of the rulers (Tablet of the Cross), some their death dates (Pakal's Sarcophagus), and some pay especial attention to Period Endings (Tablet of the Inscriptions). It is common to mention period endings in accounts of rulers' careers (Tablet of the 96 Glyphs, Palace Tablet, Sarcophagus, etc.). In the peak episode of Pakal's Sarcophagus, his birth and death dates are given as well as the statement "Four were his Period Endings" (i.e., he lived through four k'atun endings, from 9.9.0.0.0 to 9.12.0.0.0).

The Long Counts of all period endings end in a series of zeros, and the lowest and least important period ending is a tun ending, when the coefficients of the winals and kins are at zero, for example, 9.15.4.0.0., the end of the 4th tun of the 15th k'atun of the 9th b'ak'tun. Since there is a tun ending every 360 days, this is not a very important occasion, but there are inscriptions in which such an ending is noted.

A k'atun ending, occurring only once in twenty years (actually, 20 tuns) is a major occasion. It appears to have been the custom that the ruler in power at a k'atun ending would have a monument erected on such an occasion, the image and inscription noting that he carried out the proper ceremonies, usually involving offerings of incense (the so-called "scattering" events).

B'ak'tun endings occur only every 400 tuns, and since the Classic period spanned only a few b'ak'tuns, these are rare occasions. In fact, only the 9th and 10th b'ak'tun endings fall within the Classic period and are commemorated in known hieroglyphic inscriptions. At Palenque, the only ruler known to be associated with a b'ak'tun ending is "Casper" (a nick-name attributed to Floyd Lounsbury, based on the similarity between the ruler's name glyph and a cartoon ghost). Casper was ruler at the 9.0.0.0.0 period ending. The other b'ak'tun endings were either too early or too late to have been recorded.

Calendar Round Dates

The Long Count anchors dates in time, but is not a date in itself. Dates as such come from the so-called "Mayan Calendar." This calendar is actually not limited to the Maya but is shared by the majority of Mesoamerican peoples. Just as the European calendar is shared throughout the Western world across different languages, the Mesoamerican calendar was shared across Mesoamerica, but each language group had its own names for the time periods, days, and months. The Maya actually combined several different calendars in their time-keeping, but the combination that is most common is called the "Calendar Round," which combines a solar calendar with a divinatory almanac.

Fig. II-6. Month Names (the *Haab'*)

Pop

Uo

Zip

Zotz'

Zec

Xul

Yaxkin

Mol

Ch'en

Yax

Zac

Ceh

Mac

Kankin

Muan

Pax

Kayab

Cumku

Uayeb

The *Haab* or Solar Year

The solar calendar, often called by its Yucatec Maya name, *haab'*, is 365 days long and corresponds to the rough length of a solar year. It is the system which most resembles our system of twelve months, which accomplishes the same goal of keeping track of the sun's annual movements and the resulting seasons. This calendar had a practical function and enabled people to plan agricultural activities, knowing, for instance, that the rains could be expected in a given month. The Maya divided the year (that is, the *haab'*), into eighteen "months" (winals) of twenty days each (Fig. II-6). This gives a total of 360 days. In order to bring this calendar into synch with the solar year, they added a five-day period at the end of the twenty months. In 16th century Yucatan, this period was called Wayeb' (*Uayeb*). So, (18 x 20) +5 = 365 days, the length of the solar year. Within each winal, the days are simply numbered, much as we number the days of the month. But the Maya started each winal with the "seating of the month" as the first day, and then followed with days 1-19. This first day is often called ø (zero) in the literature, but the Maya never used the number zero here, and always referred to this day as a "seating," using the same glyphs they used for the "seating" of kings, i.e., their accession to office.

The first month (winal) of the year (haab') is Pop; the name means "mat," the woven reed mat or petate that people sat on. So the image here is that the year begins with its "seating," just as each month begins with its own seating. Pop begins with "the seating of Pop." The next day is 1 Pop, followed by 2 Pop, 3 Pop, 4 Pop, and so on until 19 Pop, the last day of the month. The next day is "the seating of Uo (Wo)," then 1 Uo, 2 Uo, etc.

The names of the months vary somewhat from region to region (and certainly from language to language), but most of the older literature uses the 16th century Yucatec Maya names recorded by Bishop Landa and listed by Thompson (1960) in a rather mixed orthography: Pop, Uo, Zip, Zotz', Zec, Xul, Yaxkin, Mol, Ch'en, Yax, Zac, Ceh, Mac, Kankin, Muan, Pax, Kayab, Cumku, and finally, Uayeb. Some modern authors have modernized the spelling of these names but otherwise left them unchanged: Pohp, Wo, Sip, Sotz', Sek, Xul, Yaxk'in, Mol, Ch'en, Yax, Sak, Keh, Mak, K'ank'in, Muwan, Pax, K'ayab, Kumk'u, and Wayeb (Stuart 2006:81-82). Other scholars, using phonetic clues from the glyphs themselves as well as comparative evidence from Mayan languages, attempt to represent the words the way the Classic Maya might have said them. This results in radical changes like Ik'at for Uo; K'anasiiy for K'ayab; Yaxsihoom for Yax; Wayha'b' for Uayeb, Chaksihoom for Ceh; Chakat for Zip; Kaseew for Zec; Hulohl for Cumku; Tzikin for Xul; Suutz' for Zotz'; Uniw for K'ank'in (Stuart 2006:138-169). Since these new readings are somewhat unstable, changing every time scholars improve their guesses, we continue to use the old Yucatec Maya names, even though we understand that these were not the words used in the Classic period by the Chol-speaking elite.

The names of some of the months have apparent meanings; others have meanings that were lost in antiquity. In the first set, besides Pop "mat," there are Zotz "bat," Yaxkin "new/green sun," Ch'en "cave," Yax "blue/green," and Zac "white." The other words are best taken just as the names of the months, just as we have no idea what some of our month names mean (March, April, May, etc.). Thompson (1960:104-119) discusses what is known about these names.

The name of the final month of the year, the five-day period, Uayeb, means "bed," a sleeping place. Thus at its end the year is put to sleep, just as it was seated at its beginning. This five-day period was the time for special ceremonies, as recorded in the Codices in what are called the New Year's Pages. Some Mayas continue to honor these days. In the Chuj town of San Mateo Ixtatán, Huehuetenango (Hopkins, field notes), the prayermakers go to the crosses on the east edge of town on the first day, cleaning the altars and making offerings and prayers. The next day they go to the north side of town and do the same there; on the following days they repeat their activities in the

Fig. II-7. Day Names (the *Tzolk'in*)

Imix

Ik

Akbal

Kan

Chicchan

Cimi

Manik

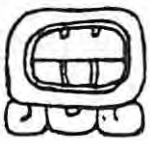
Lamat

Muluc

Oc

Chuen

Eb



Ben

Ix

Men

Cib

Caban

Etz'nab

Cauac

Ahau

west and in the south. On the final, fifth day, they go to the center of the town, the churchyard, and complete the ceremonies of what they call the Five Days (*hoye' k'uh*).

The *tzolk'in* or Sacred Almanac

The second system for reckoning time is not related to the solar year. It is a divinatory almanac called the *tzol-k'in* "sequence of days," and it is related to ritual cycles and the influence of the gods and other supernaturals on the affairs of man. The tzolkin consists of twenty sequential day names which combine with thirteen numbers to create a cycle that repeats every 260 days. Day Names

Each day has a name, just as we have Monday, Tuesday, and so on. But the Maya system has twenty day names, not just seven (Fig. II-7). The names each appear in sequence, and after twenty days the cycle repeats again, and so on ad infinitum. The series of day names (again, following Thompson 1960) is Imix, Ik, Akbal, Kan, Chicchan, Cimi, Manik, Lamat, Muluc, Oc, Chuen, Eb, Ben, Ix, Men, Cib, Caban, Etz'nab, Cauac, Ahau. As with the month names, current scholars have rewritten these names: Imix, Ik', Ak'bal. K'an, Chikchan, Kimi, Manik', Lamat, Muluk, Ok, Chuwen, Eb, Ben, Ix, Men, Kib, Kaban, Etz'nab, Kawak, and Ahaw (Stuart 2006:77-80), or they have substituted reconstructed names: Ajaw for Ahau; Ook for Oc, etc. (Stuart 2006:138-169). As with the month names, we will continue to use the traditional day names here.

Some of these names have transparent meanings: Ik is "wind," Akbal is "night," Kan is "yellow," Chicchan is "deer snake" (a mythological animal), Cimi is "death," Lamat is "Venus," Ix (*hix*) is a kind of jaguar, Caban is "earth," Etz'nab is "flint," Cauac is an old name for the rain god later known as Chac, Ahau means "lord." Some of the other names can be puzzled out, but they are best just taken as the names of the days. Thompson (1960) discusses what is known about them.

Day Numbers

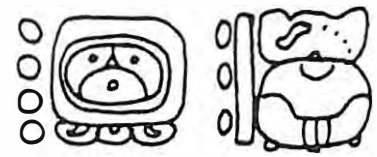
The same day name repeats every twenty days, but it combines with a different number. Each successive day gets a number, and the numbers run from 1 to 13 and then repeat. If today was a 1, tomorrow is a 2, the next day a 3, and so on. The 14th day will be a 1 again. Put together, the day names and day numbers create the tzolkin, a cycle that is 260 days long, and then repeats.

If we start with a day whose number and name are 1 Caban, an arbitrary starting place, the next day is 2 Etz'nab, followed by 3 Cauac, 4 Ahau, 5 Imix, 6 Ik, 7 Akbal, 8 Kan, 9 Chicchan, 10 Cimi, 11 Manik, 12 Lamat, and 13 Muluc; the numbers now repeat: 1 Oc, 2 Chuen, 3 Eb, 4 Ben, 5 Ix, 6 Men, 7 Cib, 8 Caban, 9 Etz'nab, 10 Cauac, 11 Ahau, 12 Imix, 13 Ik, 1 Akbal, 2 Kan, and so on. Note that every time a day name comes back twenty days later, it combines with a different number. This goes on until the day name has combined with each of the numbers, and then, 261 days from the beginning, the initial day name takes the starting number once again. That is, the beating of 20 day names against 13 numbers creates a sequence of 260 days, each of which has a unique combination of the two factors.

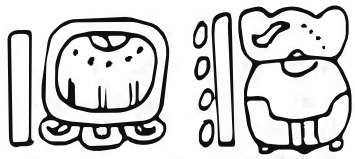
The "Luck of the Day"

Why is 260 days an important cycle? We don't really know, but it has been noted that 260 days coincides closely with the length of human gestation. That might be important because each of the day and number combinations has a different "luck of the day." This is the "calendar" that is used even today by diviners in the Guatemalan Highlands, where the day-keepers regularly cast fortunes for people and give advice based on the combinations of numbers and days. Each day name represents a force to be reckoned with, and the numbers apparently modify the powers of the days. There are days and numbers that are considered more and less favorable to different activities,

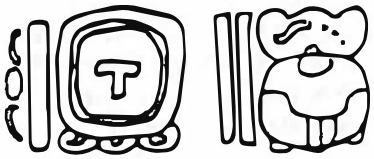
Fig. II-8. Calendar Round Dates for the First Days of this Creation



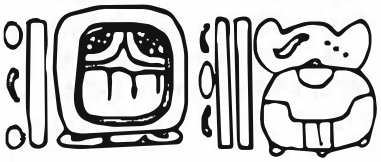
4 Ahau 8 Cumku



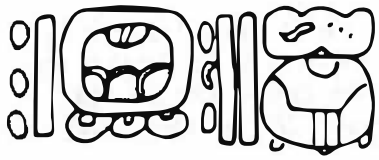
5 Imix 9 Cumku



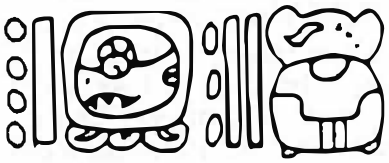
6 Ik 10 Cumku



7 Akbal 11 Cumku



8 Kan 12 Cumku



9 Chicchan 13 Cumku

and the combinations may reinforce or neutralize their powers. Divination is not a simple-minded matter of dealing with good and bad, but with the different qualities of each of the supernatural powers and the different effects each may have on different sorts of affairs. A date that augurs badly for some events may be favorable for others.

Day Names as Personal Names

A widespread practice in Mesoamerica was the use of a person's birth day name and number as a personal name, especially during childhood. In some areas – notably Oaxaca – thesenames were kept throughout life. The characters named in the Mixtec Codices are known by their birth names, such as Eight Deer (8 Manik), the famous Mixtec king who stars in the Codex Nuttall; Eight Deer also has the nick-name "Jaguar Claw," and many other personages in the Codices have secondary names. Incidentally, a study of these names in Oaxaca showed that nobody was ever "born" on a bad day, so we believe that there was some manipulation of the dates, and that people were probably given their names on a chosen day close to their birth date.

In the Maya area, birth dates were not used as personal names, at least not by the elite whose names we read in the inscriptions. We have many instances of rulers taking on new, royal names when they took the throne, but the names they replaced were not calendrical names. For example, Palenque's king K'an Joy Chitam (II) was known as Ox Ch'akan Mat before his accession; Yaxchilan's Shield Jaguar (III) was called Chel Te' as a youth. Neither of these "baby names" is calendrical. On the other hand, several of the characters in Maya mythology have names that are combinations of numbers and words (1 Ixim, 1 Hunajpu, 7 Hunajpu, 1 Batz') and some of these appear to be calendrical (1 Chuen, 1 Death, 7 Death), so the custom was known. In the late Postclassic and Contact period, many of the Maya chieftains in eastern Chiapas, acculturated to the Mexican-influenced Gulf Coast, have calendric names.

The Combination of *Haab'* and *Tzolk'in*

Each day has a number and day name (from the tzolk'in) as well as a position within a month (from the haab'). The combination of the solar year and divinatory almanac dates for a particular day is known in the literature as a Calendar Round date, e.g., the day of Creation, 4 Ahau 8 Cumku and the following days, 5 Imix 9 Cumku, 6 Ik 10 Cumku, 7 Akbal 11 Cumku, and so on (Fig. II-8).

The haab and tzolkin are different in length, one repeating after 260 days and the other after 365 days. In fact, every day in a period of 52 years has a unique combination of tzolkin and haab dates (52 haabs = 73 tzolkin cycles): 4 Ahau 8 Cumku comes again after 52, 104, 156 and 208 years, and every 52 years thereafter. This 52-year cycle is called the Calendar Round, since every 52 years you go around the calendar, so to speak (not that the Maya had round calendars!).

In Classic times, the average life span fort he ordinary person was probably less than this 52 years, although many of the elite lived to a ripe old age (even into the 100s). In an average lifespan, then, a given Calendar Round date would occur only once, so this combination of dates was sufficient for a person to date the events of his or her life without recourse to any other system. For purposes of recording history, however, Calendar Round dates have to be referenced to come other calendrical landmark such as the Long Count, discussed above, or Period Endings, discussed below.

Tying Calendar Round Dates to Absolute Time

Since the same Calendar Round date repeats every fifty-two years, recording history with just those dates would ultimately lead to confusion over which ancient event had preceded or

followed which other events, since it would be uncertain on which of the possible Calendar Round occurrences the events had taken place. Just this sort of confusion occurs in the interpretation of the late historical records of the Books of Chilam Balam, when Long Counts were no longer used. Those records do use an abbreviated system similar to Period Ending anchors called the Short Count, but there is still a degree of uncertainty.

Fixing Dates to the Long Count

There are several ways to tie a Calendar Round date to absolute time. One way is to give the Long Count position of the date, since every day has a unique position in the Long Count (within a span of 13 b'ak'tuns, or 5200 years). The first date of the current era is noted as 13.0.0.0.0, 4 Ahau 8 Cumku (the equivalent of 0.0.0.0.0, for reasons best left unexplained!); the Calendar Round 4 Ahau 8 Cumku occurs again 18,980 days later, on 0.2.12.13.0, then on 0.5.5.8.0, again on 0.7.18.3.0, and so on until the 12.18.6.14.0 4 Ahau 8 Cumku of our era (March 26, 1980). The Long Count figure allows us to place each of these Calendar Round dates in their proper order.

Classic period monuments typically begin with an Initial Series that presents the Long count of the initial date, that is, how many days have elapsed since Creation to bring us to the historical date, the first Calendar Round in the inscription. This information gives us an absolute chronology for the dates mentioned on the monument. Barring eroded or illegible information, there is only one possible interpretation of the dates given. In fact, the early definition of the Classic period was the span of time within which the Maya recorded their dates with the Long Count (from about AD 300 to AD 1000).

Fixing Dates to Period Endings

Another way to tie the Calendar Round dates to absolute time is to relate them to Period Endings, usually k'atun endings, Long Count dates that end 0.0.0, e.g., 9.18.0.0.0, the "end of the 18th k'atun." Since most of Maya history falls in b'ak'tun 9, simply identifying the k'atun places the date securely. A statement like "it was the end of the 18th k'atun" is an unambiguous reference to 9.18.0.0.0.

All Period Endings occur on Ahau days, since the Creation date fell on (4) Ahau, Ahau repeats every 20 days, and all the time periods are even multiples of 20 days long: winals are 20 days long, tuns are 20 x 18 days long, k'atuns are 20 times longer, and so on. Since each Period Ending falls on an Ahau day, it became the custom late in Maya history to refer to the k'atuns simply by their ending date: K'atun 4 Ahau, K'atun 8 Ahau, and so on. This is the time anchor known as the Short Count that was used in the Books of Chilam Balam. Because of the mathematics, successive k'atun endings will fall on Ahau days with numbers that descend by twos: K'atun 8 Ahau is followed by K'atun 6 Ahau, K'atun 4 Ahau, K'atun 2 Ahau, K'atun 13 Ahau, K'atun 11 Ahau, and so on.

(Incidentally, a useful fact to know is that the last digit of the Long Count, the number of single days elapsed, tells you what day name the date will fall on. If the number is 0, the day will be Ahau. If it is 1, the day will be Imix; if 2, Ik; if 3, Akbal, and so on.)

The Supplementary Series

Following the Initial Series and accompanying Calendar Round dates we often find one or more additional sets of chronological information that together are called the Supplementary Series or the Secondary Series. These are not essential, and some sites use some of them more than others. In recording the information, it is common for the Supplementary Series to be written between the two halves of the Calendar Round, following the tzolk'in date and before the haab' date.

Fig. II-9. Lords of the Night

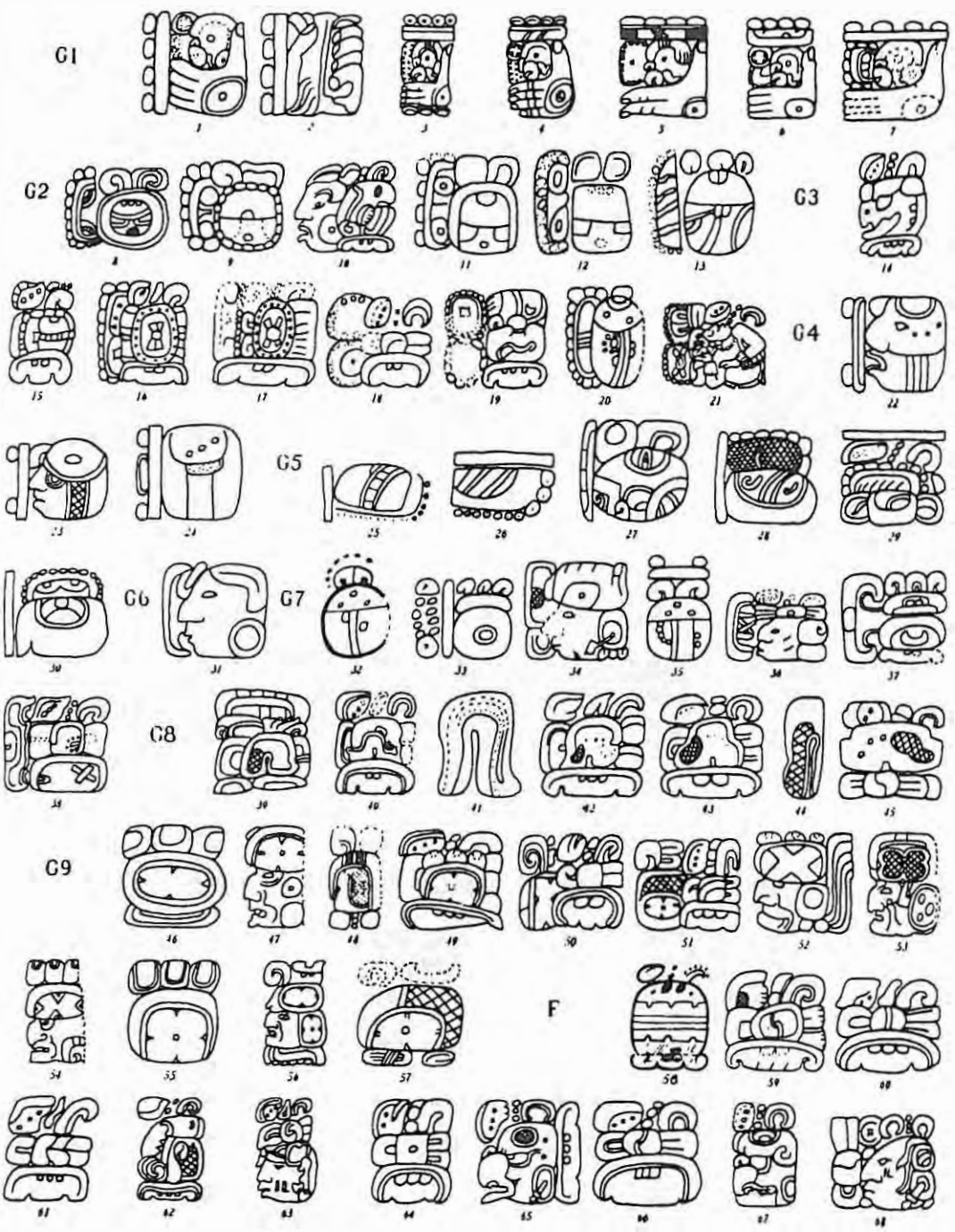


FIG. 34

Thompson (1960:Fig. 34), Glyphs G and F

Fig. II-10. Lunar Series Glyphs

Glyphs D and E: Age of the Moon (days since New Moon)

First Sighting

10 days since the Moon was born

26 days since the Moon came

Glyph C: Number of the Lunation (1-6)

— Moon

2nd lunation

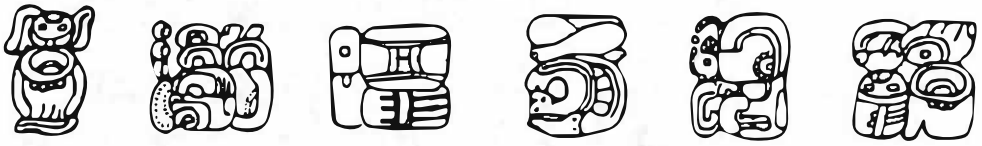
— Skull

4th lunation

— Serpent

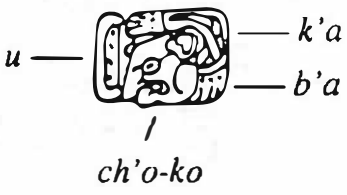
6th lunation

Glyph X: Name of the Lunation



X1 X2 X3 X4 X5 X6

Glyph B: *u (ch'ok) k'aba'*, "[is] its (emergent) name"



Glyph A: Duration of the Lunation (29 or 30 days)

20 + 9

20 + 10

The most common parts of the Supplementary Series are the Lord of the Night and the Lunar Series, as well as an esoteric notation known as the 819-day Count.

Early investigators working on these inscriptions, before their meanings were discovered, assigned letters to the sets of hieroglyphs they could identify as sets, and gave numbers to the variants within each set. For reasons that made sense at the time, they started at the end of the Series and worked towards the beginning, so that the last glyph set in a Secondary Series is the set known as Glyph A, preceded by Glyph B, then Glyph C, and so on to Glyph G, the last (or first!) set of the series. The later discovery of several rare sets of glyphs led to the designations of Glyphs X, Y, and Z, stuck in among the more orderly sets A-G.

Lords of the Night (Glyphs G and F)

Just as the days were ruled over by a set of twenty deities represented by the day names, the nights were ruled over by another set of nine gods, called the Lords of the Night (Fig. II-9). Each successive date was ruled over by the next lord in the sequence, and after nine days the first lord retumed to power. We do not know much about these deities, although it is generally assumed that they are related to the Underworld. The glyphs that represent their names are collectively known as Glyph G, and the different names are usually referred to by the letter G and an arabic number that indicates their order in the sequence: G1, G2, G3, G4, G5, G6, G7, G8, and G9. The Lord of the Night most commonly mentioned is G9. Since G9 was the Lord of the Night on the k'atun ending 4 Ahau 8 Cumku and a k'atun has 9 x 800 days, all k'atun endings fall under G9's domain.

Glyph G, the personal name of the Lord of the Night, is almost always associated with another glyph called Glyph F, which either follows Glyph G or is conflated with it. Various readings have been proposed for Glyph F, which is apparently a verbal phrase meaning something like "was in office," so that the combination of Glyph G and F read "God So-and-so was in office" (on a particular date). The glyphs representing the Lords of the Night usually appear with Initial Series dates, but they may also be used with simple Calendar Round dates, being written between the two parts: 4 Ahau G9 8 Cumku.

A very interesting deviation from tbis pattem occurs on Stela E at Quiriguá (Fig. II-10). The Initial Series on this monument is a k'atun ending, 9.17.0.0.0., which happens to fall on an eclipse date. In the inscription, the Lord of the Night is pulled from his usual place following the day name and placed just ahead of the day name, suggesting that on this date the Lord of the Night took precedence over the Lord of the Day.

The Lunar Series (Glyphs A-E and X)

Long Count dates are often accompanied by information about the state of the moon, in a series of glyphs called the Lunar Series (Glyphs A-E and X). The information given in a complete Lunar Series is: (1) the age of the moon, counting from New Moon, Glyphs D and E; (2) how many lunations have been completed, in a series of six lunations that repeats twice in a year, Glyph C; (3) the name of the current moon, Glyphs X and B, and (4) the length of the current lunation, Glyph A (Fig. II-10).

Glyphs D and E (state the age of the moon in a variety of ways, not all of which have been deciphered by epigraphers. Thompson and other early investigators worked out the structural and mathematical relations between these glyphs and determined the nature of the information that was being given. We now understand that the information is being given in sentences, not just in tabular form.

Fig. II-11. 819-Day Count Expressions from Palenque

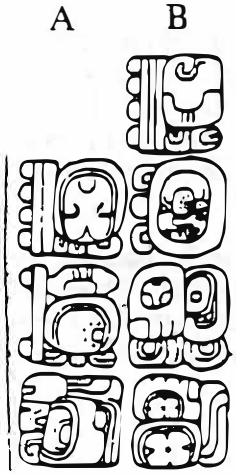
Tablet of the Cross

It had been 0 days and 1 winal
since entered
K'awil (God K)
the South
Place
on 1 Ahau
18 Zotz'

Tablet of the Sun

It had been 11 days, 2 winals,
and 1 tun
since entered
K'awil
the North
on 1 Ik
10 Zec

Tablet of the Foliated Cross



It had been 19 days
and 14 winals since
1 Cauac
7 Yax
when entered
K'awil
the West.

One common way to give the age of the moon, for instance, is to say "it is 10 days since the moon was born," or "it was five days since the moon was born." For the early epigraphers, this was just Glyph 10D or Glyph 5D. Now, although we still assign them the same meaning, we can read the actual words of the statement. The age of the moon can also be stated more poetically: "it was the first sighting of the moon," or "it had been 26 days since the last lunation ended" (that is, the moon is 26 days old).

The statement of the age of the moon on Stela E at Quiriguá, mentioned above, is instructive. In place of any normal statement of age, the hieroglyphs show a darkened moon covering up a sun sign, a rather obvious reference to the solar eclipse.

Glyph C states the series number of the lunation (or perhaps that of the last lunation completed). The glyphic expression, still undeciphered, includes a bar-dot number (from 1 to 6), a variable element not well understood, an extended hand (the "flat hand" that sometimes means "completion"), and the "moon sign," a crescent with three dots angling across between the tips. The little understood variable element has three variables, the head of the moon, a skull, and a stylized serpent.

The numbers run from one to six and then repeat, indicating that there was a cycle of six lunations, and in fact the ends of these cycles correspond to possible eclipse dates, one every six lunar months (either a solar or a lunar eclipse). The variants of glyph C are numbered, 1C-6C.

Glyphs X and B together form a sentence that gives the name of the lunation. We cannot actually read any of the names, and there is no popular tradition of moon names to help us, but we know Glyph X represents a name because Glyph B reads *u k'aba'* "is its name." Corresponding to the six lunar months in a cycle, there are six variants of glyph X, simply numbered X1-X6.

Glyph A gives the duration of the lunation. This is apparently not an observational datum, but reflects a system in which lunations alternate between 29 and 30 days to give an average of 29.5 days, close to the actual length of a lunar month. The glyphs include a full moon sign with a single dot in its enclosure, a convention for the number 20, and a second number, either 9 or 10 (in bar-dot or head-variant form). These represent the duration as either 29 or 30 days long, respectively.

The fact that there are only two variants here, as opposed to the numerous variants in the other positions, is what led the early epigraphers to start here in their investigations into the Supplementary Series; ergo, Glyph A occurs at the end of the sequence.

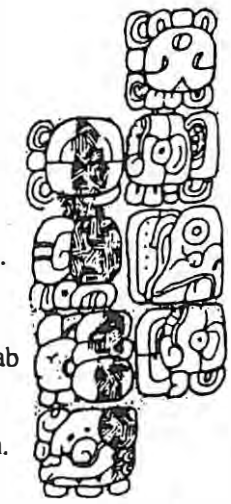
The 819-day Count

The 819-day count is a little understood piece of esoteric chronology. We can read most of the glyphs, but we have no idea what they are talking about. There is a series of sentences featuring God K, K'awil, who is said to move through a series of four quadrants, counter-clockwise. The quadrants are named as East, North, West, and South. The information given is (for the Initial Series date) how many days it had been since God K entered the current quadrant, and the date of that event. Actually, we can't read the event glyph, but "entered" seems to make the most sense; to be safe, we just call this "the 819-day Count verb" (Fig. II-11). Thompson (1960) established that these counts had to do with intervals of 819 days each, and noted that 819 is the product of several numbers of importance to the Maya, namely 7, 9, and 13. He hypothesized that these related to something cycling through the nine levels of the Underworld (the Lords of the Night), seven levels of the earth, and 13 levels of the heavens, the three cycles returning to their starting point after 819 days. He tested various astronomical cycles but was unable to discover any astronomical correlations with these cycles, nor has anyone else succeeded. The meaning of the 819-day count thus remains a mystery.

Fig. II-12. Distance Numbers

PAL Cross U6-T10

T U



It was 1 day, 1 winal,

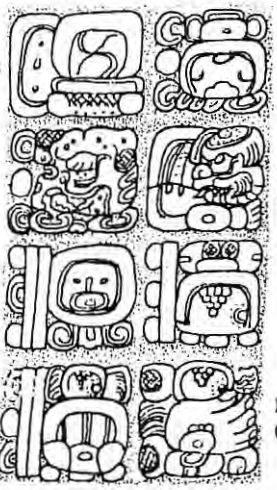
and 1 tun — since the birth

of (titles... — ...titles)

Aj Kul Mo' Nab — and then was born

Kan Balam.

PAL Palace Tablet E15-F18



DNIG: *u tz'akaj* (Time) added segments — for 1 day, 0 winals

and 1 tun (since the last event) — *i uri* and then it came to be

12 Ahau — 8 Ceh

the 11th k'atun. (9.11.0.0.0) — He set the stone (erected the monument).

PAL Palace Tablet M9-N12

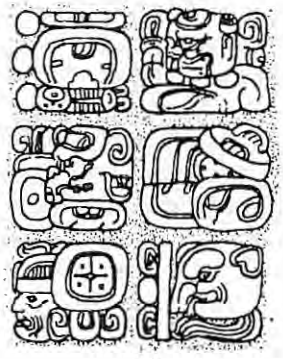
It had been 5 days and 1 winal — since (with respect to) 7 Ahau

3 Cumku — the 1/2 Period Ending (9.13.10.0.0)

and then died — and was buried

K'inich Kan B'alam — Holy Palenque Lord.

PAL Palace Tablet M13-N15



3 days and 5 winals after (**la-ta**) — the death of

White Headband (the king Kan Balam) — and then it dawned

on 5 Lamat — 6 Xul.

It has occurred to us that there might be an earthly institution referenced here, not a supernatural one. First, God K is now known to be the patron of royalty, the symbol of authority – kings hold God K scepters on important occasions. Second, we know from at least late Postclassic times in Yucatan that towns were often divided into four quadrants, through which certain civil positions cycled. Third, in the Codices there are numerous charts that record cycles of time including 9-day intervals, 13-day intervals, etc. Much attention has been paid to unravelling the mathematics of these tables, but their purpose is not known. Our working hypothesis is that all these elements fit together in something like a cargo system in which there are three (or more) ceremonial organizations in each quadrant of a community that celebrate or otherwise function on days separated by intervals of 7, 9, and 13 days. The celebrants of all organizations in a given quadrant begin their activities on the same day; since there are no common factors among the numbers, their celebrations do not coincide for 819 days. After 819 days all the putative cargo groups once again celebrate on the same day, and authority (represented by God K) moves to the next quadrant. There is no way to prove this, of course, but we are supported by one of the most powerful arguments used in Maya epigraphy: It works for me!

Distance Numbers

Once the base date of an inscription has been established by an Initial Series or with a Calendar Round date locked into absolute time by some other mechanism, later dates in the inscription can be referred back to the base rather than being tied to some external time anchor.

The mechanisms for tying dates together throughout a monument usually involve Distance Numbers. Distance Numbers stand between two dates and state the time interval that separates them. They are the equivalent of the italicized phrase in "On July 4, John went to Chicago. *Four days later*, on July 8, he returned." Since the time interval is stated, we can be certain that the July 8 on which John returned was the one four days after the starting date, not the one a year later or ten years later. If the first date is known to be July 4, 1988, we know that the second date is July 8, 1988.

The time periods in the Distance Numbers are written with the same glyphs used in the Initial Series, although the abstract or geometric variants are most commonly used (it's hard to think of an example where head variants or full-figure glyphs are employed; there may not be any). Likewise, the numerical coefficients are almost always expressed in bar-dot numbers.

What is striking about the way the Distance Numbers are written is that the order of time periods is reversed from that used in the Initial Series. That is, the number of days is first, then the months, the tuns, the k'atuns, and so on: k'in, winal, tun, k'atun, b'ak'tun. Second, the glyph for days, k'in, is almost always suppressed, slid behind the winal glyph, with only its coefficient left showing. Visually, it appears that the winal glyph has two coefficients, but the one to the left or above – the one that occupies the upper left corner of the glyph block – belongs to the k'ins, not to the winal.

A Distance Number may be introduced by a verbal expression which means something like "time passed," forming a sentence that reads "time passed for so many days, months, and years..." This verbal expression (Fig. II-12) is known in the literature as the Distance Number Introductory Glyph (DNIG). Various readings have been suggested, but the most commonly accepted is **tz'akaj**; **jelaj** is also a possibility. Both verbs (here in passive forms) refer to extending a series, **tz'ak** by adding segments, **jel** by replacing element after element in a series. A paraphrase might be "days were added for so much time" versus "days replaced each other for so much time."

Other kinds of Distance Numbers occur, although not all of them are traditionally called Distance Numbers. Occasionally there are expressions like "the next day" or "on the third day" which are not written like standard Distance Numbers but which have the same function.

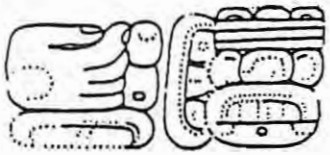
Fig. II-13. Word Order in Sentences

Transitive Sentences

1 Ahau 13 Mac u tal kab' Matawil.
On 1 Ahau 13 Mac he-touched-earth Matawil.
Temporal, Pronoun-Verb-Object, Subject

U ch'am yax tun [name] *Ch'uh Yochib' Ajaw.*
He-set-new-stone Ruler 4, Lord of Piedras Negras.
Pronoun-Verb-Object, Subject

Intransitive Sentences



Ended the 16th k'atun.
Verb-Pronoun (ø), Subject

I uti 6 Etz'nab 11 Yax.
And then it was 6 Etz'nab 11 Yax.
Conjunction Verb-Pronoun (ø), Subject

Neb'i K'inich Pakal.
Died Lord Pakal.
Verb-Pronoun (ø) Subject

Positional Sentences

10 Muluc 17 Uo lik'wan u pasib' yotot Ix Uk.
On 10 Muluc 17 Uo was dedicated the doorway of the house of Lady Xok.
Temporal, Verb-Pronoun (ø), Subject (Possessed Noun Phrase)

Chumlaj ta Ajawle K'inich Aj Kul Mo' Nab'.
Seated as Lineage Lord (was) Aj Kul Mo' Nab'.
Verb-Pronoun (ø), Complement, Subject

Chumwan ta Hun Ix Yol Ik'nal Ch'uh Bak Ajaw.
Seated as Ruler (was) Lady Yol Ik'nal of Palenque.
Verb-Pronoun (ø) Complement, Subject

Equative Sentences

U chan Muluc Ajaw K'an Tok... Kahal.
The captor of Lord Muluc (is) K'an Tok... Chieftain.
Predicate (Nominative), Subject

X4 u ch'uh k'ab'a'.
X4 (is) her holy name.
Predicate (Nominative), Subject

Distance Numbers are often found in association with a following sentence that expresses the occurrence of the date to which the Distance Number leads. These expressions use the verb **ut** "to happen, to come to pass." Thompson (1960:163) thought this was the verb **xok** "to count" and the preposition **ti** "to," meaning "count to (**xok ti**) such and such a date." This turns out to be a confusion of an iguana head (**hu** or **ho**) with a shark (**xok**). The glyph is now thought to be *ut-i*, the past tense (completive aspect) of the verb *ut*, spelled out **u-ti**, The meaning of these expressions is something like "So much time went by; such and such a date came to pass."

Two elaborations on the verb **ut**, one of which identifies a date as having been earlier, the other as being later, were called by Thompson (1960:162-166) the Anterior Event Indicator (AEI) and the Posterior Event Indicator (PEI). We now read these as AEI **ut-i-y(a)**, *utiy* "it had happened" and PEI **i u-ti**, *i uti*, "and then, it happened." The sentences in which these are used can be read something like "After so much time had passed, it came to be the date so-and-so."

Word Order

The order of elements in a hieroglyphic text is directly comparable to the order of words in a sentence, and changes in normal word order are among the most important indicators of informational importance. Normal, expected ("unmarked") word order does not stress any one part of the sentence over another. Unexpected ("marked") word order focuses attention on a particular element within the sentence and thus indicates its increased importance in the development of the narrative. New information is often presented in marked constructions; old information is downplayed and may even be omitted from a sentence in order to highlight what remains. Important new information may be repeated several times, or elaborated on by adding extra bits of new information in each restatement.

Hieroglyphic texts are very poetic in their structure, as are traditional Mayan texts whether they be prayers and rituals or tales of gods and heroes. The grammatical structures which characterize these language styles are formal and constrained. Where our poetry is governed by patterns of rhythm and rhyme, theirs is revealed in patterns of repetition and coupleting in stanza structures and parallel constructions and in word plays of many kinds.

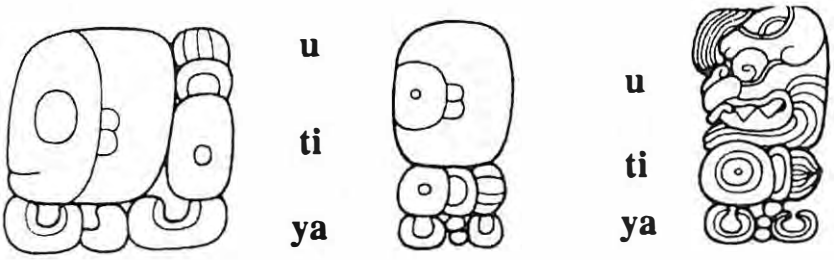
In the hieroglyphic inscriptions (Fig. II-13), normal (expected, unmarked) word order is the same as in modern Chol and most other Mayan languages. This is usually stated to be "verb initial," meaning that in a simple transitive sentence with only three elements – actor (Agent or Subject), action (Predicate or Verb) and recipient of the action (Patient or Object) – the order of these elements is Verb followed by Object followed by Subject, or VOS. That is, a sentence with English word order SVO ("the boy hit the ball") would be rendered as VOS ("hit the ball the boy").

A sentence with an Intransitive or Positional Verb as its predicate would have only two major elements, the Verb and the Subject, VS ("he came," "he sat", that is, "came he," "sat he"). There are other kinds of predicates that are "non-verbal," those that we know as Predicate Nominative (with a noun in place of a verb, "he [is] a man") and Predicate Adjectives, with an Adjective in place of the verb ("it [is] red"). (Note that in Mayan languages, there would be no verb "is" in these sentences, i..e., "man he," "red it"). The order of elements is still Verb(-like thing) initial.

If other sentence elements are added, unmarked order would put them at the end of the sentence: "sat he on the throne," "went he yesterday." But Mayan languages tend not to pile too much information in any one sentence. The preference is to express the elements in a series of sentences. Thus, instead of "Sat he on the throne holding the God K scepter," we would get "Sat he on the throne. Held he the God K scepter."

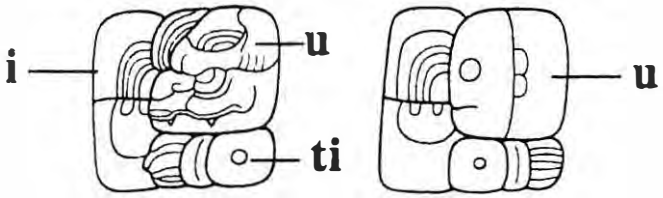
Fig. II-14. The Event Verb **ut** 'to come to pass'

The "Anterior Event Indicator" **u-ti-ya**, *utiy*



Intransitive verb *ut*, completive *ut*-i, perfective *ut-i-y*, *utiy-ø* "it had happened"

The "Posterior Event Indicator" **(i) u-ti**, *(i) ut-i*, *i uti-ø*, "and then it came to pass"



Conjunction *i*, intransitive verb *ut*, completive *ut-i*,
i ut-i-ø "and then, it came to pass"

The Future Conjugation of *ut*, **u-to-ma**, *utom-ø* "it will be"

Intransitive verb *ut*, future *ut-om*,
utom-ø "it will come to be"

In a series of such sentences, it is common for the Subject to be named in the first one, and to be represented only by a pronoun in successive sentences. In discourse analysis terms, in these paragraph-like text segments, the Topic (protagonist) is established early on, and can then go without overt expression (as a pronoun) in later sentences. This allows us to identify the Subject of a sentence where the name or title is not expressed and the pronoun might be ambiguous. This is the same problem that English teachers discuss as the identification of the antecedents of pronouns.

Since most monumental texts are historic in nature, dates are often emphasized, by placing them at the front of the sentences. This manner of placing emphasis is called "fronting," and is a kind of "foregrounding." bringing to the readers attention some sentence element (as opposed to "backgrounding," decreasing the importance of an element). Techniques for foregrounding used in hieroglyphic texts are (1) elaboration, e.g., adding to a ruler's name a series of titles, a parentage statement, etc. (2) fronting or promotion, as discussed above, and (3) the use of marked syntax, unusual grammar or deleted elements.

Events and the Event Line

An "event," very simply, is an incident in the story, an action, a situation, the presentation and description of a character. Usually these are expressed grammatically using verbs or other predicates. In hieroglyphic inscriptions, these verbs include glyphic expressions for birth, capture, accession to office, acts of holding or displaying ritual objects, making offerings, and the dedication of monuments and buildings.

Even a date can be an event, especially if the date represents the completion of a major time cycle (a Period Ending). A Calendar Round (CR) date can function as the subject of certain verbs, like **ut** "come to pass" (in the AEI or PEI). The combination of a numbered Period Ending and a Calendar round also may form a predicated expression; for example, the text of Tikal Stela 22 begins with the verbal expression of the date: "13 Ahau 18 Cumku was the 17th k'atun" (i.e., the 9.17.0.0.0 Period Ending fell on 3 Ahau 18 Cumku, or "On 13 Ahau 18 Cumku the 17th k'atun ended."). The Initial Series itself is probably a series of events forming the background of the events to be reported in the text.

Distance Numbers may also be expressed as events, as discussed above. The function of the Anterior and Posterior Event Indicators was understood early on, but what has been shown more recently is their role, in discourse terms, to mark background versus foreground events on a narrative event line.

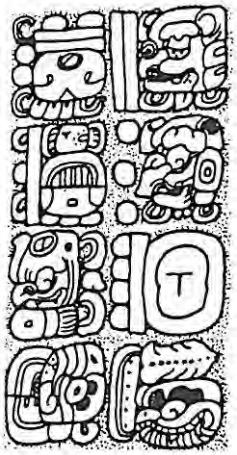
Background and Foreground

The Anterior Event Indicator and the Posterior Event Indicator (AEI and PEI) are inflections of the verb **ut** "to happen, to come to pass," representing the verb phrases **u-ti-y(a)** *ut-i-y* "it had happened" and **i u-ti** *i ut-i* "and then it came to pass" (Fig. II-14). These contrast in two ways; the common tense or aspect inflection on the verbs is the suffix *-i*, marking the events as completed or non-present (completive aspect). The AEI has a further inflection, marking the completed action as prior to another one (about to be mentioned), the suffix **-y(a)**, *-y*. The PEI lacks this suffix, but has a preposed conjunction **i**, read *i*, that we translate "and then" and call the "focus marker." This contrast between the glyphs T126 (**ya**) on the PEI and T679 (**i**) marks the difference between backgrounded information (the former) and foregrounded information (the latter).

If the event verb of the backgrounded event is present (and it is often deleted), then it will also bear the suffix T126. If it is not present, then the event the time is being counted from is usually the last event mentioned. However, the scribes are more inventive than that, and it is not unusual for the event referred to to be an event mentioned much earlier in the text. For this reason it

Fig. II-15. Examples of the Use of the Verb *ut* and the Conjunction *i*.

PAL Cross E10-F13



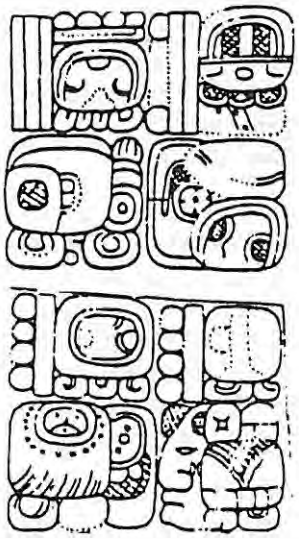
2 days, 12 winals, 10 tuns,

6 k'atuns, and 3 b'ak'tuns

had gone by since 9 Ik

and then was born U Kokan Chan

PNG Stela 1, D2-G2



15 days, 9 winals, and 12 tuns

had gone by (since the last event) and then, it dawned on

9 Chuen 9 Kankin.

Sequestered was Lady Chan Ajaw.

PAL 96 Glyphs E7-H2

u jelaj
Followed in order
(like Venus & the Moon)

5 days, 14 winals,

2 tuns, and 2 k'atuns,

and then it came to be 9 Manik

15 Uo seated as lord
(was K'uk' Balam)

Note that *utiy* "had gone by" is implied
by the suffixation of T126 **ya** to the time periods.

is essential that the chronology of the text be worked out; if the Distance Numbers don't lead to (or from) the right Calendar Round date, something is wrong.

In working out the narrative structure of a text, the backgrounded events must be distinguished from the foregrounded events, because the former are not "on the event line." If the chronology of only those events that are on the event line is considered, then we can understand the narrative structure of the text much better. For instance, a step backwards in time from one event-line event to another signals a break in the text; a new episode is about to begin, and may have a new Topic. But a step back in time from an event-line event to a backgrounded event is insignificant in terms of text structure.

Episodes and Peak Events

Most Classic monumental inscriptions are narrative texts, that is, they tell a story. Maya history is not related as a series of sequential events, but narrated, with all the literary style one might expect from a highly developed civilization. Classic scribes used a variety of devices to make their stories more engaging, and we have learned about many of these by studying the techniques of modern storytellers in the Mayan area; their styles are remarkably similar.

A narrative consists of a series of events. The events are not necessarily related in chronological order, but the time line may go back and forth from later to earlier events and back again. Working out the time line is essential to the understanding a Classic Maya text.

In a long text, there will not only be several events, but some of the events may form paragraph-like sets that we call **episodes.** An episode is composed of a group of events (OK, sometimes only one!) that are tied together by a common time frame within which the events develop, usually sequentially. For any episode, there will be a Topic – a central character or protagonist. This topic should be identified early in the episode, but after that he/she/it may be referred to only by ambiguous pronouns. This presents a problem in "participant tracking," but the rules are straight-forward: if the subject is not specified, it is the same as the topic of the episode. (Warning: For dramatic purposes, the scribe sometimes chooses to suppress the identification of the protagonist until the end of the episode.)

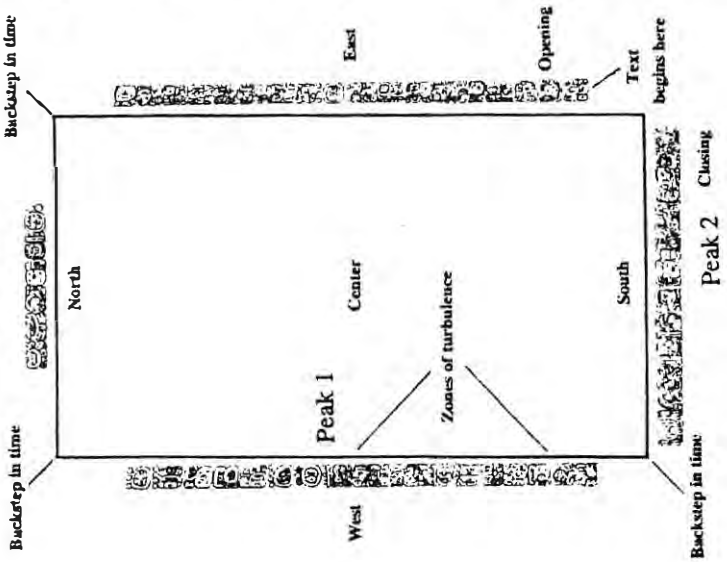
Within an episode, there will be a **peak event**, an event on the event line of the narrative, like the key sentence in a paragraph, the one that tells you what the paragraph is all about. Other events referred to may be background, interesting or necessary additional information that is not on the event line. Among the event-line events in an episode, the peak event should be distinguished by some form of foregrounding – coupleting, elaboration, unusual syntax, etc. Among the various episodes of a text, and usually towards the end of the narration, there will be a **peak episode** containing the most important event in the narration. In hieroglyphic texts, peaks are often preceded by the conjunction *i* "and then..." (Fig. II-15).

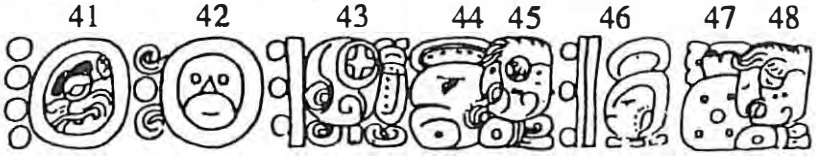
In a sense, all the non-peak events of a text are background to the main event, and they are directly related to that event through a variety of techniques, including temporal connections using Distance Numbers, Calendar Rounds and anniversary expressions, and personal connection via expressions of parentage and ancestry or succession in political rule.

The Zone of Turbulence Surrounding the Peak

It was long recognized by epigraphers that just when a text seemed to be approaching the most important events the text got harder to read. This problem was finally understood only when we brought to the epigraphers' attention some of the observations that had been made from studies of modern storytelling among the Maya and other Mesoamerican peoples. In Mesoamerican

Fig. II-16. Zones of Turbulence Surrounding the Peak

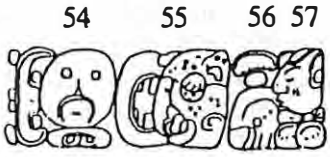




Inserted sentence:
1 Ahau 8 Kayab, tun-seating of Sak K'uk'.

4 Chicchan... ...13 Yax died Sak K'uk'.

West Edge:

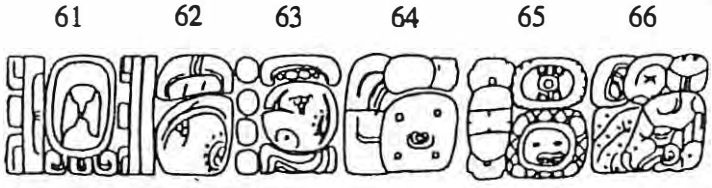


The child of K'an Mo' Hix,
the child of Lady Sak K'uk'

Fronted Parentage Statement; it usually follows the king's name.

South Edge:

on 8 Ahau 13 Pop was born.



On 6 Etz'nab 11 Yax,
4 were his tun-seatings,

and then died K'inich Pakal,
Lord of Lords.

narratives, the linguist Robert Longacre reported, there is a "zone of turbulence surrounding thepeak." That is, at or near the peak event of a narrative, special effects set in. There may be unusual syntax, deletion of seemingly important information, or other deviations from the expected that mark this event as the peak of the narrative.

Two good examples of this zone of turbulence are found on the Sarcophagus Rim inscription from Pakal's tomb at Palenque (Fig. II-16, top). The text reads from the east side of the rim counter-clockwise around the sarcophagus. The first half or more of the inscription (east side, north side, and part of the west side) gives background events, the deaths of a series of Palenque rulers. As we approach the peak event (the death of Pakal), there is first a minor peak, the death of Pakal's mother (who ceded the rule to Pakal) and then the major peak, the death of Pakal.

There are two zones of turbulence. First, two statements about Lady Sak K'uk', Pakal's mother, are intermingled; one is inserted in the middle of the other, making the glyphs impossible to read in sequential order (Fig. II-16, middle). The two sentences are: "[On 9.10.0.0.0] 1 Ahau 8 Kayab [was] her Period Ending" and "[On 9.10.7.13.5] 4 Chicchan 13 Yax died Sak K'uk'." But the order of the glyphs is: "4 Chicchan 1 Ahau 8 Kayab her Period Ending 13 Yax died Sak K'uk'."

Second, the approach of the major peak is signalled by the fronting of Pakal's parentage statement from its normal position after his name to the west edge of the sarcophagus, following his mother's and father's deaths (Fig. II-16, bottom). Until discourse rules were applied to this text, epigraphers tried to connect this parentage statement to Pakal's father, just named. But that meant that K'an Mo' Hix, Pakal's father, was the son of another K'an Mo' Hix and a woman named Lady Sak K'uk', like his wife, and that made no sense at all. The actual peak event, the death of Pakal, is marked by the "focus marker," T769. The last episode of the narrative thus reads "The child of K'an Mo' Hix, the child of Lady Sak K'uk', on 8 Ahau 13 Pop was born. On 6 Edznab 11 Yax, 4 were his Period Endings, and then died Lord Pakal, King of Kings." (Pakal lived through the four Period Endings from 9.9.0.0.0 to 9.12.0.0.0.)

Divisions of the Text

In modern Maya storytelling, new episodes are often introduced by special phrases like "and then," or "so," e.g., Chuj *yuj chi'* "for that reason," Chol *'añ che jiñi*, "and so it was." In the hieroglyphic texts the transition from one episode to the next is most frequently marked by a temporal expression, like a Distance Number to a new date. But there is a variety of devices that can be used. Some texts signal the upcoming peak event by inserting an Initial Series Introductory Glyph and an entire Initial Series with Supplementary Series, in effect beginning the inscription all over again (e.g., Tikal Stela 31, Fig. II-17).

On the Palace Tablet at Palenque (Fig. II-18) two peak events, the accession of K'an Joy Chitam and his last recorded event, the dedication of a structure to house an ancient headdress, marking his return after captivity at Tonina, are introduced by Calendar Rounds followed by Supplementary Series.

Piedras Negras Stela 36 (Fig. II-19) appears at first glance to be a straight-forward text listing sequential events connected by a Distance Number (C3-D3). But it is not at all what it appears. The Distance Number breaks the text; it connects the next event to the final event, forming a section thatis not chronologically connected to the initial segment of the text (A1-D2).

Sometimes the transition to a new episode is marked simply by the introduction of a new Calendar Round, with no Distance Number stated. And there are various ways the Distance Numbers can be phrased, as well: using a DNIG or not, using the suffix **la-ta** on the Distance Number, using phrases like "the next day," and so on.

Fig. II-17. Tikal Stela 31

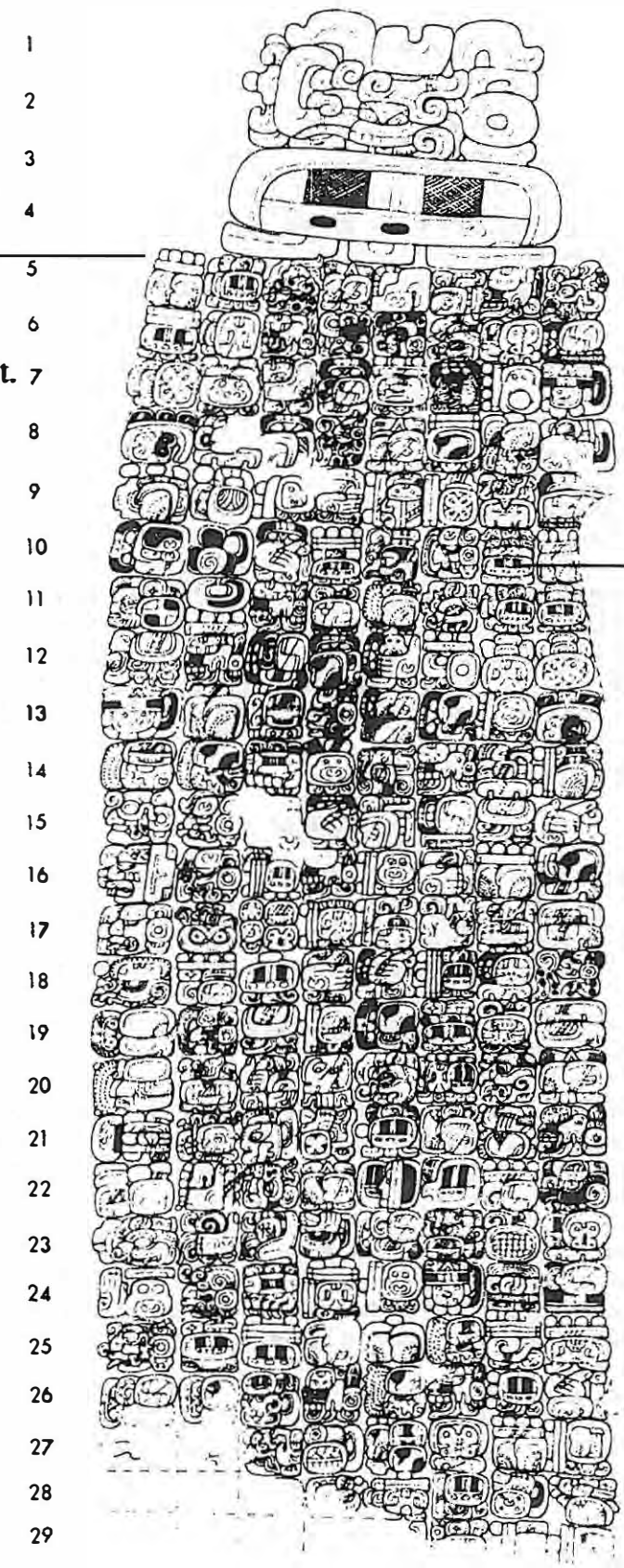


Fig. II-18. Palenque, Palace Tablet

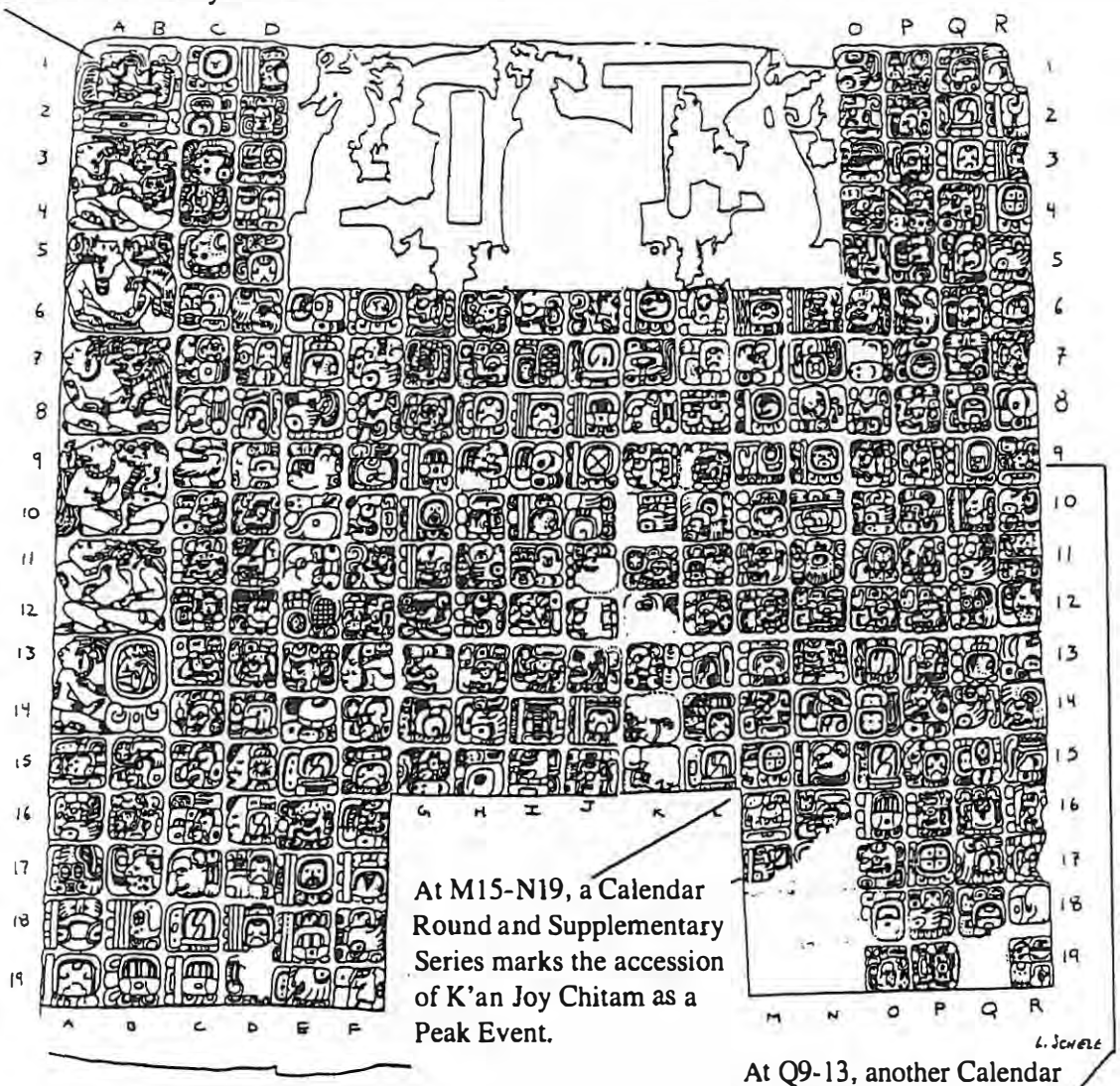
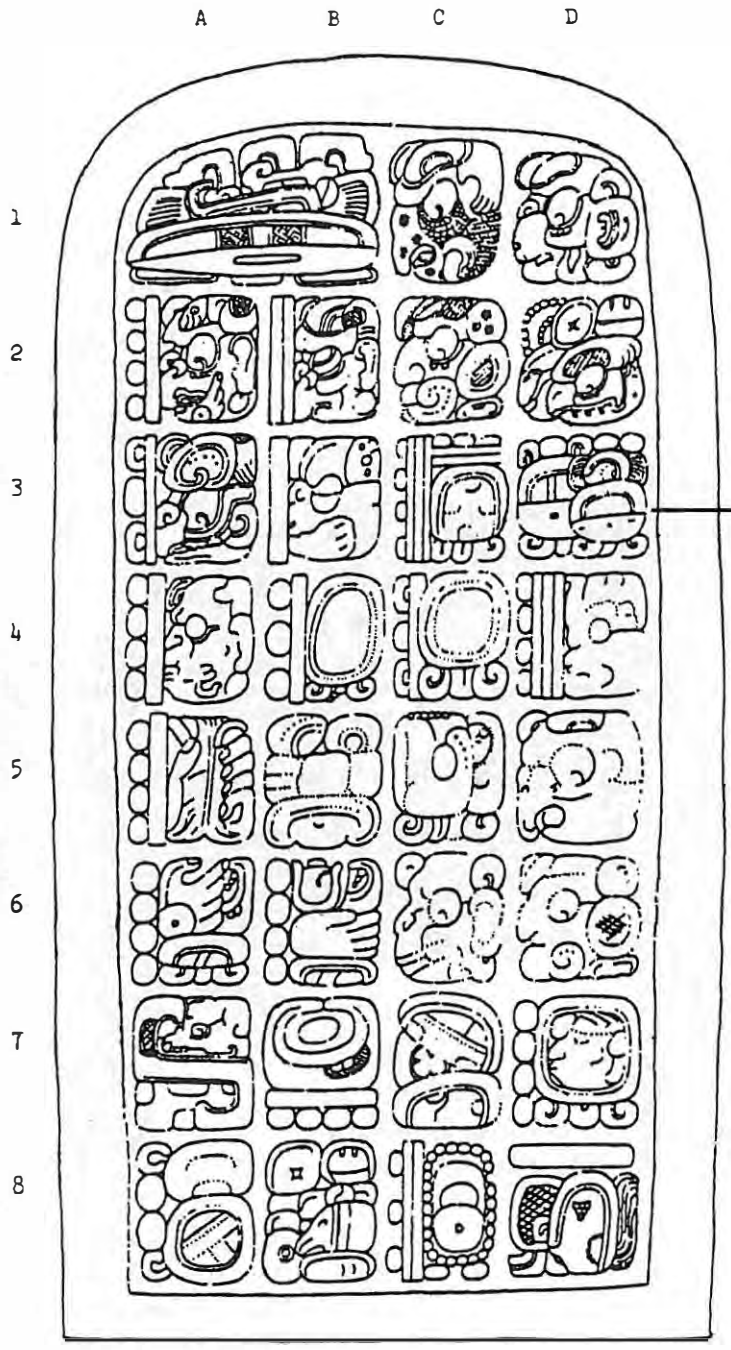


Fig. 19. Piedras Negras Stela 36



The Distance Number does not connect the first event (accession) with the event that follows (birth). Rather, it connects the birth to a Period Ending. The step back to an earlier event, birth, marks a break in the text.

John Montgomery

In the text of the Palace Tablet from Palenque (Fig. II-18), there are five different configurations of Distance Numbers (DNs). The most frequent pattern is typical of Palenque's texts, a Distance Number Introductory Glyph (DNIG) followed by a Distance Number with T126 suffixes, then the Focus Marker-PEI combination, *i uti*, a Calendar Round and an event: "So much time passed, and then it came to be Date X. Event Y happened." But four other patterns occur: (1) DNIG DN *lata*, (2) DN *lata*, (3) DN alone, with T126, and (4) DN-T126 plus the "snake" prefix on the Calendar Round that marks a back reference. This exercise of options probably has a discourse function that we have yet to appreciate.

Understanding the workings of these devices in a text is the key to unravelling the inscription. An essential first step in studying an inscription is to work out its chronology. Every Calendar Round implies an underlying Long Count, and every date in the text must be tied to these time anchors. Within an episode, events are usually related in a continuous, sequentially-ordered time line. But when the time line is interrupted, by backing up in time or by beginning with a new reference point, or even by going forward with no stated connection to the last events, we can consider that a new episode is beginning. A new topic is likely to be introduced, and the syntax and content of the sentences may suddenly change.

These manipulations of the language of the text are not intended to confuse the reader. The purpose of an inscription is to convey information. But information does not have to be presented as a dry list of events. It can be told as an interesting and even engaging story and an illustration of the literary arts of the scribe. The Maya have long been admired for the quality of their architecture, their ceramics, their murals, and other art forms. It is only now that we are beginning to see that the quality of their literature is just as impressive.

The Grammar and Lexicon of the Classic Inscriptions

In order to fully understand an inscription, an acquaintance with the grammar of the Classic language and its vocabulary are obvious assets. There are now a number of introductions to that subject matter available in books and on-line resources. We especially recommend the late John Montgomery's books *How to Read Maya Hieroglyphs* and *Dictionary of Maya Hieroglyphs*, both published by Hippocrene Books, New York. Portions of the latter are also on line at FAMSI's magnificent website (www.famsi.org/mayawriting/dictionary/montgomery/index.html). The FAMSI website also features a very useful study guide by Inga Calvin, a series of lessons that can be downloaded at no cost (www.famsi.org/mayawriting/calvin/). Many other resources are found on the FAMSI site, including Linda Schele's drawings and Justin Kerr's rollout photos of ceramics. FAMSI (the Foundation for the Advancement of Mesoamerican Studies, Inc.) was a major funder of small grants for research in Mesoamerica, and the reports of that research are also available online.

THE COUNTING BOARD

We can simulate the Maya abacus by making a "counting board" that uses drawn boxes instead of shells to create the positions. The board is laid out in boxes that represent the powers of twenty, with the ones at the bottom, and, in our case, the 160,000s (20 x 20 x 20 x 20 x 20, or 20^5) at the top. In order to do addition and subtraction, we lay out a series of columns of boxes, each column or stack representing a different number in our manipulations.

To do addition, there are only two rules to remember: (1) five dots or beads equal one bar, and (2) four bars in one position equals one dot in the next highest position. To do a problem in addition, first think of the number in Maya terms.

Addition. For instance, let's add 873 to 214. Convert 873 to Maya terms: 2 x 400, plus 3 x 20, plus 13. Write that in one of the box stacks: two bars and three dots in the lowest box, three dots in the second box, and two dots in the third box.

Now convert 214: 10 x 20, plus 14. Write that in the second column or stack of boxes: two bars and four dots in the bottom box, two bars in the next highest box.

To add the two numbers, simply push all the bars and dots from one column into the corresponding boxes of the other column. Now you will have four bars and seven dots in the bottom box, two bars and three dots in the second box, and two dots in the top box. Now apply the rules. (1) Five dots makes a bar; the bottom box now should have five bars and two dots. (2) Four bars in one position is equal to one dot in the next highest position. Four of the five bars in the bottom box are removed, and another dot is placed in the next highest box. Now you have:

2 dots in the highest box:	2 x 400	cha' b'ajk'
2 bars and 4 dots in the next box:	14 x 20	chan-lajun k'al
1 bar and 2 dots in the lowest box:	7 x 1	huk.

Or, 800 + 280 + 7 = 1087 (= 873 + 214). Wasn't that fun??!! The key is to think of, and write, the numbers in Maya terms rather than European ones. After all, it's a Maya number system!

Subtraction. Now let's reverse the process. Let's subtract 214 from 1087 (to make it easy). Take from the column with 1087 written in it enough bars and dots to make 214, and put them in the other column. That is, remove 200 (2 bars) from the second level, and 14 (2 bars and four dots) from the bottom level. What's left in the original column is the "remainder," the number we started with, 873. For some operations, if there is not enough in the position you have to take from, you will need to "borrow," e.g., convert a dot in the 20s position to 4 bars in the ones position.

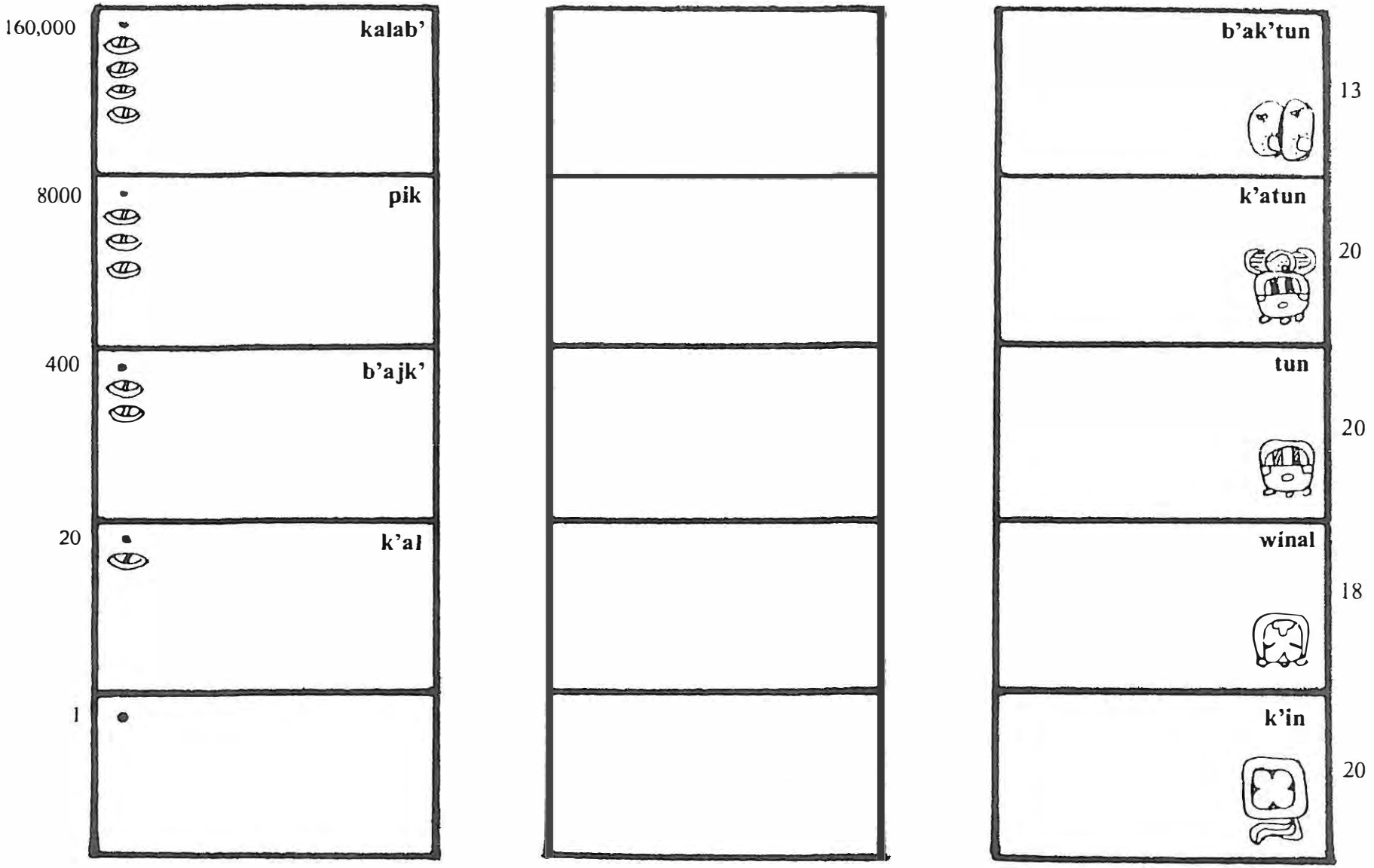


Fig. II-20. A Maya Counting Board

PART III:

HIEROGLYPHIC GRAMMAR AND LEXICON

A brief introduction to Classic Maya writing is no place to get into a detailed discussion of all the current issues involving the grammar and lexicon of the inscriptions. Nonetheless, a beginner needs at least some acquaintance with the most common words and phrases. What follows is an attempt to provide useful information, with the caveat that there is not presently complete agreement among epigraphers and linguists about just how to treat the hieroglyphs.

Put simply, there are (1) honest differences of opinion about how to interpret glyphic spellings, especially in final syllables. Some epigraphers (like us) argue that the vowels in final syllable signs should be read, at least in some contexts; they may mark suffixed verbal conjugations, for instance. Others (Houston, Stuart) argue that final vowels should not be read, but final disharmonic vowels signal complexities in the preceding root nucleus – long vowels instead of short, internal glottal stops or other complications. These differences of opinion result in: (2) Depending on how you read the spellings, you transcribe the words differently. Then (3) the distinct forms of transcribed words lead to different grammatical analyses, and (4) Different grammatical analyses lead to distinct views on the rules of text composition and discourse phenomena. Linguists develop an independent view of all these phenomena by comparing and contrasting modern languages and applying well developed techniques of reconstructing earlier stages of language. As a result of these various viewpoints, the details of analysis of hieroglyphic inscriptions will be distinct in the works of almost any two authors, and there is currently no way to determine who holds the high ground..

The good news is that no matter how you read the glyphs, there is widespread agreement on their general meaning, and there is little argument about the content of most inscriptions. Obviously if we had perfect knowledge of the Classic written language we could produce more reliable interpretations. As things stand, we can at least function as well as we can when dealing with speakers of a language that we do not dominate but have only a working knowledge of. We more or less get the meaning of what is being said, and with enough external clues about the possibilities we can guess what is meant. What follows is *our* best guess, influenced by many years of work with modern Mayan languages as linguists as well as considerable time studying Classic texts, about how the inscriptions are to be interpreted. Not everyone would agree.

A Brief Outline of Grammar

In all Mayan languages, the verb and its companions constitute the central part of grammar. Nouns and pronouns are reasonably simple, adjectives present no difficulties, other parts of speech are minimal in number, but verbs are complicated. However, in the hieroglyphic inscriptions, the verbal complexity we see in the modern spoken languages is greatly reduced (although some epigraphic linguists would argue that the grammar is not as reduced as we take it to be!). In any case, verbs are a logical place to begin a discussion of epigraphic grammar, because they are – for the most part – easy to identify and essential to understand. Since normal word order is Verb-Object-Subject (VOS), verbs tend to occur at the beginning of sentences. In historical texts, where the temporal information is often fronted to the beginning of the sentence, the old workshop adage: "What comes after the date? A verb!" is a good rule of thumb.

Verbs

What greatly reduces the complexity of epigraphic verbs is the fact that most texts are written in the completive aspect (what amounts to the past tense), and most verbs take third-person subjects and objects (in Mayan languages, the same form for he, she, it; him, her, it). There are

Fig. III-1. The Pronoun **u-** and Some of its Variants.

John Montgomery (2002:132)

David Stuart (1987:47)

Eric Thompson (1962:445)

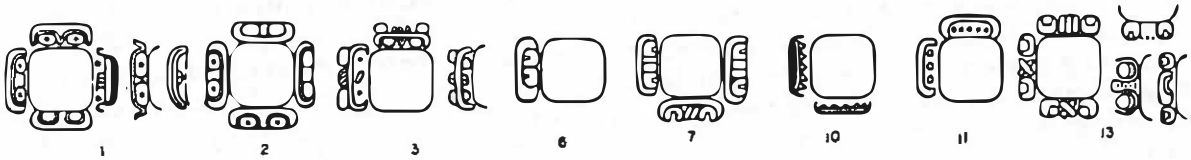
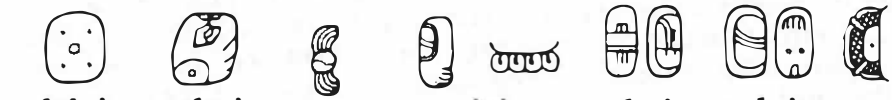


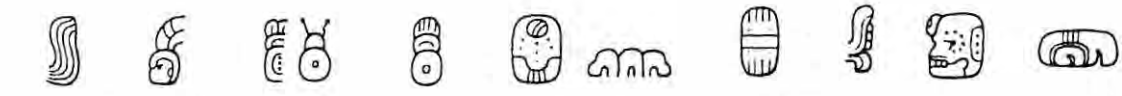
Fig. III-2. Aspect Markers on Three Verb Classes.

Common Verb Endings (Montgomery 2002:149)

VTR	VIN	VPO	
u-...-w(a)	...y-i	-wa-n(i)	-la-j(a)

Other VIN Endings





exceptions to these rules, but they are found mostly on ceramics, and beginners can get by without knowing anything about them. What is needed, then, is to know what verbs look like in the completive aspect with third-person subject and objects. The first complication is that there are three classes of verbs in the Classic language (as there are in modern Chol and many other Mayan languages): transitive, intransitive, and positional verbs (VTR, VIN, VPO). Transitive verbs are the ones that can take an object, i.e., they represent actions that can "fall on" something – hit, see, think, etc. These verbs are the only verbs that can take both a subject and an object. Intransitive and positional verbs take only subjects. Intransitive verbs are those that have only an actor – walk, talk, live, etc. (In English, of course, the corresponding verbs can take objects: walk the walk, talk trash, live life, etc.; English is peculiar that way...) Positional verbs relate to being in positions and states, and generally take the place of adjectives in English – to be standing, to be bent over, to be soft and mushy.

Subject and Object Markers

The first simplification is that third-person objects and many third-person subjects are "zero" suffixes (**-ø**), that is, they are unmarked. (Linguists like to treat these empty positions as if there were something in them for reasons of symmetry; first- and second-person suffixes have substance.) Intransitive and positional verbs take zero subjects. The only subject marking that will occur in most texts is that of subject of transitive verb. That reduces the problem of identifying the subjects and object marking on verb to a simple problem: What does the third-person subject marker on transitive verbs in the completive aspect look like? The answer is *u-*, written with some variant of the syllable signs read **u**.

The Pronoun **u-**: He, She, It and More!

The next complication is that there are myriad ways to write **u**, and *y-* substitutes for *u-* before vowels (Fig. III-1). As we will see below, *u-~y-* is also the third person possessive prefix on nouns (his, her, its), so it is extremely common. It is no accident that the most common form of **u** is Thompson's (1962) glyph number 1, T1 (and some of its variants are T2, 3, 6, 7,10, and 13). The syllable-sign chart in John Montgomery's (2002) book shows nine variants of the syllable **u**, and there are still more.There are also several variants of the *y-* prefix, because it is written in combination with the following vowel, so it shows up as the syllable signs **ya**, **ye**, **yi**, **yo**, and **yu**.

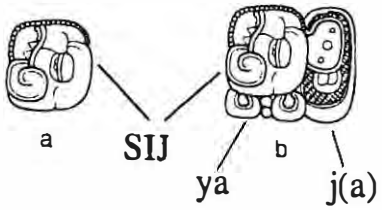
Aspect Markers

Aspect is something like tense, but it is less tied to time and more concerned with manner. Completive aspect refers to things that are finished, completed, which implies past time. Incompletive aspect, however, refers to things ongoing, and could be placed in the past, in the present, or in the future. For practical purposes, we can think about completive aspect as being the same as past tense (but for other purposes, we talk about aspects). The three classes of verbs take distinct suffixes to mark their status as completive or incompletive (Fig. III-2). Completive transitive verbs often take no distinctive suffix, but if they do it is written **-wa**, although it probably isn't read that way (nobody said this stuff was easy). Completive positional verbs end in *-laj* or *-wan*, written **-la-ja** or **-wa-ni**. Completive intransitive verbs end in *-i*, but since this suffix is usually written combined with the last consonant of the verb, it turns up in **b'i**, **ji**, **ki**, **li**, **mi**, **ni**, and so on. Since it has so many forms, and final vowels are often ignored by epigraphers, this suffix is the last to be generally recognized (and is not in fact recognized by some).

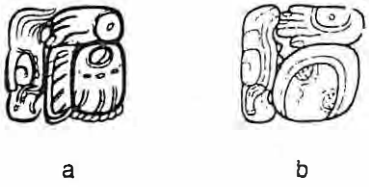
The common conjugations of verbs in the Classic script, then, are **u-...-(-wa)** for transitive verbs, **-la-j(a)** or **-wa-n(i)** for positional verbs, and **-Ci** for intransitive verbs. Actually, the latter three forms have unseen subject marking, *-laj-ø* and *wan-ø*, e.g., CHUM**-la-j(a)**, *chum-laj-ø*, CHUM**-wa-n(i)**, *chum-wan-ø* "he is seated," and *-i-ø*, e.g., CHAM**-mi**, *cham-i-ø* "he died."

Fig. III-3. "Birth" Glyphs.

"Birth" Glyphs (Montgomery 2002:162-163)



Thompson's "upended frog," T 740
SIJ-ya-j(a), *siyaj* "was born"

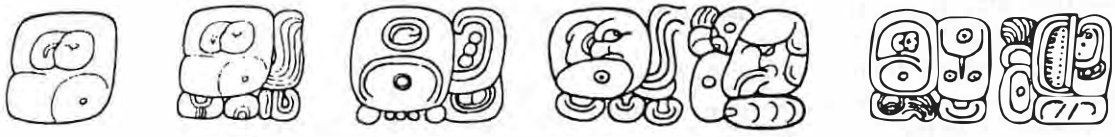


u TAL ka-b(a), *u tal kab'*
"touched the earth"

Fig. III-4. "Accession" Glyphs.

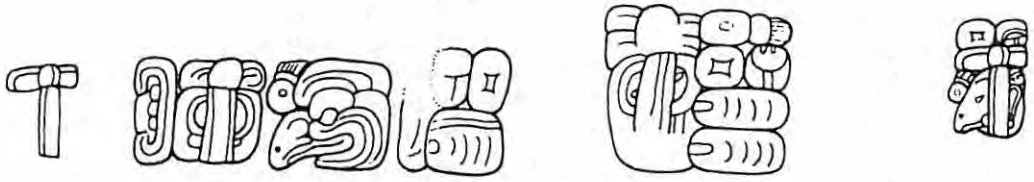
"Accession" Glyphs (Montgomery 2002:165-170)

VPO: **CHUM-** "to be seated (as X)"



CHUM-(mu) CHUM-wa-n(i) CHUM-la-j(a) chumwan ti ajaw le chumlaj ti kajal

VTR: **JOY-** "to tie (on the headband)



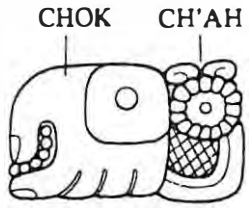
JOY JOY-aj ti ajaw le joyaj ti ajaw lel joyaj ti ajaw

VTR: **K'AL- / CH'AM-** "to hold the headband (or sacred object)"

CH'AM hun CH'AM sak hun CH'AM sak hun-n(a) CH'AM hun-n(a) CH'AM sak hun

Fig. III-5. "Scattering" Glyphs.

La Pasadita, Lintel 2 (Linda Schele)



"throw incense"

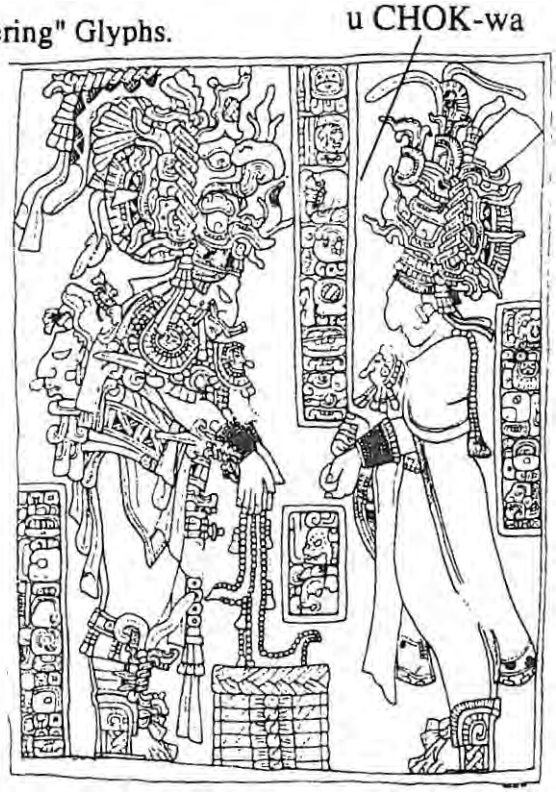
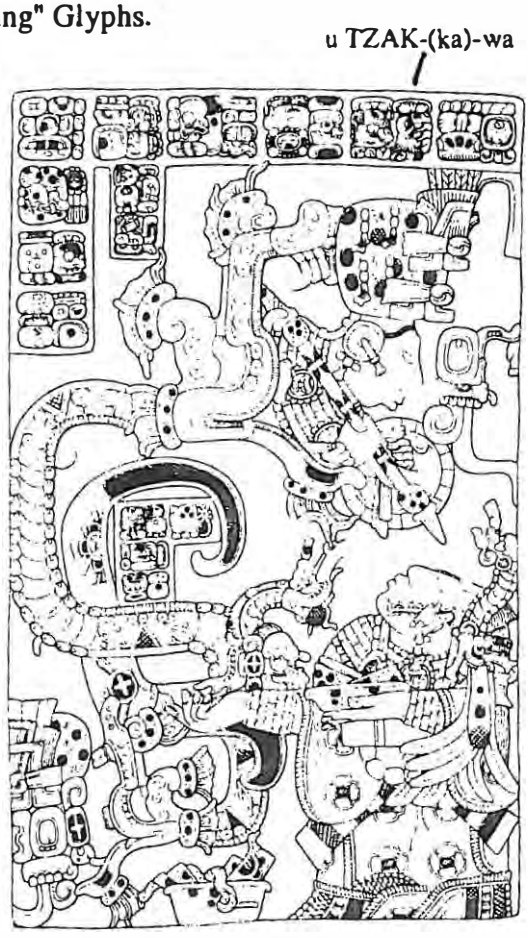


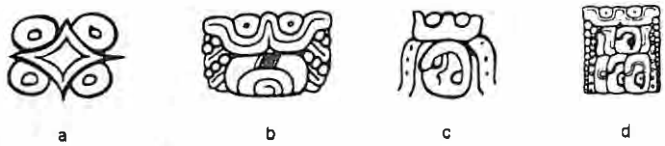
Fig. III-6. "Conjuring" Glyphs.

"conjure"

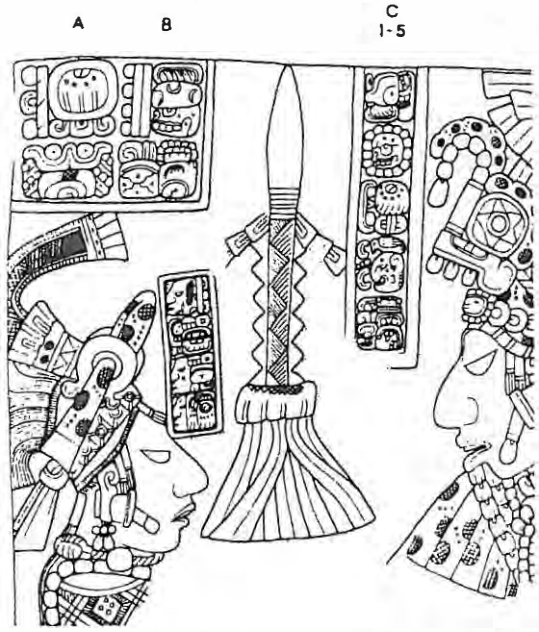


Yaxchilan, Lintel 25 (Ian Graham)

Fig. III-7. "Warfare" Glyphs.



Yaxchilan, Lintel 41



A1-B2 On 7 Imix 14 Zec, war on [Place Name]
C1-5 Chukaj (was captured) Jewel Skull.
U bak (He is the prisoner of) Bird Jaguar,
the captor of Aj Uk.

Aguateca, Stela 2

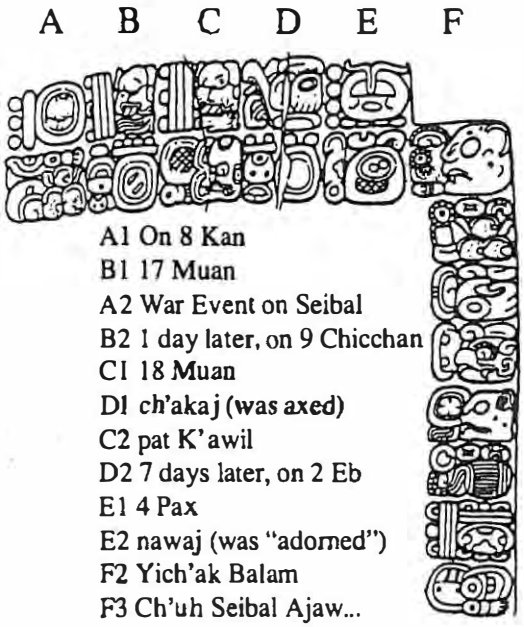
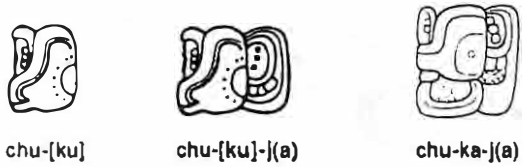
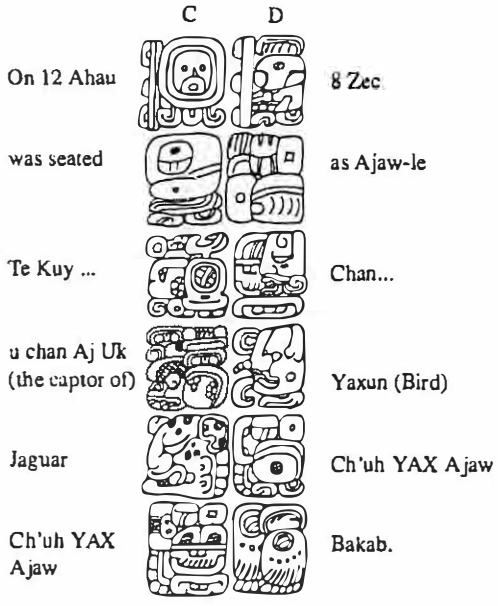


Fig. III-8. "Capture" Glyphs.



chuk-aj-ø "was captured"

Yaxchilan, Stela 12



Some Common Verbs

This is not the place to try to give a complete inventory of epigraphic verbs (see John Montgomery's book for a much longer list), but listing a few may be in order. A lot of verbs have to do with the life cycle of the elite, from birth to death, and all the major activities in between. **Birth**. There are two major variants of the "birth" verbs. The one first deciphered was Thompson's "upended frog" glyph, identified by Proskouriakoff as referring to birth. A lot of paper has been expended trying to explain all the possible metaphors that might relate an upended frog or toad to the concept of birth – none of them particularly convincing! However, the meaning is clear, and since the suffix **ya** is frequently written, epigraphers have settled on the reading *siyah*, attested in Yucatec Maya names and titles, e.g., *siyah ka'an* "heaven born."

The other "birth" expression is more transparent, a hand touching earth, the compound being conjugated as a transitive verb expression, thus, literally, "he touched the earth." This is supported by the Chol expression *k'el pañimil* "to see the world" as a metaphor for birth. It is also possible that the touching hand is to be taken as a rebus for "arrive," the Chol terms *tyäl* "touch with the hand" and *tyal* "arrive" being historically related.

Accession to Office. During his (or her) life, many of the activities recorded for Classic elite involve being inducted into ritual office, including supreme rule. The metaphor for most of these is "to be seated" in office, expressed as a positional verb, i.e., "to take a sitting position," not for someone to put you in office. The logographic glyph showing a truncated torso in a seated position is marked as a human body part (the circle within a circle) and sometimes carries phonetic helpers (e.g., **mu**); the reading is taken to be the positional verb *chum* "to be seated." Positional verb affixes are common, CHUM-**la**-**j**(**a**) or CHUM-**wa**-**n**(**i**). In fact, this is almost the only positional verb you will see. The verb is usually followed by a statement of the office: *ta ajawlel* "in kingship" or some such.

Another metaphor for taking office is "tying on the headband." Epigraphers generally read the verb as **joy**, but Chol *joy* means "to surround something" or "to wind around something (or somewhere)." Another verb used for ceremonial induction is the "holding" of some ritual object. The act of holding is indicated by a "flat hand," a hand stretched out horizontally, with something being held or supported by the hand. The object may be a mirror, an *ajaw* head, or a combination taken to represent a headband (symbol of rulership), marked with the color "white." This phrase is often followed by **tu b'ah**, interpreted as "to himself," so that the whole is read "he took the [object] to himself." A hand holding a deer hoof is also recorded (called, reasonably enough, the "deer hoof event"). Many epigraphers consider the verb to be **k'al**, but this verb usually means "to bundle things," "to tie things together" (as in **k'al-tun**, a bundle of years). The act of holding might be read **ch'am** (cf. Chol *ch'äm* "to take, grasp").

Offerings and Blood Sacrifice. One of the ritual functions of the rulers and other elite was the feeding of the gods, a contractual relationship of exchange (I give to you, you give back to me). The most common activity is "scattering," the burning of numerous small balls of incense. The ruler is shown dribbling incense into a sacrificial vessel (hence the nickname "scattering"); this act is sometimes spelled out **cho-k**(**o**), the transitive verb *chok* now meaning "throw" in Chol. The substance offered is often specified, usually **ch'ah** "incense" (not "blood" as was thought a few years ago).

There is blood offering, however; males are seen drawing blood from the penis, females from the tongue. This act of bloodletting can lead to the conjuring of ancestors, as in the famous lintels of Yaxchilan (L 24-25). The transitive verb in the description of these scenes is called "fish-in-hand" and has been given a reading of **tzak**, i.e., **tza-k**(**a**), where the fish stands for **ka**.

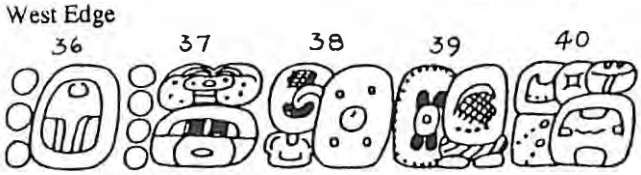
Fig. III-9. "Death" and "Burial" Glyphs.

ne-b'i
neb'-i-ø
"he died"

CHAM-mi
cham-i-ø
"he died"

CH'UY-yi u-[pus]-ik'-al
ch'uy-i-ø u-pusik'al
"flew away his spirit"

Palenque, Sarcophagus Rim



3 Chuen 4 Uayeb neb'i Janab' Pakal, Ch'uh Bak Ajaw
On 3 Chuen 4 Uayeb died Janab' Pakal, Holy Palenque Lord.

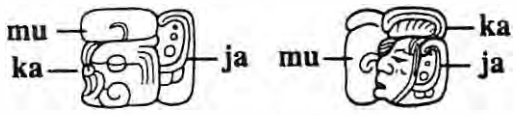
Emiliano Zapata Panel, A3-C1

0 k'in, 13 winal, 7 tun, 3 k'atun siyajiy, i chami (KB) 7 Cimi 3 Pop.
It was 3.7.13.0 after the birth (of Kan Balam), then he died on 7 Cimi 3 Pop.

Yaxchilan, Stela 12, A1-A4

6 Ix 12 Yaxkin ch'uyi u pusik'al ch'ahom ho'k'atun ajaw Itzamna Balam.
On 6 Ix 12 Yaxkin flew away the spirit of Sacrificer 5-K'atun Lord Itzamna Balam.

"Burial" Expressions



mu-ka-j(a), *muk-aj-ø*, "he was buried"

Warfare and the Capture of Prisoners. There is a glyph that reports attacks on a site or something similar. It generally has three elements: the "star" or Venus sign above, lines of droplets on the sides, and a central element that can be either a shell (**yi**), "earth" (Caban), or the name of a specific site, e.g., Seibal. Readings vary; we favor **ek'-i X** "he went out (against) X," reading the star as *ek'* as a rebus for *ek'* "to leave," the shell as the suffix *-i*, and noting the use of such phrases in Colonial Chontal documents (like the old English term "sally forth" from French "to go out, leave").

One of the purposes of raids seems to have been the acquisition of prominent prisoners, because the capture of such is widely recorded. The verb "to capture" is rendered CHUK-**ka-j(a)**, the passive form of a transitive verb, "to be captured." The verb is followed by the name of the person captured. The prisoner is referred to as **u b'ak** "the prisoner of" the person whose namefollows. At Yaxchilan and some other sites, it appears to have been the custom that the heir to the throne was expected to engage in raids and take a prominent prisoner; he then took "the captor of So-and-so" as a title, **u chan X**. The Yaxchilan ruler Bird Jaguar takes the title **Aj Jun K'al B'ak**, "he of twenty prisoners." Similar titles are known from elsewhere (with lower numbers!).

Death. The last thing to happen to anybody is their death. Three common expressions have been deciphered, but not all deciphered to everyone's satisfaction. We will, of course, present our own interpretations as being correct! The first is a quincunx (circle with four dots spaced around a central dot) with a prefixed serpent's tail with adornment. Since the quincunx is in Landa's "alphabet" as the syllable *bi*, David Stuart has read this as **och b'ih** "to enter the road," positing a metaphorical posthumous route taken by the departed soul (the verb "enter" presumably deriving from the snake entering the **b'i** glyph). We see this as problematic in the lack of affixation on the putative "enter" verb and the otherwise unattested use of a tail as either *och* or "enter." On the other hand, our proposal, to read the tail as *ne* ("tail") and the whole as *neb'i* "to die," the intransitive verb *neb'* with completive suffix *-i*, has a little support in the Chol term *ñejp'-añ* "to grow old." Go figure. More transparently, the verb *cham* "to die" is also common, e.g., **CHAM-mi,** "he died."

A third expression for "to die" also has various interpretations. The complex collocation features a wing over the **yi** shell and a possessed AJAW head with decorations, and an IK' glyph suffixed with **li**. Our interpretation is that the wing represents "to fly," an intransitive verb (suffixed by *-yi*, read *ch'uy-i*) and a phrase meaning "his soul," perhaps related to Chol *pusik'al* "heart."

Burial. There are a few recorded burials, the verb being spelled out **mu-ka-j(a)**, *muk-aj-ø* "he was buried," the passive form of a transitive verb.

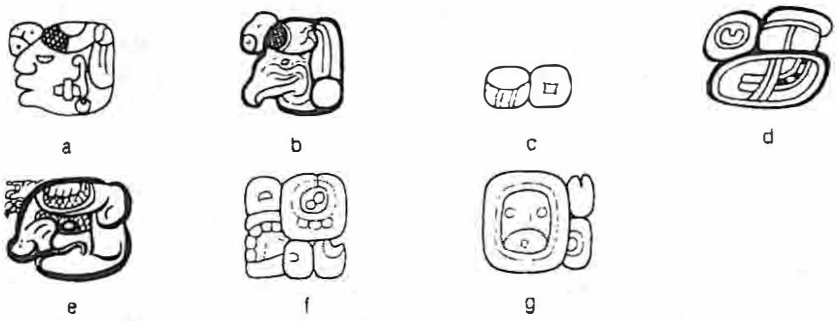
Other Verbs

There are several verbs that do not take human subjects. Time periods, for instance, "end," represented by a flat-hand with beads dangling from its tips, still unread. Buildings "are dedicated," sometimes with a verb that may be read **payi** (featuring the head of the old god with a net [*pa*] head). The symbols of military might, the **tok'-pakal** "flint and shield," can "fall" **jub'i,** when a site is conquered. The "writing" of a site, presumably its inscriptions, can "be axed," **ch'a-ka-j(a) u tz'i-ba-l(i)**, "was axed its writing." (People can also be **ch'akaj,** interpreted as decapitation.)

Non-verbal Predicates

There are two non-verbal things that can stand in the position of verbs. The two kinds are the Predicate Nominative (where a noun stands in for the verb) and the Predicate Adjective (where an adjective plays the role of verb). In English, the corresponding sentences would use the verb "is", as in "John is a man, John is tall." Mayan languages, like a lot of languages in the world, can do without the "to be" verb, and put the noun or adjective in the Verb position, before the subject: Chol

Fig. III-10. "Lord" and "Lady" Glyphs.



Variants of *ajaw* 'lord': a,b,e, with headband; c,d, with "ah po" prefix; f, spelled **aj-ja-wa**; g, logographic AHAU with **wa** suffix.

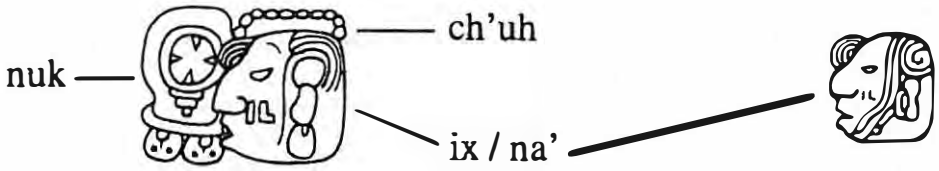
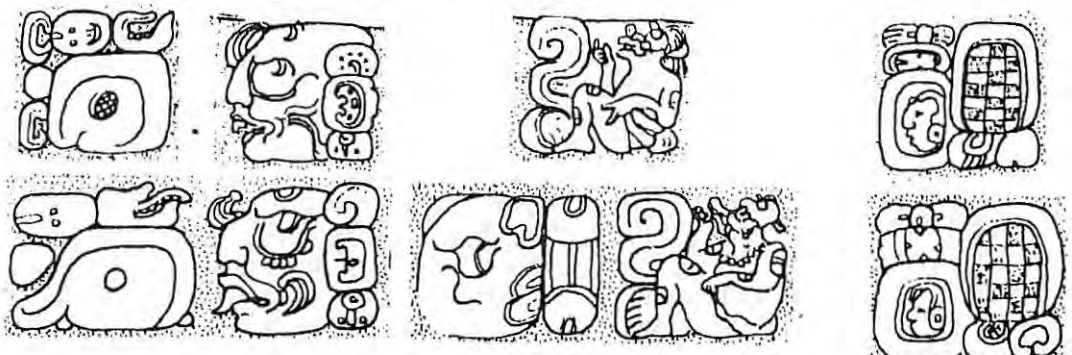


Fig. III-11. Deity Names.

The Palenque Triad: GI, GII, GIII



Variants of God K (K'awil) at Quiriguá (Matthew Looper)

winik Xun "(is a) man John," *chan Xun*, "(is) tall John." There is no aspect marked on these constructions, and as far as subject marking is concemed, they are marked like intransitive verbs, that is, there is no visible marking. Now, let's go to the simple: Nouns.

Nouns

Nouns are "the name of a person, place, or thing." Grammatically, Maya nouns are fairly inert. About all you can do to them is possess them; plurals are optional and rare. Possession is indicated by a prefixed **u-**, one of the most common hieroglyphs and among the earliest to be deciphered (Thompson's Gyph number 1, T1). Being so common explains the myriad variants of this affix; scribes apparently hated to write the same glyph over and over. Examples include the ordinal numbers of k'atuns, discussed above: **u-15-K'ATUN**, "the fifteenth k'atun." Prefixed to nouns that begin with a vowel (or a glottal stop), the possessive prefix takes the shape **y-**; see below, under **ajaw**. Possession also turns up in parentage statements, below.

Nouns are usually written with logographic glyphs; personal names are more likely to be spelled out than other nouns since there may not be any object that could be used to represent them graphically. In some cases we have both a logographic and a phonetic spelling of a name, notably in the case of Pakal of Palenque. His name (or the principal part of his name)is often spelled out **pa-ka-l(a)**, and the corresponding logograph represents a shield, **PAKAL**.

Names and titles (names of offices held) are among the most common nouns, and paradoxically they are the nouns we have most trouble reading. Modem Maya don't continue to use the same sorts of names, and the Classic offices have long since disappeared, so we get little help from the modem languages. As a result, many of the names of royals that we use are really nicknames, based on the graphic quality of the glyphs used to represent their names. Some epigraphers try to go beyond nicknames and establish phonetic representations of the names in the absence of glyphic spellings, but we have little confidence that the names they confect would be the ones the Classic Maya would have used. In any case, a compilation of most of the elite Maya names, organized by site and site history, can be found in Martin and Grube's (2000) *Chronicle of the Maya Kings and Queens*.

Lord and **Lady** titles often precede the names of Classic personages. The male title is usually *Aj-*, written **aj** or **ja** prefixed to some other element, a name or further title. In modem languages, this prefixed element is common in titles of craftsmen, civil and religious officials, etc. The common female title *Ix* is represented by the head of the young maize god, now read **ix** (cf. *ixim*, "maize"); this is a common prefix to modem female names.

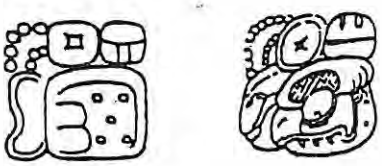
Some of the civil and religious offices held by Classic Maya elite are well understood, others remain a mystery. The most frequent title, also the best understood, is the title taken by kings, **ch'uh X ajaw**, "Holy Lord of X," the supreme ruler of a kingdom or polity. The hieroglyphs were first deciphered by Heinrich Berlin, a German scholar living in Guatemala; he designated these title "emblem glyphs," because while he could establish the fact that each variant was associated with a particular site, he couldn't determine if the glyph referred to the place, to a royal family, orto a civic office. We still use that terminology, although we are now sure that the title refers to the office of ruler.

Emblem Glyphs. An Emblem Glyph has three parts, "holy," "place or polity," and "lord." The first element, **CH'UH**, usually placed to the left side as a prefix, has a string or scattering of dots descending from a variable element that may be a Spondylus shell, a **YAX** or **K'AN** sign, or an inverted **AJAW**. Just what these variables mean is not known. An altemate reading for **CH'UH** (based on Yucatec Maya, not Chol) is **K'UH**.

Fig. III-12. Emblem Glyphs

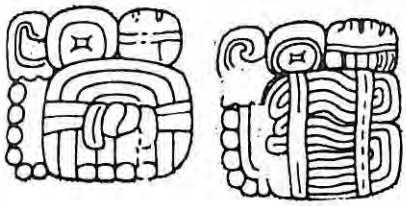
Palenque

Yaxchilán



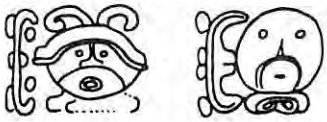
Piedras Negras

Copán



Tikal

Fig. III-13. Relationship Terms.



T 3. (122):535

u-? 'child of father'

T 126:178(=534):670:? T 126.19:670:? T 126.584:670:140

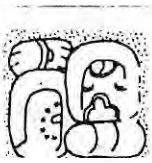
y-al 'child of mother'

T 1. I:606.23 T 3. I:606:23 T 11. I:606:Lady Zac Kuk

u- huntan 'cherished one (child)'

yune 'child of'

'mother of'



suk winik
'elder brother'

itz' winik
'younger brother'

The second part, representing the polity ruled, caries from site to site, and even within a site there may be several variants. Palenque, for instance, has both a stylized bone and a bird head. Tikal has what appears to be a tied bundle, arguably the back of a king's head with the knot of a headband. Yaxchilan has two emblem glyphs that are often used together, one a "split sky" glyph, the other a jade celt. Copan's emblem glyph features a bat head marked as stone. Seibal has three stones with flames, apparently a hearth. And so on. Needless to say, most of these do not correspond to the modern names of these sites, since those are largely the invention of modern archaeologists and explorers.

The third part of an emblem glyph is the part that reads **ajaw** "lord." This typically spans the site glyph, part on top and part on the bottom, as if the site glyph were superimposed on the glyph for lord. Above there are two round glyphs, one resembling a cushion (with an indentation in the middle -- and these actually do appear being sat on in scenes), the other more or less looking like a throne (with a horizontal bar and legs). Whatever. Below is a phonetic glyph reading **wa**, the last syllable sign in what is sometimes spelled out **a-ja-w(a)**. We know that the reading order of these elements is as stated because on one Yaxchilan monument the combination is broken out into three glyph blocks: CH'UH, YAXCHILAN, AJAW.

Ajaw "lord" also occurs outside the Emblem Glyphs, in logographic form, as the head of a young male (sometimes marked as Hunajpu, with a dot on his cheek), or, for that matter, the head of almost anything with a headband on it, e.g., a vulture. A frequent suffix is the glyph **le**, sometimes doubled to **le-le**; this may be a nominal suffix **-lel** (i.e., AJAW-lel "kingship") or the noun *le*, literally a "rope," but a metaphor for "lineage" (i.e., *ajaw le* "lineage lord"). The former is the usual interpretation. **Ajaw** also occurs in possessed form, as a title of a subordinate lord, *y-ajaw* **NAME**, i.e., "one of the lords of So-and-so." This may also occur with a little understood suffix, e.g., at Palenque (96 Glyphs), **y-ajaw** TE'.

Other common titles include offices subordinate to the paramount ruler, probably regional or provincial chieftains. Two common tiles are *b'akab'*, **ba-ka-b(a)**, "ruler," a title also taken by kings, and *kahal*, **ka-ha-l(a)**, "(village) chieftain." The latter is usually read *sahal*, **sa-ha-l(a)**, but we find little support in the languages for such a reading. Females, supposedly the wives of the office holders, can also take these titles: *Ix Bakab, Ix Kahal.* Another such title is represented by the head of Chak, holding an axe, with a suffixed glyph TE', often read CHAK TE or IX CHAK TE'. Another title is *aj pitzlaw*, ***aj pi-tzi-la-w(a),*** "ballplayer."

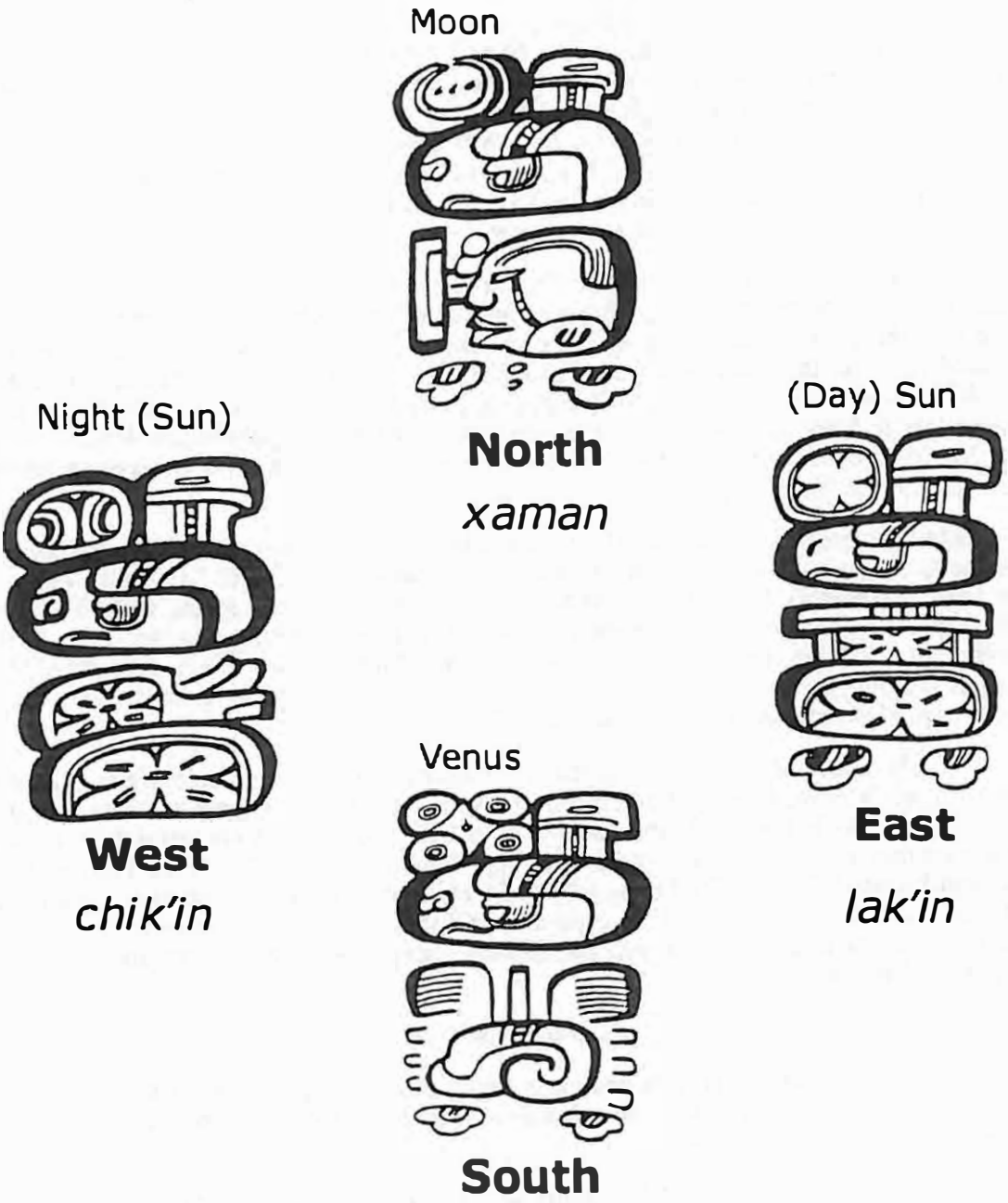
Gods. Many deities are mentioned in the inscriptions. Some of them we can identify, others' identities are lost in antiquity. Collectively they are sometimes referred to just as **ch'uh** or **k'uh** "holy (ones)." At Palenque there is a triad of patron gods and an ancestral deity as well. They feature prominently in the mythological history of the site (especially on the Tablets of the Cross, Sun, and Foliated Cross). The Palenque Triad were first just given numbers to identify them, GI, GII, and GIII. Now it is generally accepted that GI is Chak, the rain god/earth lord; GII is K'awil, who becomes the patron of royal rule (kings hold a scepter with his image), and GIII is the Jaguar God of the Underworld.

Relationship Glyphs

There is a class of glyphs known as "relationship glyphs" that express various kinds of connections between people. One prominent set consists of kinship terms; others express political relationships like subordination.

Kinship terms. The most frequently seen kin terms are those that constitute the "parentage statement," the identification of a ruler's mother and father. But the terms "mother" and "father" are not used here. Rather, the child is identified as the "child of female X," the "child of male Y."

Fig. III-14. Terms for Directions.



Traditional Maya kinship terms use different terms for "child" depending on the sex of the parent. This is a logical (and widely attested) feature for patrilineal kinship systems, in which the child of a male is of his own lineage or clan, but the child of a female is not of her kin group (but belongs to her husband's line); the child-parent relationship simply isn't the same in both cases.

The mother is often identified first, and a common expression is the possessed noun **y-al** "the child of female" followed by the name and titles of the mother. Thus, "Bird Jaguar [is] **yal** (the child of) Lady Ik' Skull." Three common variants of this phrase feature a hand holding either a speech scroll (*al* "to speak"), an upside down **ajaw** head (the syllable **la**) and the glyphs T126 and Ben (unknown reading). There is an identified glyph for "mother of," but no accepted reading (T126 and a bat's head).

The father's name is frequently preceded by a glyph still unread to everyone's satisfaction: an AJAW head "decorated" with scrolls at the top. This was read **nik** "flower" for a while, but this reading seems to have lost favor. We favor the reading **ajaw**, since there is a widespread Mesoamerican pattern in which the terms "lord" and "child" are identical (e.g., Nahuatl *pilli*, Mixtec *iya*).

Two other expressions may be connected to either parent. One is a term borrowed into Western Mayan languages from Mije-Soke, **une(n)**. It occurs in possessed form as **yu-ne**, the syllable sign **yu** and a tail, **ne**. The other is spelled out **u 1 ta-na**, and is interpreted as **u juntan** "the cherished one of (someone)." This term may not be strictly kinship, since is also connects rulers to gods.

There are terms for siblings as well. In Palenque a pair of brothers are referred to as **su-k(u) winik** and **i-tz'(i) winik**, related to the modern terms (Yucatec) *suku'un*, Chol metathesized *äskuñ*, "older brother," and *'itz'in* "younger brother." A term for "mother's brother," **ichan**, also occurs as **yi-cha-n(i)**. A less well understood term, **yi-ta-j(i)**, *y-ita*, appears to be a sibling term related to Chol *ijtyañ* "sister," perhaps not strictly "female sibling," but "clan sister, woman of my lineage."

Political Relationships. Two common terms express political subordination. Many acts of lesser rulers are described as taking place **u kaj** "under the authority of" someone else. (This is commonly read **u KAB'-ji**, which seems unnecessary, since Caban, the **kab'** in question, can be read as **ka**). Subordinate lords are sometimes identified as **yajaw** So-and-so, "a lord of So-and-so," that is, the *underlord* of So-and-so.

Accompaniment or Companionship. A couple of terms are understood just to refer to common or joint action by two or more people. One is **yi-chi-NAL**, *y-ichnal*, between two names. The other is **ye-e-te'**, *yete*, probably related to terms like Yucatec *yet-meyah* "companion."

Adjectives

The most common adjectives in the inscriptions are colors and directions. Mayan languages have five basic color terms, "red, white, black, yellow, and blue/green," and these are associated with the directions "east, north, west, south, and center."

Directions

The directions are not cardinal directions (focussed on a single point); that is, "east" is not just due east. Rather, "east" is a whole quadrant, the eastern horizon from the summer solstice point to the winter solstice point. "West" is the corresponding quadrant from where the sun sets in the summer to where it sets in the winter. "North" and "south" are just the areas in between, and for that

matter, it is hard to find terms for these "directions" in Mayan languages. They are mostly just ignored. Some languages call them "to the right" or "left" of the sun's path, but there is no consistent pattern, some languages calling north "to the right," some calling it "to the left." In Chol dictionaries, the term glossed "*norte*" is the word for a winter storm, not a term for the direction: *chäk 'ik'lel*, "big wind."

The Classic terms for the directions are *lak'in*, **la-K'IN** "east," *xaman*, **xa-ma-n(a)** "north,"*chik'in* **chi-K'IN** "west," and a term that is harder to interpret for "south." The latter is perhaps somehow related to the Yucatec Maya term *nohol*, since *noh* is "big," and the Classic glyph has the superfix **ma**, *ma* also meaning "big."

An Aside: A Bit of Epigraphic History

"East" and "west" as written in the Classic – **lak'in** and **chik'in** – are ancient terms that have been worn down to near-unrecognizable forms. The original terms (our hypothesis, supported by comparative evidence) refer to the places where "the Sun exits (his house)" and where "the Sun enters (his house)," the house being the Underworld, where the Sun spends the night. We worked these terms out with Terry Kaufman in the 1980s when he was going through our data from Chol and Chuj for the Etymological Dictionary. The Chuj (from Nick's 1960s field notes) was the clue; the terms there are *tz'el k'uh* "the Sun exits" and *tz'och k'uh* "the Sun enters," based on the verbs *'el* and *'och*. That gave us the *l* and *ch* of **la-k'in** and **chi-k'in**. Terry remembered the Tzeltal terms *el-ab'* and *och-ib'* for 'exit place' and 'entrance place', the first being the "patio in front of a house" and the second a "doorway." That gave us the vowels *a* and *i*. So we reconstructed **el-ab' k'in* and **och-ib' k'in* as the original terms. The processes by which the original terms were reduced over time were (1) reduction of the consonant clusters *-b'k'-* to just *k'* (giving **ela k'in, *ochi k'in*) and (2) the loss of the unstressed initial vowels *e* and *o*, leaving *lak'in* and *chik'in*. Jealous glyphers heard about this without getting the details straight, decided to beat us to the punch, and started to read the directions as *el k'in* and *och k'in*, terms which are bogus, not grounded in evidence. The directional terms are never written ***el k'in** and ***och k'in**, but are most often written with a mixture of phonetic and logographic signs as **la-K'IN** and **chi-K'IN**.

Color Terms

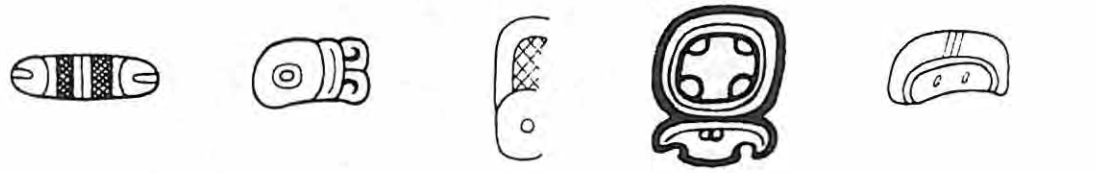
The color terms, all written with logographic glyphs, are *chak* "red," *sak* "white," *ek'* "black," *k'an* "yellow," and *yax* "blue/green." These correspond closely to the terms in modern languages, where there are lots of other color terms derived from these, but these are what are called the Basic Color Terms, the major divisions of the color spectrum. The "blue/green" term spans both the referents, from sky color to leaf color.

These are used as adjectives in Classic texts to somehow aggrandize the modified noun, usually a title. They all apparently have metaphorical meanings. "Red" seems just to mean "great," but "white" may have a sense of "resplendent" or "brilliant, shining." "Yellow" implies "precious," as does "blue/green," which also has connotations of "young, virile, emergent." "Black" is often glossed as the direction "west." Note that black, blue/green, white, and red prefixes are the distinguishing elements of four successive month names, Ch'en ("cave"), Yax, Sak, and Ceh (the latter probably related to the "red" terms in Tzeltalan, *tzah*).

There are also directional associations of the five color terms. The basic referent is the Sun and its movements. East is associated with red, the color of the sunrise. North is associated with white, the briliance of the sun at its zenith; in the tropics, the summer solstice sun passes far to the north. West is associated with black, the darkness of sunset. South is yellow, perhaps because it is the opposite of zenith, nadir, and conceptually related to the Sun's passage through the Underworld at night. In Maya iconography, underworld creatures are often oozing pus and other distasteful

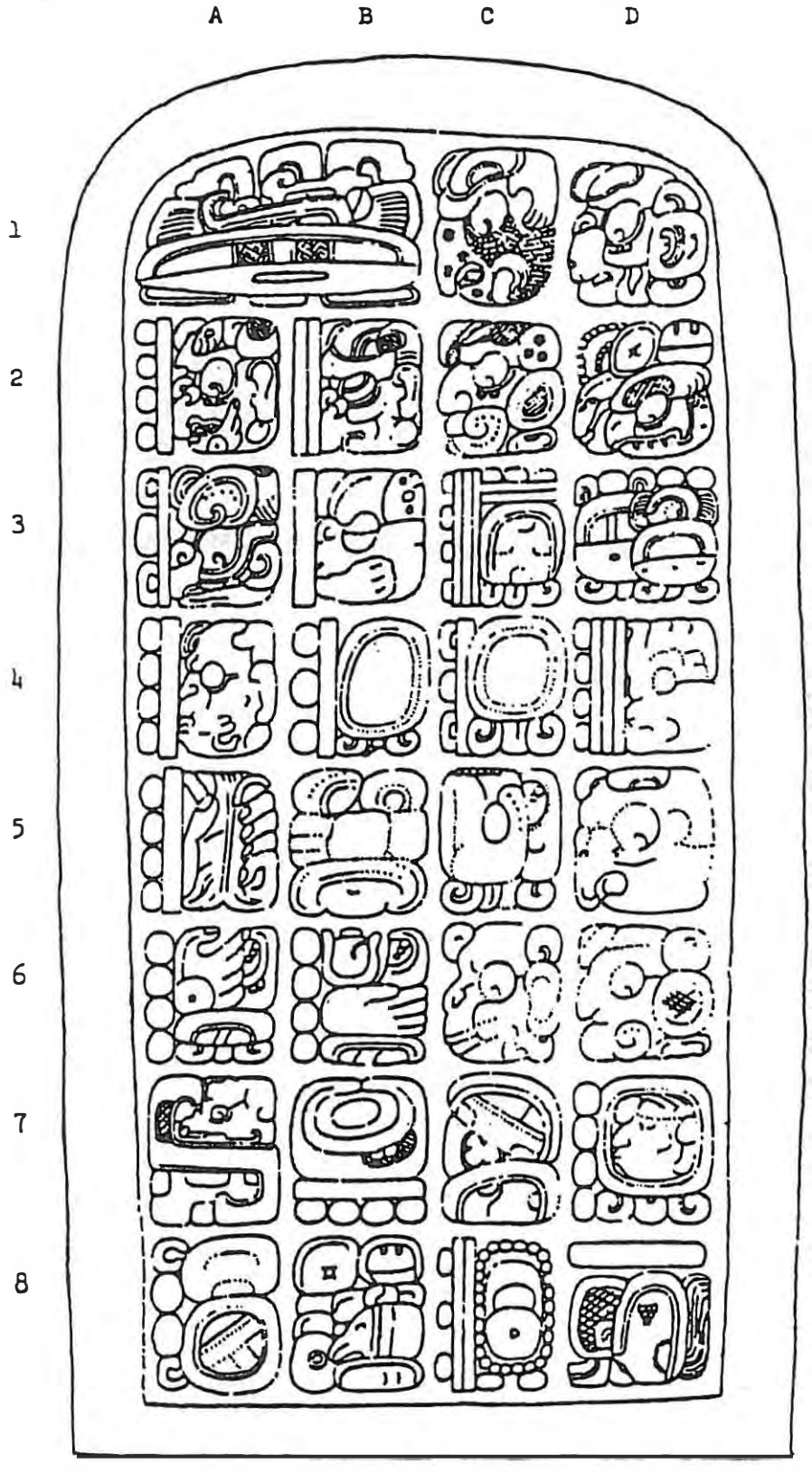
liquids. Finally, blue/green is associated with the world center, the place where humans live. These color associations are used in modern ceremonial activity, where altars are laid out with respect to the four directions, each marked with its typical color of candles. The center is sometimes marked by a combination of blue and green candles, green for the earth's surface, blue for the sky, giving the layout a third dimension.

Fig. III-15. Color Terms.



red white black yellow blue/green

IV-1. Piedras Negras Stela 36



John Montgomery

PART IV:

HOW TO APPROACH A HIEROGLYPHIC INSCRIPTION

Over the years we have developed an "algorithm," a set of steps to take when you look at an inscription for the first time. It turns out to be very difficult just to read your way through a new inscription glyph by glyph. We find it works much better to back off, survey the territory, and establish some landmarks before attempting to enter the new terrain.

The basic principle of this technique is to move from the easily known to the unknown. That is, without trying to understand the inscription at first, you move through it and identify the things that are easiest to identify, and mark them. The easiest place to start is the chronological framework of the inscription, first the Initial Series and the Calendar Rounds (you need to recognize only the day and month names and the numbers), then the Distance Numbers that connect them. Having these landmarks that divide the text into smaller units, you then proceed to look for other categories of information (verbs, names, titles, and other things fairly easy to recognize). Finally, you clean up the messy stuff that is left, if you can. Work out the chronology--find the Long Count dates for all the Calendar Rounds and make sure you know how the Distance Numbers connect them. Now, and only now, you can go back and read your way through the inscription and begin to appreciate the art of the scribes.

The Color Conventions

A key part of this technique is the use of colored pencils to mark categories of information. The glyphs can either be lightly colored in or simply outlined in color, but doing one or the other will make the text ever so much easier to navigate. Colored pencils are preferred to marker pens and other media because they do not obscure the underlying glyphs (and they can be erased!). This is not an extensive set of conventions but is limited to a small set of colors and categories:

Calendar Rounds:	Yellow
Inital Series, Distance Numbers:	Orange
Verbs:	Green
Names and Titles:	Royal Purple (lightly applied) or Blank

Beyond that, for purposes of discourse analysis we also mark a couple of function glyphs: Blue for Background (T126), Red for Focus (T679). It really isn't necessary to mark all the glyphs in a text; what you want to do is establish a framework of known glyphs as landmarks.

The Algorithm

(1) Make a copy of the inscription that leaves the glyphs large enough to see clearly, a copy that you won't mind messing up. Shoot, make several of them! Leave one copy intact, for reference. Cut another copy into double columns, paste each double column in the middle of a sheet of paper, and rule off lines on either side for note-taking (again, make a master and work on copies of it).

(2) Just to warm up, work on the Initial Series and the Supplementary Series. Since this is relatively known territory, you don't even have to color here. Just write in the values in the side boxes formed by the lines.

(3) Now go through the text glyph by glyph, but don't try to read anything. OK, you can read if you want to, but don't get distracted. Your goal is to find and mark all the Calendar Rounds in the text. Color them yellow.

(4) Go back over the text and mark all the Distance Numbers that connect the Calendar Rounds. Color them orange. Write their values in the spaces for notes For good measure, now that you are a little acquainted with the text, look for other chronological markers like Period Endings, and color them. The goal is to get all the "merely" chronological stuff out of the way. Of course chronology isn't ever "mere," and sooner or later you'll have to work out the chronology. But make that "later." Sit back and have another cup of coffee...

(5) Now sit back and admire what you have just done. The text is now segmented into smaller pieces, the stretches of text between Calendar Rounds. (This is the transformation that old time glyphers call turning a plate full of spaghetti into doggie biscuits, changing an amorphous mass into discrete pieces.)

(6) Next big step: What comes after a date? A verb. Look at the glyphs that follow the Calendar Rounds and see if they don't have the trappings of verbs. Check your inventory of common verbs, and look for the common verb endings. Color them green ("green for go," "verde para verbo").

(7) What comes after a verb ought to be a name, and that is usually followed by titles. The Emblem Glyph is especially easy to spot, so look for EGs; they will be at the end of long name-title phrases.

(8) If you still have long strings of unidentified glyphs between the verbs and the next chronological break, look for Relationship Glyphs. You might have a Parentage Statement, for instance.

(9) By now the text should have been reduced to a handfull of knotty problems. You may not in fact be able to solve all of them. In some inscriptions, nobody can. So don't feel bad about it.

(10) Time to do the math. Now work out the chronology and assign Long Count dates to all of the Calendar Rounds. Look for breaks in the chronology (where the next date doesn't follow the last one in chronological order). These mark major divisions of the text. Within each division there should be a common Topic, and the sentences will probably have parallel structures.

(11) You can now move to the next stage, a Structural Analysis. This consists of cutting up the glyph columns and arranging the glyph strings in horizontal lines. Usually, each line will begin with a Calendar Round, or with a Distance Number and Calendar Round. The purpose of this exercise is to look across the lines for parallel constructions. You may want to use a clean copy for this layout.

(12) Get a glass of wine, sit back, and admire the skill of the scribe in the manipulation of the text for dramatic purposes. Heck, admire your own skill for having gotten to this point! Look back at the original drawing to see if there are any interesting plays of text against image.

So there you are, a twelve-step program! Enjoy!!

A Sample Inscription

To illustrate the methodology just presented, let's take a sample inscription. One we have always found interesting is Piedras Negras Stela 36. This is a stela with no image, all text. It's one of five stelae (Stelae 32-37) that were lined up in front of a building on the west side of the South Group Court, the area of oldest occupation in Piedras Negras, and it features the king known as Ruler 2. The text appears at first glance to be straight-forward, an Initial Series date and event, a Distance Number to another Calendar Round, and so on. But appearances can be deceiving, and this text is a good lesson in the tactics of reading a monumental inscription.

(1) Cut the drawing into two double columns (A-B and C-D), and paste each on a page, drawing lines at the sides to write notes on.

(2) There is an ISIG, so there is an Initial Series, so go ahead and work it. It clearly states 9 b'ak'tuns, 10 k'atuns, 6 tuns, 5 winals, and 9 k'ins: 9.10.6.5.9. This is not a Period Ending, so the event is probably historical. The day number is 8, but the day name (in the cartouche) is eroded. However, we can reconstruct it by referring to the last digit of the Long Count. That coefficient was 9, so this is the 9th day after Ahau: Muluc, so B4 is 8 Muluc.

The glyph at B5 is recognizable as Glyph F, so A5 is the Lord of the Night. A6-B7 is a Lunar Series: A6, the moon is 4 days old; B6, it is the 4th lunation; A7, this is the name of the moon; B7, this lunation is counted as 29 days long. The next glyph, A8, is a number and month name: 2 Uo. So this is 9.10.6.5.9, 8 Muluc 2 Uo.

(3) Now scan the text looking for more Calendar Rounds, using the cartouches as your guide. There is a CR at C4-D4, and another at D7-C8: 6 Something 19 Zotz', and 4 Ahau 13 Mol.

(4) Now look for the Distance Numbers. The only one is C3-D3, and it is (reversing the order to put the numbers in the sequence of the Long Count) 2 k'atuns, 1 tun, 13 winals, 19 k'in: 2.1.13.19.

The text ends with 4 Ahau 13 Mol and something else at D8. Texts often end with Period Endings. Look on your chart of Period Endings and you will see 9.11.15.0.0, the only PE that has this Calendar Round. In fact, the glyph at D8 is called "five tuns lacking," meaning it refers to a Period Ending of the form x.x.15.0.0. So the text begins at 9.10.6.5.9 8 Muluc 2 Uo, and ends at 9.11.15.0.0 4 Ahau 13 Mol.

(5) Now we have three text segments. First, A1-D2; then, C3-D7 (or maybe C7). We just have to figure out what the events are and who they pertain to. There are three dates, and the last one pertains to the Period Ending, so we only have to figure out the first two.

(6) What comes afer a date? A verb. So B8 ought to be a verb, and C5 ought to be a verb. You should be able to recognize C5 as Thompson's "up-ended frog," identified by Proskouriakoff as a birth verb. B8 is harder, but this is a Piedras Negras specialty, the glyph that Thompson called the "toothache" glyph. Proskouriakoff identified it as accession to office.

It is a very compacted glyph block. The central element is the head with the "toothache" bandage around a vulture's head. To the left is a partly eroded **ti**, above the vulture head are the two balls of **ajaw**, and below the syllable sign **le**. The wrap around the vulture head is a reference to tying on the headband of a king, so the whole thing, unpacked, reads "he took the headband of rulership." So, we have an accession date, a birth date, and a Period Ending.

(7) What follows a verb ought to be a name-and-title string. The first string would be C1-D2. Notice that D2 is an Emblem Glyph, the EG of Piedras Negras. That makes it very likely that everthing else is a name string, maybe a name and another title. The second string is D5-D6 or C7. Note that glyphs C1-C2 are the same as glyphs D5-D6. This is the name pbrase of the protagonist, Ruler 2.

(8-9) What is left is the resolution of C7. It's not an Emblem Glyph, so it probably doesn't go with the name phrase. This is another Piedras Negras specialty. It shows the sun (in the middle) peeking out from between the sky (on top) and the earth (on the bottom), and it almost has to mean something like "dawn." Piedras Negras uses this glyph where other sites would say "and then, it came to be (such-and-such a date)." So it introduces the Period Ending; effectively. it's the verb for the last sentence: It dawned on 4 Ahau 13 Mol, the 15-tun Period Ending."

We also have to reconstruct the date at C4-D4.

(10) Time to do the math. We have three dates and one Distance Number. One of the dates (C4-D4) is partly eroded, so we also have to figure out what it is. What does the Distance Number connect? Let's just make some quick checks. The Distance Number ends in 19 k'in, 19 days. If it goes from the Initial Series date that ends in 9, then the resulting day would be a day number 28-20 = 8, or a day named Lamat. Lamat can't fall on the 19th of a month, so C4 can't be Lamat.

If the DN connects the eroded date at C4-D4 to the PE 9.11.15.0.0, then subtracting the DN 2.1.13.19 from the PE we get 9.9.13.4.1, which would be a day named Imix, and Imix can fall on the 19th of a month. (A computer check tells us that the LC is 6 Imix 19 Zotz'; computers are good for something!) So, the DN at C3-D3 connects the CR at C4-D4 to the Period Ending at D7-C8.

We could have saved ourselves all that by knowing a little grammar. The use of T126 ("loop-drip-loop") tells you which way to count from a Distance Number. The time period glyphs at C3-D3 all have T126 suffixed to their bottoms. The next event glyph also has T126 on its bottom. This tells us the DN is to be counted from that date.

(11) We can now do a structural analysis, or just construct the text. We have two sentences:

(a) On... 8 Muluc 2 Uo, acceded to office Ruler 2 of Piedras Negras.

(b) It was 2.1.13.19 from the birth of Ruler 2 to the Period Ending 4 Ahau 13 Mol.

Putting the dates in chronological order, the chronology is:

9.9.13.4.1, 6 Imix 19 Zotz', Ruler 2 was born

9.10.6.5.9, 8 Muluc 2 Uo, Ruler 2 took office.

9.11.15.0.0, it was the Period Ending 9.11.15.0.0, 4 Ahau 13 Mol.

The scribe didn't tell us this, but we can now calculate that Ruler 2 was only 13 when he acceded to office (13.1.8, to be exact)! By the time this stela rolled around, he was about 42 (2.1.13.19).

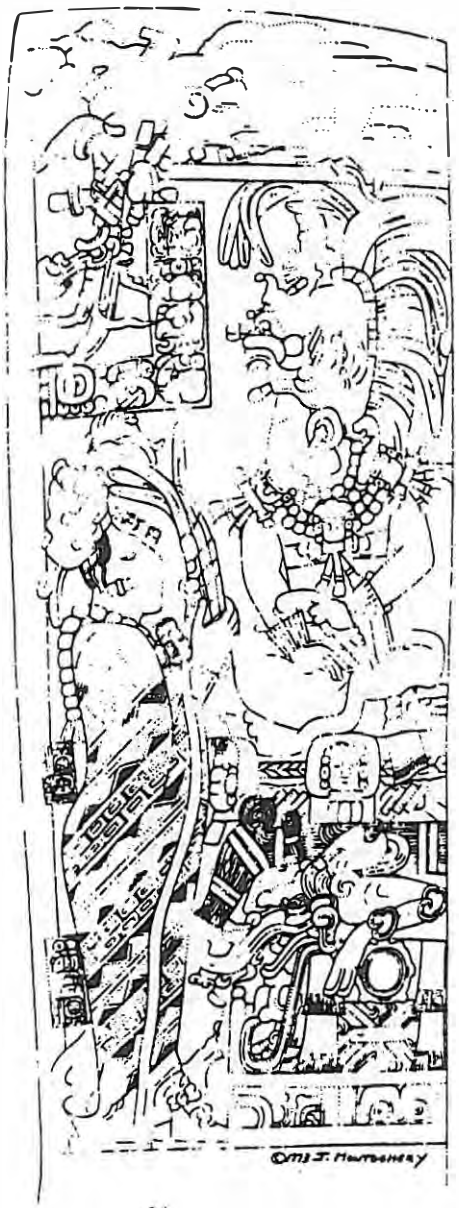
(12) Now admire the text. The Background (A-B) faces the Foreground (C-D), with the accession glyph at B8 the tuming point. Those compressed glyphs at B8 allow the scribe to place the ruler's name in the "hot corner," the upper right-hand corner, the most prominent spot on a monument (as it is on a newspaper front page).

If we consult Proskouriakoff's list of monuments and dates, we find that Ruler 2 has the following monuments:

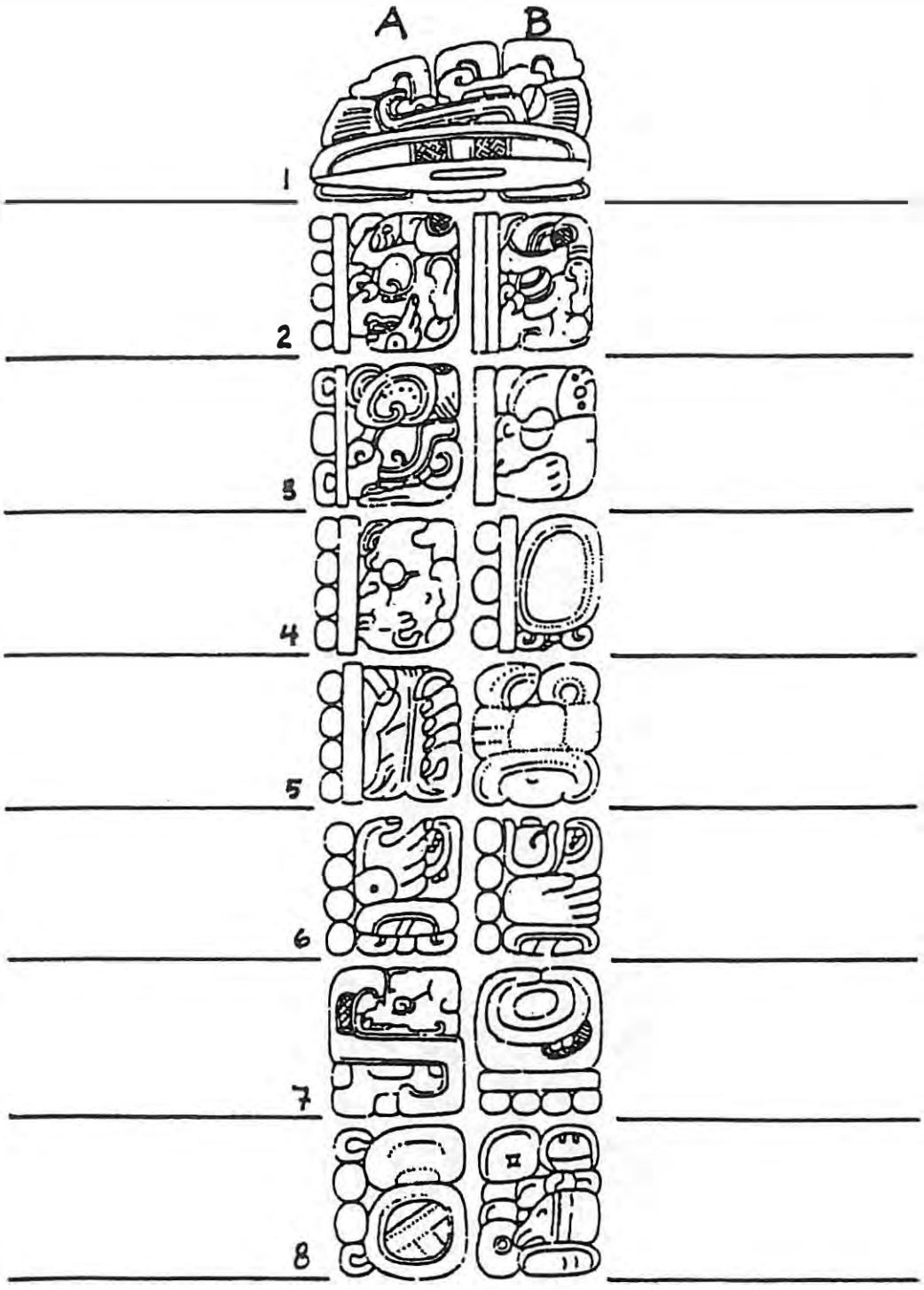
Stela 33. 9.10.10.0.0, the first PE after accession on 9.10.6.5.9, therefore his "niche" stela.
Stela 32. 9.10.15.0.0, the next Period Ending.
Stela 34. 9.11.0.0.0.
Stela 46. 9.11.5.0.0.
Stela 35. 9.11.10.0.0.
Stela 36. 9.11.15.0.0, this stela.
Stela 37. 9.12.0.0.0. His last stela.

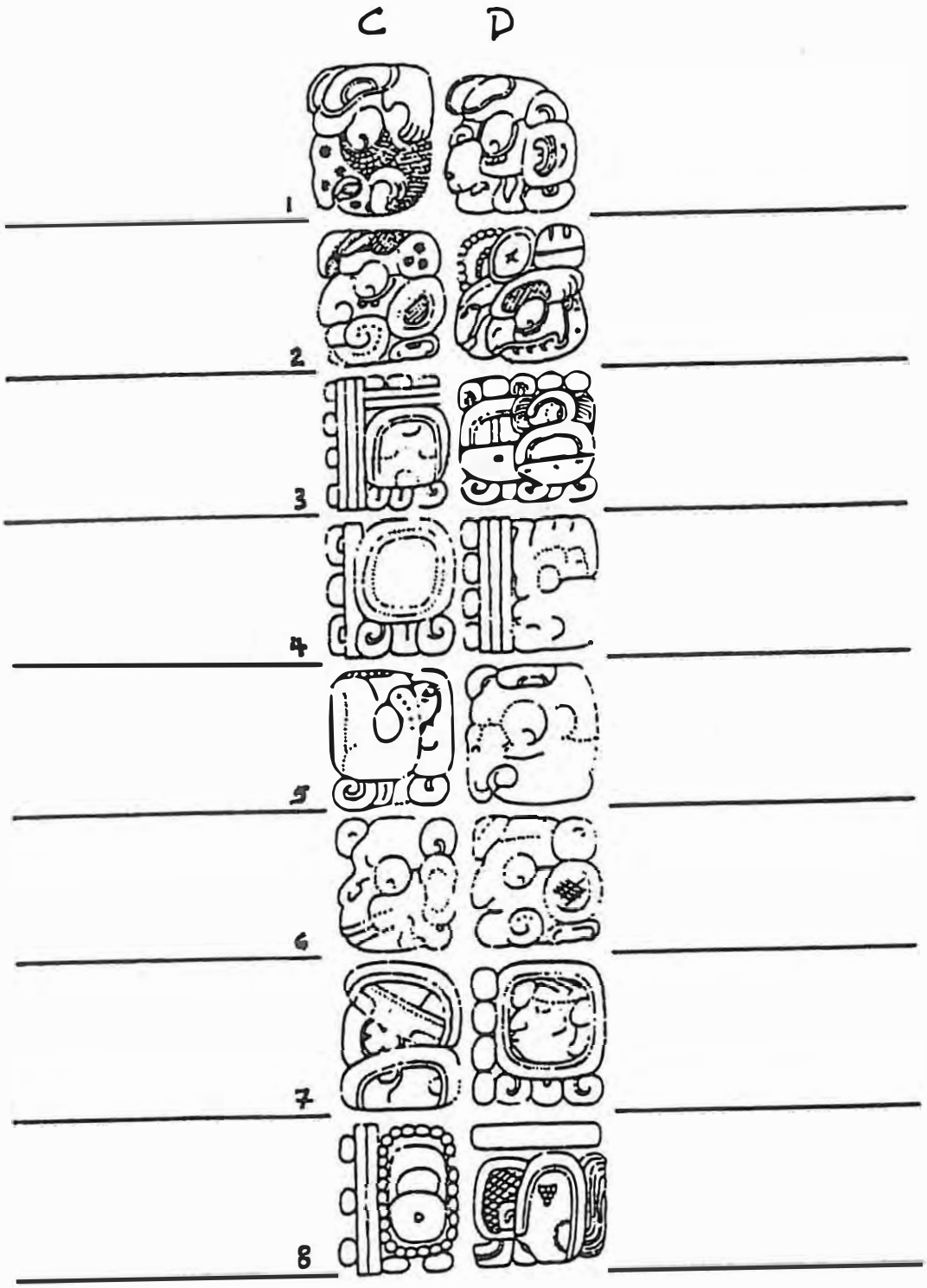
So, by the time they got to Stela 36, Ruler 2 had celebrated five Period Endings with five stelae, and they had the liberty to do something a little unusual with the text!

IV-2. Piedras Negras Stela 33 (John Montgomery). Ruler 2's Niche Stela, celebrating his first Period Ending after accession, in the presence of his mother (after all, he was only 13!).



IV-3. Layout, Piedras Negras Stela 36




C
D
1
2
3
4
5
6
7
8

Che' tza' ujtyi b'ajche' jiñi!

"That's the way it ended!"

(the traditional ending to a Chol folktale)