

## Directions and Partitions in Maya World View

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The words and hieroglyphs used by the Classic Maya, the Colonial Maya, and the modern Maya for the “four directions” have been a subject of interest for a long time. Sixteenth-century sources provided the words used by the Yucatec Maya for the directions. The terms were East, lik'in or lak'in; North, xaman; West, chik'in; and South, nohol (Martínez Hernández 1929). These are still the terms used by Mayas of the Yucatecan branch of the Mayan family (Barrera Vásquez et al. 1980; Bricker et al. 1998; Hofling & Tesucún 1997). As far as the glyphs were concerned, epigraphic research in the nineteenth century identified the hieroglyphs used to represent the directions. However, it was a long time before scholars knew how to put these two lines of evidence together, and there are still unresolved questions.

### **The Four Directions: Terms and Hieroglyphs.**

The focus of much of the research into this topic has been the phonetic reading of the Classic Period hieroglyphs that represent the “four directions” ([Figure 1](#)). In his review of decipherment, David Kelley (1976:53) summarized the discussion up to the mid 1970s, giving Léon de Rosny (1876) and Edward Seler (1902-1923) the credit for having established the glyphs for the directions and for the colors. The color terms were critical to the decipherment of the directional glyphs, because while de Rosny identified the glyphs as standing for directions, he did not know which glyph stood for which direction. Once the color terms were deciphered, the relationship between colors and directions that pervades the Colonial sources made it possible to assign specific directions to each of the glyphs, since East is associated with ‘red’, North with ‘white’, West with ‘black’, and South with ‘yellow’. (The fifth color term, ‘blue/green’ is associated with the ‘Center’.)

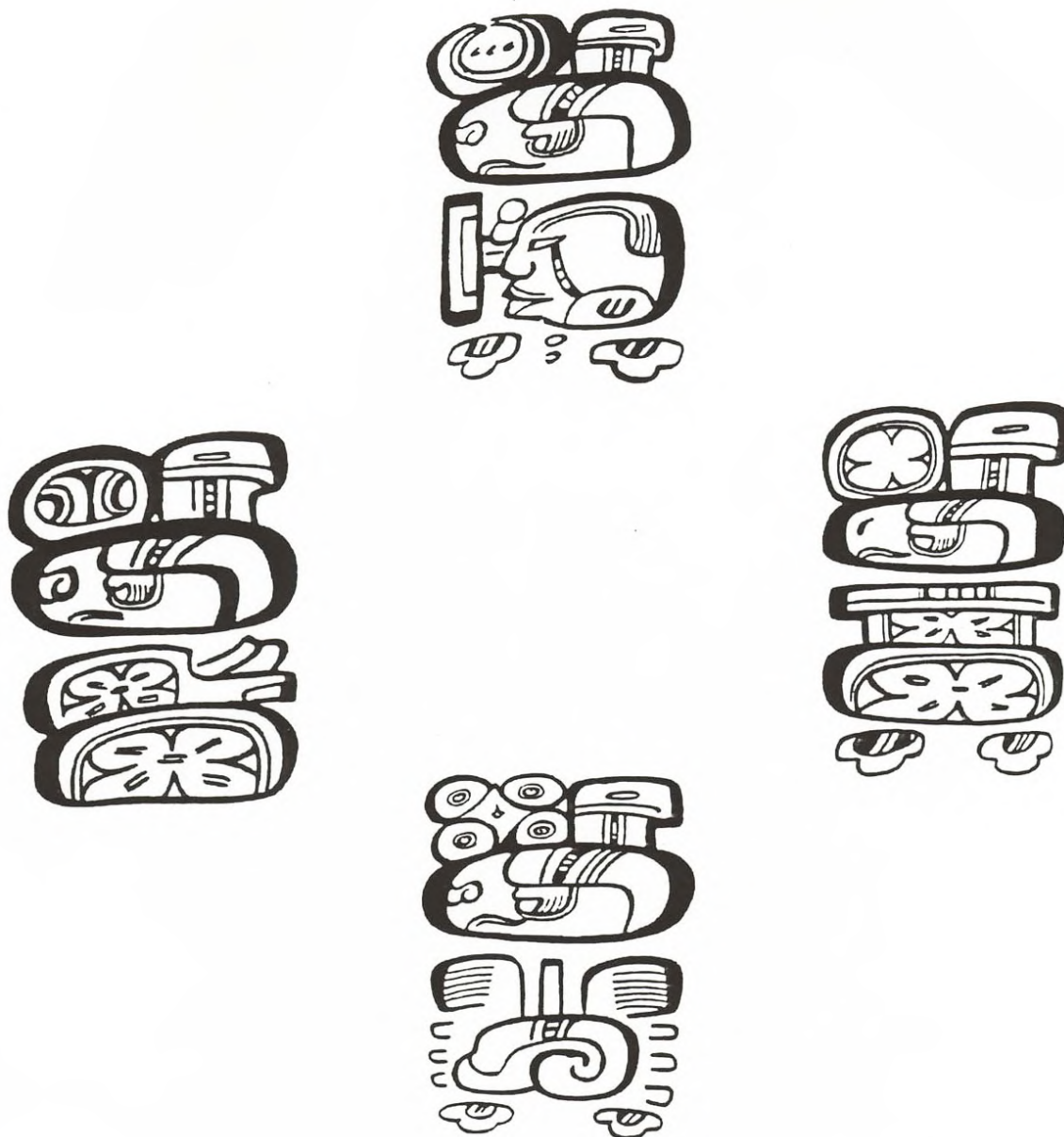


Figure 1. The Classic Maya hieroglyphs that represent the “four directions” in Rio Azul Tomb 12 (after a drawing by David Stuart, Stuart 1987b:162, Fig. 41): North (top), West (left), East (right), and South (bottom). The directions are accompanied by undeciphered glyphs (above each direction) referencing the Moon (north), Night (west), Venus (south), and Day or Sun (east).

In his mid-twentieth century Maya Hieroglyphic Writing: An Introduction, J. Eric S. Thompson (1960) offered no clear readings for the directional glyphs, since he assigned no

phonetic value to the contrasting prefixes on the glyphs for 'east' and 'west'. The main sign was clearly k'in 'Sun', however, and he recognized the relationship of the glyphs for East and West to the Colonial Yucatec terms, guessing that East would be read lik'in and West chik'in. He also suggested that the latter term might be derived from \*chin-k'in 'lowering of the Sun'. North and South presented even more problems. Thompson offered no explanation for xaman, North, but speculated that nohol, South, might be derived from noh 'great', a concept sometimes associated with the right hand, and South is on the right hand when you are facing East.

By the 1970s, the inverted Ahau (T178) that occasionally forms part of the East glyph ([Figure 2](#), top) had been recognized as a phonetic sign for the syllable la, making the East glyph read la-k'in, identical to one of the attested Yucatecan terms (Kelley 1966:3-4). Kelley (1976) argued that the hand (T219) that occurred as an affix on the West glyph ([Figure 2](#), bottom) was the hand shown in the day sign Manik, and that the day Manik in the Mayan calendar corresponds to the day named Deer in other Mesoamerican calendars. While he noted that 'deer' in Cholan languages was chij, he stopped short of reading T129 as chi, to confirm the reading of West as chi-k'in, like the Colonial Yucatec term. Rather, he preferred the reading che (Kelley 1976:181). (However, the readings la and chi have been confirmed by later research, and are included in modern presentations of the syllabary, e.g. Schele 2001:16, Stuart 1987a:46.).

Readings for North and South had not yet been proposed, but as Gordon Brotherston (1976) had pointed out, most Mayan languages do not have terms for North and South, so there was little data that could be brought to bear on the problem. In 1983, Victoria Bricker, following up on a comment made by Clemency Coggins (1980), pursued the idea that directional terms referred to the path of the Sun across the sky and through the underworld. The main thrust of her paper was to argue that the base meanings of North and South were not cardinal directions, but 'zenith' and 'nadir' (technically 'up' and 'down', but perhaps better understood as the directions of the Sun in its highest, or northernmost, and lowest, or southernmost, paths during the annual solar cycle as seen from the tropics). In line with this argument, she proposed readings for the directional glyphs as they appeared on Copan Stela A, the glyphs that had been discussed by Kelley ([Figure 3](#)). North was read yax caan or yax chan, 'green sky', which she interpreted as 'first heaven' or 'zenith', or, in another variant, 'above' or 'its height'. South was read mal, 'inside' or 'underside'. However, the North and South glyphs seemed to have little relation to the Colonial Yucatec terms xaman and nohol, nor were they related to the Cholan terms noh ec and nool, attested in Chortí.

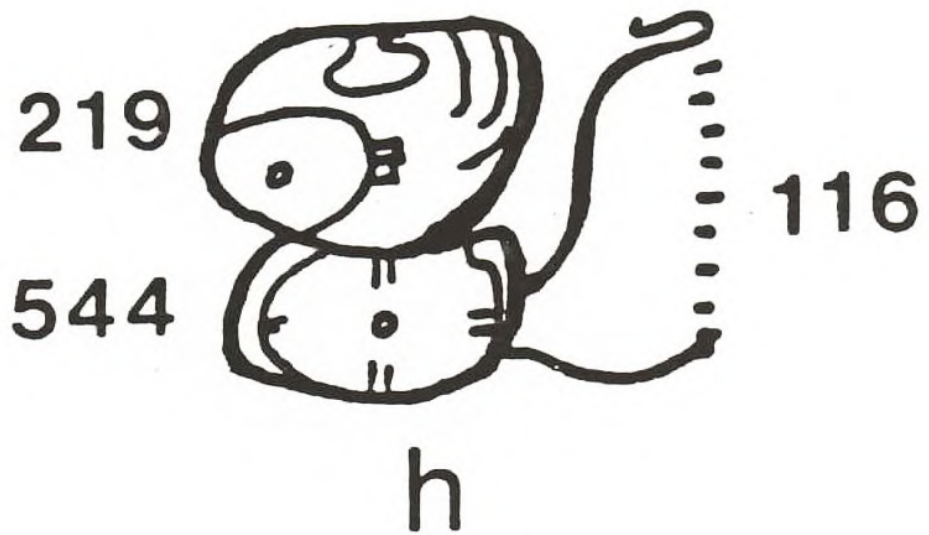
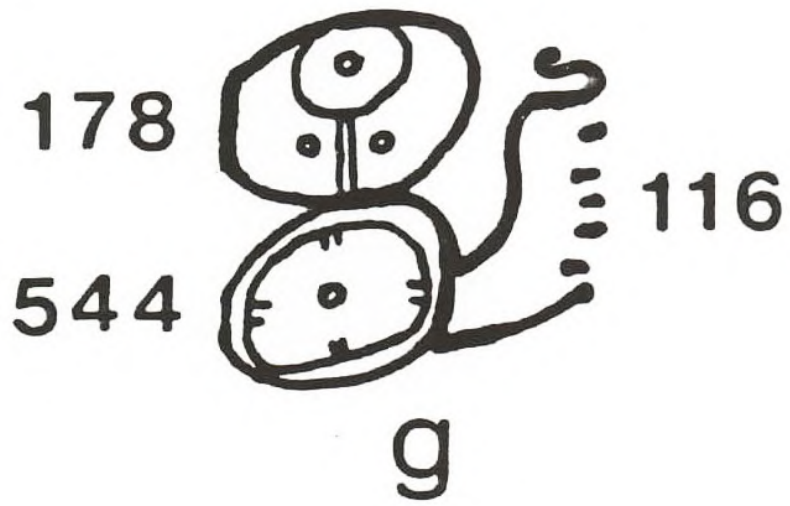


Figure 2. East (top) and West (bottom) as depicted in the Maya Codices (after Bricker 1983, Fig. 1g,h).

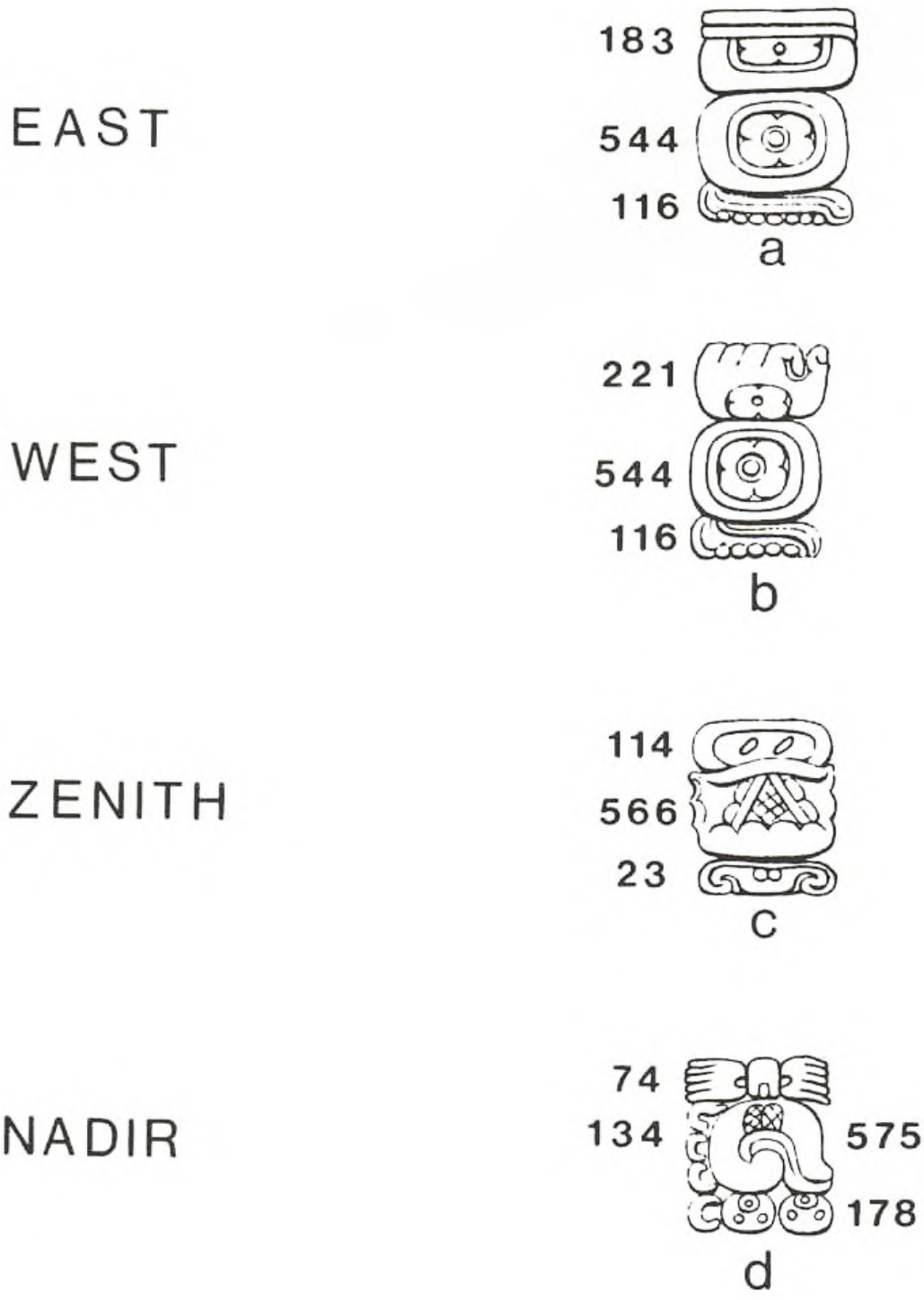


Figure 3. The directional glyphs as they appeared on Copan Stela A (after Bricker 1983, Fig. 1a-d).

Bricker (1983) also attempted to explain how the East and West glyphs were written, again taking the Copan Stela A examples as prototypical. She argued that in the term for East, modern Yucatec has a glottal stop which had not been taken into account: la'-k'in. She took the upper element in the East glyph from Copan to be a combination of two signs, 'ten' (lahun) above, and 'Sun' (k'in) below. From this sequence, she took the syllable la from the number, and considered the 'sun' sign to be a phonetic complement, giving the upper element a reading of la(hun)-k'(in) or lak'. This element then combined with the lower element, the Sun sign, to give--with further reductions in the sequences of consonants--the reading \*lak'-k'in or la'-k'in. A second version of the East glyph with a different superfix was interpreted as li-k'in, an alternate form for East in some varieties of Yucatec Maya.

Taking note of Kelley's suggestion about the reading of West, Bricker proposed that the hand over k'in in West was based on chi' 'bite' in Yucatec, since the fingers curled toward the thumb suggested chibal 'biting' to her Yucatec informants. She took the inset Sun glyph on the back of the hand (in the Copan Stela A example she chose to use) to be a phonetic complement, k'(in), giving the reading \*chi-k'(in)-k'in or chi(k')-k'in, chik'in. Chik' has no meaning in Yucatec, but Bricker noted that John Attinasi's Chol grammar listed a form that might be cognate, tihk' 'to disappear' (Attinasi 1973:321), so that West might be 'where the Sun disappears'. She supported this proposal by reference to Tzotzil terms for East and West: East is lok'-eb k'ak'al, 'emerging Sun', and West is mal-eb k'ak'al 'disappearing Sun'. (An alternative translation might be 'exit of the Sun' or 'where the Sun emerges', and 'where the Sun sets' [Laughlin 1988:248, 255].)

A few years later, Brian Stross (1991) proposed a different reading of these glyphs. Like Bricker, he took the upper glyphs of East to consist of a bar-dot number and k'in, but the particular example of the glyphs he chose to analyze had a single bar, not a double bar, and he read the number as 'five', ho', rather than 'ten', giving hok'-k'in for East. West was read k'ah-k'in 'resting place of the Sun' by treating the hand glyph as k'ab 'hand'. North he read xin chan 'in the center of the sky' (i.e. 'zenith'), and South was read mal-puy 'inside the earth'.

Stross' readings have not gained general acceptance, in part because about the time Bricker was writing her paper, the upper glyph in East was finally recognized for what it apparently is. At the Albany conference that produced Phoneticism in Maya Hieroglyphic Writing (Justeson & Campbell 1984), John Justeson, Linda Schele, and Peter Mathews identified the glyph as a depiction of a "shallow bowl or deep plate," a logograph for la, lak or lak', from the Proto-Mayan root \*laq 'plate, bowl'. This effectively eliminated from serious consideration both Bricker's and Stross' reading of the vessel lid as a number and the vessel body as k'in, based on a frequent sign that appears on the vessel's body. Also, on the basis of Kelley's (1976:181) reasoning, the Albany scholars argued for the reading of the hand in West as chi, reading West as chik'in. Since the Albany conference, it has been generally accepted that East and West read lak'in and chik'in, like the attested sixteenth century Yucatec terms. Since East and West read like Yucatec, the Albany epigraphers assumed that North and South are somehow read xaman and nohol, reading Bricker's yax

caan as xa-man, and assuming that the upper element in South, read ma by Landa (Tozzer 1941) and meaning 'great' in Cholan, is the antecedent of the noh 'great' element in Colonial Yucatec nohol.

The failure of Bricker and Stross to establish correct readings illustrates a methodological principle in Mayan epigraphy: It is advisable not to base an interpretation on a single example of the glyph you are studying (e.g., the directional glyphs of Copan Stela A). Rather, it is necessary to study the whole range of equivalent variants before proposing interpretations.

### **The Meaning of the Directional Terms.**

The shape and sound of these words was now understood, but the question remained, What do these words mean? Are they just unanalyzable terms for the directions, or do they have some deeper meaning; do they represent some metaphor? In 1990, when we were working with Terry Kaufman at our house in Texas, checking his comparative Mayan word list against our Chol and Chuj data, the question of the meaning of these Classical terms came up. We considered the matter and came up with a hypothesis concerning the origin of the terms written in Classical times and preserved in modern Yucatec.

It was apparent that 'east' and 'west' terms contained a reference to the sun, k'in. In the remaining parts of the terms, Hopkins noted that la-k'in had an l in it, and chi-k'in had a ch, and he recalled that the Chuj terms were tz'el k'uh 'east' and tz'och k'uh 'west', based on the verbs 'el 'exit, emerge' and 'och 'enter' (Hopkins 1967 and field notes). The 'east' term translates 'the sun (k'uh, the 'holy one') comes out' and the 'west' term translates as 'the sun goes in':

tz-Ø-'el k'uh, incompletive aspect / 3rd person subject pronoun / intransitive verb /  
noun  
tz-Ø-'och k'uh, incompletive aspect / 3rd person subject pronoun / intransitive verb /  
noun

The verbs 'el and 'och describe the actions one performs when exiting or entering a house. Thus the terms mean '[where] the sun exits' and '[where] the sun enters'. If the Yucatec terms could be derived from these roots, it would explain where the l and ch came from.

Kaufman then suggested that the a vowel in la-k'in could derive from 'el-ab, a term for the space in front of a house that includes the roofed-over front porch, a primary work area, and the adjacent open space. This is 'the exit of the house', the space that people 'come out' into. The i vowel in chi-k'in could derive from 'och-ib, the 'doorway' or 'entryway' of the house, the place where people 'go into' or 'enter' the house. Thus, the original terms were hypothesized to be:

\*'el-ab k'in 'the front porch of the house of the Sun (where the Sun exits)', and

\*'och-ib k'in 'the door of the house of the Sun (where the Sun enters)'.

The attested terms would then be the result of two processes of language change, both fairly common in the world's languages: (1) the reduction of the consonant cluster b-k' by the loss of b, and (2) the loss of the initial (unstressed?) syllable:

\*('e)la(b)-k'in > lak'in 'east';

\*('o)chi(b)-k'in > chik'in 'west'.

If these changes gave rise to the attested forms, it was clear that they had to have taken place well before the Classic Period, because the reduced forms were those that were being spelled out in Classic Period hieroglyphic inscriptions. As we will argue below, the evidence indicates that the original, unreduced, terms can be postulated for Proto-Mayan, as early as 2000 BC.

### **Support for the Hypothesis.**

Recently, motivated by the theme of the 19th Maya Weekend at the University Museum, University of Pennsylvania, "Four Corners of the Maya World," we have returned to the question of these directional glyphs and tried to find out if there was support for the hypothesis. We began to compile data on the terms for the directions in Mayan languages and other languages in Mesoamerica. This survey is by no means complete, but the results so far are interesting, and we offer the following observations.

First, it should be noted that it is not as easy as you might think to compile a list of the names of the cardinal directions in Mayan languages. There is a sizeable literature on Mayan languages, and there are extensive dictionaries for languages in virtually every branch of the family. However, many of these sources do not record any terms for the directions; the implication is that these words are not in frequent use, and that this is not a salient domain in modern Maya cultures. Some sources record some, but not all, of the expected directions. It is common to find terms for 'east' and 'west', but no terms for 'north' and 'south'. A further complication is that not all sources adequately explain how the terms cited are composed; there may be no analysis of the word or phrase cited.

Nonetheless, a certain pattern emerges from the data we have collected. With some data from each of the branches of the family and from several languages elsewhere in Mesoamerica, we note that there is a contiguous area where the metaphor of 'exit' and 'enter' is employed in the composition of terms for the directions 'east' and 'west'. There is a second area where the terms are based on 'rise' and 'fall'. And there is an intermediate area where there is some mix of the two patterns ([Figure 4](#)).



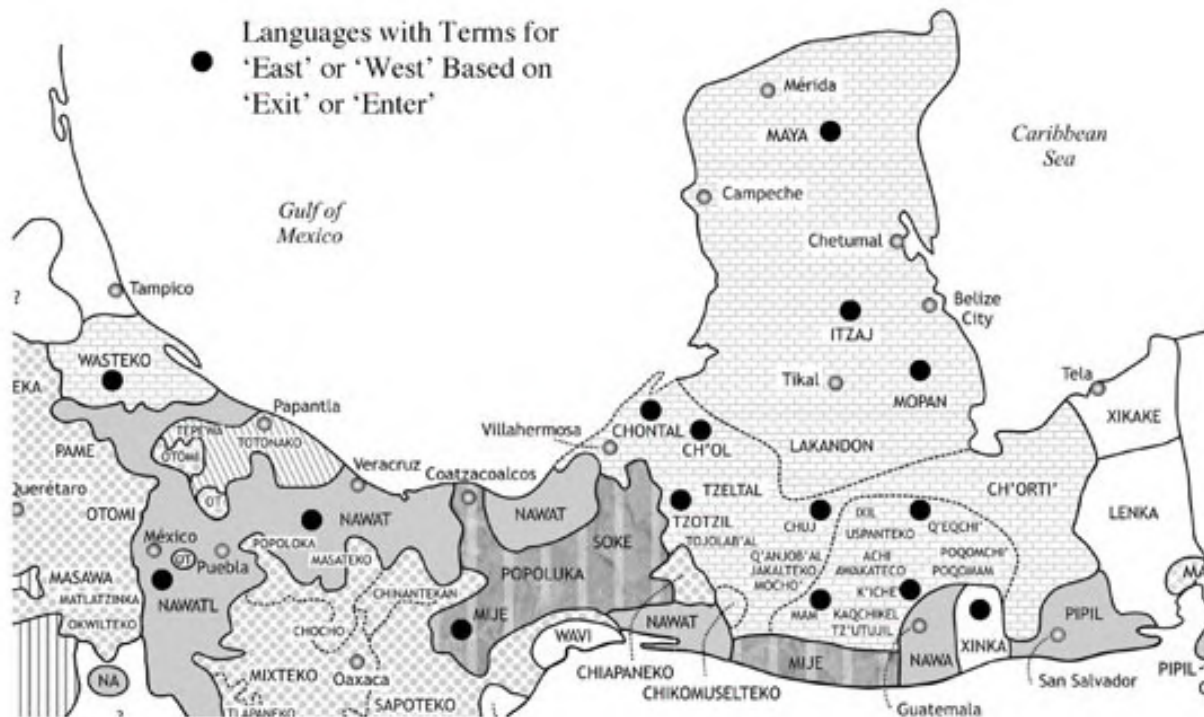


Figure 4. The distribution of 'east' and 'west' terms based on the verbs 'exit' and 'enter', respectively.

### East and West.

We have noted phrases for 'east' based on the verb 'go out' or 'exit' in all branches of the Mayan family: Huastecan (Larsen 1955), Yucatecan (Barrera Vásquez et al. 1980, Bricker et al. 1998, Hofling & Tesucún 1997, Ulrich & Ulrich 1976), Cholan (Aulie & Aulie 1978, Keller & Luciano 1997, and our own field notes), Kanjobalan (Lenkersdorf 1981, Hopkins 1967 and field notes), Tzeltalan (Tzotzil, Laughlin 1975), Mamean (England 1983), and Quichean (Basseur de Bourbourg 1862, García Hernández & Yac Sam 1980, Sedat 1955). Terms are reported in the original orthographies:

Huastec:	east	calel q'uiichaa	west	otsel q'uiichaa
Yucatec:	east	lak'in	west	chik'in
Itzá:	east	la-k'in	west	chi-k'in
Mopan:	east	-	west	oqueeb q'uin
Chol:	east	pasib q'uin	west	majlib q'uin
Chontal:	east	pase q'uin	west	pome q'uin
Tojolabal:	east	ba wa xk'e'i ja k'ak'u'i	west	ba wa xmukxi ja k'ak'u'i
Tzotzil:	east	lok'eb k'ak'al	west	maleb k'ak'al
Chuj:	east	tz'el k'uh	west	tz'och k'uh

Mam:	east	el (outward, motion to east)	west	ok (inward, motion to the west)
Quiche:	east	chi relebal gih	west	chi kahibal gih
Kekchi:	east	releb sak'e	west	roqueb sak'e

The Mamean data require some comment. We were unable to find terms for 'east' and 'west' in Mamean dictionaries, but Nora England's (1983) grammar of Mam notes the verbal affixes of directional motion as el 'outward, motion to the east' and ok 'inward, motion to the west'. We take this as evidence of an association of the East with outward motion, i.e. exiting, and the West with inward motion, i.e. entering, in line with our hypothesis. However, we have recently become aware of John Watanabe's (1983) article on Mam cosmology. Watanabe (1983:712) cites Santiago Chimaltenango Mam forms okni 'east', from ook 'enter', and elni 'west', from eel 'to go out', exactly the opposite associations. (He also cites jawni 'north', from jaaw 'to go up', and kubni 'south', from kub 'to go down'.) Thus, in his data, "[t]he verb ook 'enter' also implies 'move toward the east', while eel 'go out' can also mean 'move towards the west' (cf. England 1975:194)" (Watanabe 1983:713). We are unable to account for this apparent discrepancy, but would argue on comparative grounds that the original association is that reported by England: East and 'exit', West and 'enter'.

The Chol forms pasib q'uin 'east' and majlib q'uin 'west' also call for some comment. The verb pas-el, from which 'east' is derived, has a primary meaning of 'salir (el sol)' and a secondary meaning 'to bud, germinate' ("brotar [una planta]," Aulie & Aulie 1978:92), so it does not strictly conform to our 'exit' model. The verb majl-el, from which the 'west' term is derived, likewise does not conform, as it means 'to go' ("ir," Aulie & Aulie 1978:78). However, related expressions in Chol do demonstrate the association of 'enter' with West: och-ix q'uin 'late afternoon', literally 'the sun is already entering' ("ya es tarde (en el día)," Aulie & Aulie 1978:90).

Outside the Mayan family, expressions based on 'exit' and 'enter' are found in Xinca (Schumann 1967), Mixe (Schoenhals & Schoenhals 1965), and Nahuatl languages (Molina 1966 [1571], Andrews 1975, Taggart 1983).

Xinca:	east	ixpák (ixpá, 'salir')	west	yiwák pári (yiwá, 'entrar')
Mixe:	east	joma xaa pyítsum (pítsum 'salir [sol]), where the Sun comes out	west	joma xaa tyaca (taca 'entrar'), where the Sun enters
Nahuatl:	east	tonatiuh yquçiyayan (from 'exit'), the Sun's leaving place;	west	tonatiuh ycalaquian (from 'enter'), the Sun's entering place. (Molina 1966[1571])
Nahuatl:	east	tonal kisa-yampa 'the place where the Sun comes out [of the water]'	west	tonal kalaki-yampa 'the place where the Sun goes [into the water]' (Taggart 1983)

Taggart's modern Nahuatl data (from Huitzilán de Serdán, Sierra de Puebla) use the 'exit/enter' metaphor, but the implied location is the sea, not the Sun's house. Nonetheless, the verb 'goes [into]' is from cal(li)-aqui 'enter into a house'.

In our sample of Zoquean languages, none use the ‘exit’ metaphor for East or eastern sunrise.; rather, they use ‘rise’ and ‘fall’, or ‘rise’ and ‘disappear’. We have recently learned that the text of the La Mojarra stela, which represents Zoquean in the second century A.D., uses the verb ‘to settle or perch (as a bird)’ in the term for West (Kaufman & Justeson 2001, and T. S. Kaufman, personal communication, March, 2001).

Copainalá Zoque (Harison et al. 1981)

east chojtahgLsmL (cLsmL, 'arriba')

west tL'pahgLsmL (tL'pa 'se pone')

Francisco León Zoque (Enger & Allhiser 1987)

east jama qui'mguycyøsi (qui'mu, 'subir')

west jama tø'pcucyøsi (tø'pu 'se ocultó [sol, luna]')

We did not find evidence of an ‘exit/enter’ metaphor in Chiapanec (Aguilar Penagos 1992), Totonac (Reid & Bishop 1974), Zapotec (Nellis & Goodner de Nellis 1983) or Mixtec (Alvarado 1593). In these languages, the terms for ‘east’ may be built on verbs for ‘emerge, come out’ or ‘rise’. The terms for ‘west’ are not generally built on ‘enter’ but rather on ‘descend’ or ‘become dark’.

### ***The Mythology Behind the Metaphor.***

What reason lies behind the use of ‘exit’ and ‘enter’ as actions of the Sun that have to do with ‘east’ and ‘west’? Clearly it is not that the Sun ‘enters the sky’, and ‘exits the sky’, because the terms are reversed (except, as noted above, in Watanabe’s Mam data). The metaphor is explained by a version of the Maya origin myth that has been recorded many times in the Chol (Mayan) language, and which has occasionally been noted elsewhere (although it does not figure in the mythology of the Popol Vuj, a Colonial Highland Maya document). In the Chol origin myth (Cruz, Josserand & Hopkins 1994, Whittaker & Warkentin 1965), the Moon (“Our Holy Mother”) had two sons. The older one was hot-headed and aggressive, so the mother hid his younger brother from him for fear he might be killed. By chance the older brother discovered his sibling, and the two began to go out to work together and to look for food. The older brother repeatedly tried to kill his younger sibling, but without success. One day the younger brother discovered a bee-hive in a tall tree, and called his older sibling to retrieve the honey. The older brother climbed the tree and began to get the honey, but he refused to drop any down to his younger brother, who asked in vain to get his share. Rather than throw down honey, the older brother threw down balls of beeswax to bonk his brother on the head.

The younger brother decided he had had enough, and he began to make little gophers from the wax, arming them with sharp teeth made from a hard tropical wood. The gophers went to work eating away at the base of the tree. To disguise the noise and movement, he began to strike the tree with his toy machete. When the older brother began to notice that the tree was trembling, his brother replied that he was only playing with his toy machete, it was nothing to worry about. Finally, the gophers ate through the trunk of the tree and it fell, killing the older brother. In some versions of the story, the older brother

breaks up into hundreds of pieces, each of which becomes a distinct animal (species). In other versions, he ascends to the sky to become Venus, motivating the association of Venus with hostility and warfare.

The younger brother returns home, but his mother, sensing something has gone wrong, makes him take her to where she can find her older son. The boy then presents her with the animals, all that remains of the older brother. She cries at the loss of her son, and her cries scare many of the animals, who flee into the woods, becoming the wild animals. She begins to gather the other animals to take them home, and these become the domestic animals. In her haste and distress, she pulls off some tails and pulls out some ears, so that, for instance, the rabbit has only a short tail but long ears.

The boy and his mother return home. He begins to work to support his mother. Each day he leaves the house and climbs up higher and higher until he ultimately reaches the sky. He works during the day illuminating the earth and causing things to grow. In the evening he re-enters the house for the night. His mother, lonely in her loss, tries to follow him, but she is older and weaker, and she falls further behind every night. Thus the major figures of the sky are the younger brother, the Sun, his mother, the Moon, and the diminished older brother, Venus.

With this story as a metaphor, it is logical to call the east the 'exit of the Sun', where the Sun leaves his house, and to call the west 'the entryway of the Sun', where the Sun enters his house. One would expect a correlation between the area where the 'exit/enter' terms are used and the area where this myth is or once was present; a working hypothesis would be that the map of terms for 'east' and 'west' ([Figure 4](#)) would reflect the distribution of this tradition.

The antiquity of this mythology is indicated by the Classic Period monuments that depict the "Holy Family," e.g., Copán's Structure 66C Hieroglyphic Bench ([Figure 5](#); Webster et al. 1998: 332-333). Framing the bench, at either end, are bird heads, in profile (A, I). The bench is divided into sections by the face of the Sun, facing the viewer (B, E, H). The Moon (C) is shown holding her favorite pet, the rabbit. Venus, the older brother, is shown in his scorpion avatar (G). In between them, the Sun appears in his nocturnal (D) and diurnal (F) manifestations (marked with Night and Day signs). The linguistic evidence gives us another gauge of the age of this tradition. Lak'in and chik'in, the terms for 'east' and 'west' as written in the Classic Period, already show the changes that distinguish the Classic and Yucatec terms from those of other languages of the Mayan family--the loss of initial syllables and the reduction of consonant clusters. This implies that these two terms have been in use for a long time--so long, indeed, that the original meanings of the terms must have been lost. Furthermore, the distribution of the 'exit/enter' metaphor, including all branches of the family, suggests an origin in Proto-Mayan, a language spoken more than 4000 years ago.

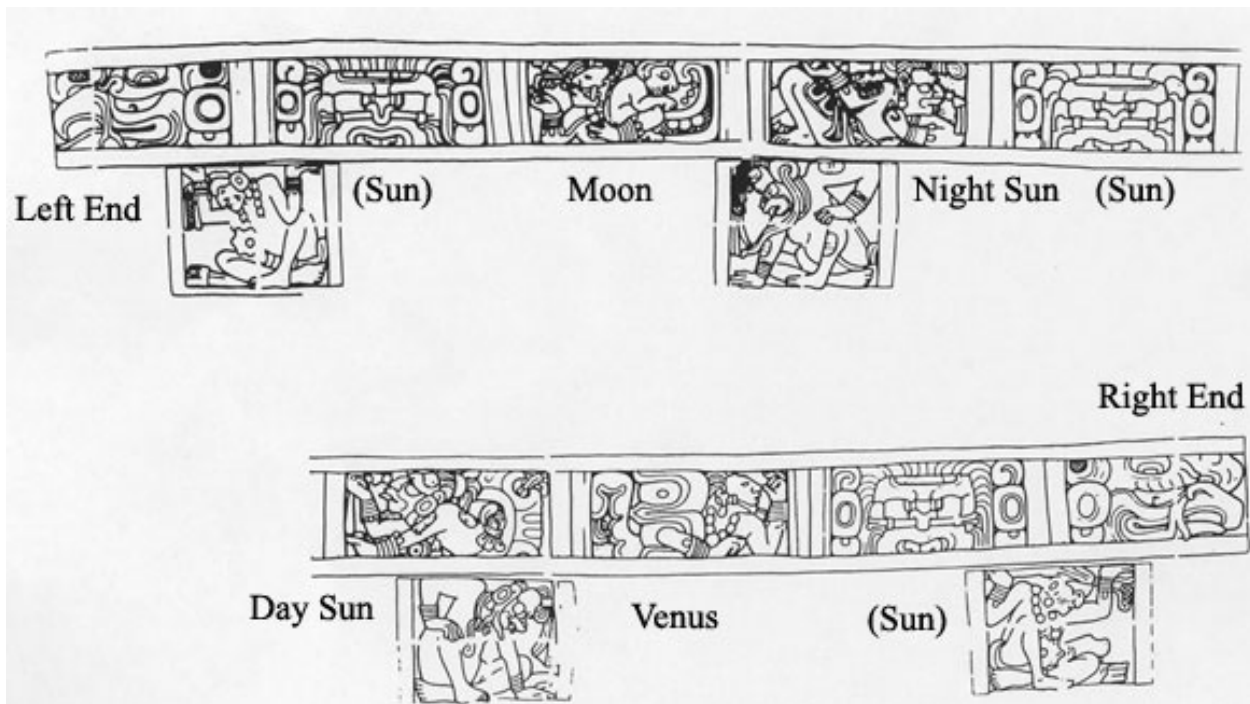


Figure 5. Structure 66C Hieroglyphic Bench, Copán (after Fig. 5; Webster et al. 1998:332-333). The rim of the bench seat is divided into sections by three full-faced Sun figures, and it terminates at each end in a profile bird head. Between the dividers, from left to right, are the Moon, the (Night) Sun, the (Day) Sun, and Venus. For another example of these elements, see Figure 1.

### ***North and South.***

Terms for 'north' and 'south' are much more elusive. First, there are far fewer reports of these terms. Second, there are no consistent patterns in the nomenclature. Many languages have no recorded terms for 'north' and 'south', even when 'east' and 'west' are noted. Among those languages for which data are available, it appears that there are two major patterns. Some languages make reference to 'right-hand' and 'left-hand', although not all in the same way. Some languages form the words for 'north' and 'south' on the basis of local geographical conditions.

The Yucatec term for 'south' (Barrera Vásquez et al. 1980) may be based on 'right-hand' (or 'big'). But Quiché (Brasseur 1862, García & Yac 1980) makes reference to 'north' as the 'right hand', and to the 'south' as the 'left hand'. Tojolabal (Lenkersdorf 1981), which has long descriptive phrases for these directions, makes reference to 'left hand' and 'right hand', but in an entirely different way. The Tojolabal entries are clearly not lexical; the compiler of the dictionary, Carlos Lenkersdorf, is concerned with explaining to Tojolabal

speakers the meaning of terms in Spanish (and vice versa) rather than simply listing lexical items.

Yucatec Maya:	north, xaman south, nohol (noh = 'right-hand, big')
Quiché:	north, u wiquiak'ab relbal k'ij (on the right hand of the Sun's path) south, u mox relbal k'ij (on the left hand of the Sun's path)
Tojolabal:	north, wa xkilatik ti b'a norte ta wa xkan to b'a surda jk'ab'tik b'a..wa xmukxi ja k'ak'u'i (We are looking north when we stand with our left hand toward where the sun goes down.) south, wa xkilatik ti b'a sur ta wa xkan ti b'a swa'el jk'ab'tik ba wa xmukxi ja k'ak'u'i. Ti kan b'a mero sur ja chiwan k'anal (We are looking south when we stand with our right hand toward where the sun goes down. The south is where the Cruz del Sur [a constellation] is.)

While Classical Nahuatl has a mythological reference to the 'place of Death' as the base of 'north' (Molina 1966 [1571]), one variety of modern Nahuatl makes an association of 'south' (for which no term is recorded) as 'sinister, left-handed', and regards 'north' as positive and right-handed [while calling it 'down-slope'] (Taggart 1983). Thom Smith-Stark has called to our attention (personal communication, November, 2001) that 'south' can be extracted from Molina's phrase 'south wind'.

Classical Nahuatl:	north, mictlampa 'place of Death' south [wind], amilpampa 'place of the ocean'
Huitzilán Nahuatl:	north, tanipa 'down(slope)' south, 'sinister, left-handed', no term recorded.

Tzotzil (Laughlin 1975) refers to both north and south as 'to the side of the sky': north, xokon vinajel 'side of the sky'; south, xokon vinalhel 'side of the sky'.

With reference to local geography, Huastec and Chontal refer to 'south' as '(big) mountain'. The only recorded Chol term for either of these directions is 'north', and this term is clearly not a directional but a climatological term ('big storm', norte in the sense of a 'norther').

Huastec:	north, tsa:yle:l south, pulik ts'en 'big mountains (sierra grande)'
Chontal:	north, [no term recorded] south, witz 'mountain'
Chol:	north, chäk 'ik'lel (Sabanilla Chol, 'bad weather' (literally, 'big wind'), Aulie & Aulie 1978) south, [no term recorded]

Outside the Mayan family, several languages make reference to climatological phenomena in naming 'north' and 'south'. Chiapanec (Aguilar 1992) associates 'north' and

'cold', 'south' and 'heat'. Totontepec Mixe (Schoenhals & Schoenhals 1965) refers to the winds.

Chiapanec: north, nbapori, nyhila nalame 'north, where it freezes'  
south, nbayarii, nyhila tohmó 'south, where it is hot'  
Mixe: north, joma po:j myets 'where the wind comes from'  
south, joma po:j ñu:jcx 'where the wind goes to'

The sources we have consulted report no terms at all for 'north' or 'south' (except for Spanish loanwords) in Mopán ('south', sur), Mixtec (Alvarado 1593), Totonac (Reid & Bishop 1974, 'south', sur), Zoque de Copainalá (Harrison et al. 1981), Zoque de Francisco León (Engel & Allhiser de Engel 1987), and Zapotec de Juárez (Nellis & Goodner de Nellis 1983).

In a number of languages, the terms for 'north' and 'south' (as well as those for 'east' and 'west') are unanalyzable, given our present state of knowledge. Examples are

Chiapanec: E, nbaloori; N, nbaporii; W, nbaluarí; S, nbayarii;  
Xinca: N, xawóna; S, xanxáro.

## Conclusions.

Reviewing the material we have gathered, we find an interesting pattern. The languages that base terms for 'east' and 'west' on the verbs 'exit' and 'enter' are located along the Gulf Coast Lowlands, with extensions inland to adjacent groups: Huastec (and Nahuatl), Mixe, Yucatecan (and some Cholan), Chuj, and Kekchí (and Xinca). Along the fringes of this area are languages with mixed metaphors (some use of 'exit' and 'enter', but not for both terms: Chol, Quiché). In the Highlands, the terms are based on 'rise' and 'fall' (Totonac, Zoque, Tzotzil, Tojolabal), or 'appear' and 'disappear' (Mixtec, Zapotec). While the Sun is the subject of all these expressions, only in a restricted area can we associate the directional terms with the metaphor of leaving and entering a house, and this area centers on the Maya Classic zone and extends to its fringes.

The extreme chaos of terms for 'north' and 'south' reinforces the idea that these "directions" are almost irrelevant. Directional orientation is based on the movements of the sun, east to west, and the other two "directions" are of lesser importance. How, then, do we derive the system of four directions that is recorded in village barrios, regional states, and other matters? The solution seems to be, as Karen Bassie has argued (Bassie-Sweet 1996), that 'east' and 'west' are not directions at all, but are broad quadrants of the sky centered on, but not limited to, the cardinal directions 'east' and 'west'. 'East' is the entire section of the horizon where the sun rises during the year, from solstice to solstice and back again. This quadrant is represented in site layout by the E-group complexes found at Uaxactun and elsewhere (Morley 1946:Fig. 3). 'West' is the corresponding quadrant where the sun is observed to set. 'North' and 'south' are simply the quadrants that lie between

these two, that lie 'at the sides of the sky', 'to the right hand' or 'to the left'. That is, two defined quadrants imply two others, giving a total of four. The "four corners of the Maya world" are simply the limits of the east-west quadrants, and do not imply four cardinal directions.

This concept of quadrants survives even where the directional terms have been lost. In Tenejapa Tzeltal (Brown & Levinson 1993), directional orientation has shifted to ta alan, 'downhill' (north) versus ta ajk'ol 'uphill' (south). However, these are conceived of as quadrants, separated and opposed to the other quadrants (east and west), both called ta jeich 'transverse', 'to the side' ([Figure 6](#)). The antiquity of the concept of four quadrants is indicated by the Classic Maya calendrical notation known as the "819-day count" (Thompson 1960:212-217). As the language of these clauses is currently understood, God K is said to move through a series of four quadrants, each associated with a direction. The quadrants are traversed in counter-clockwise manner, each requiring 819 days to cross. The count gives the day on which God K entered the current quadrant, and the elapsed time since that date (leading to the principal date on the monument).



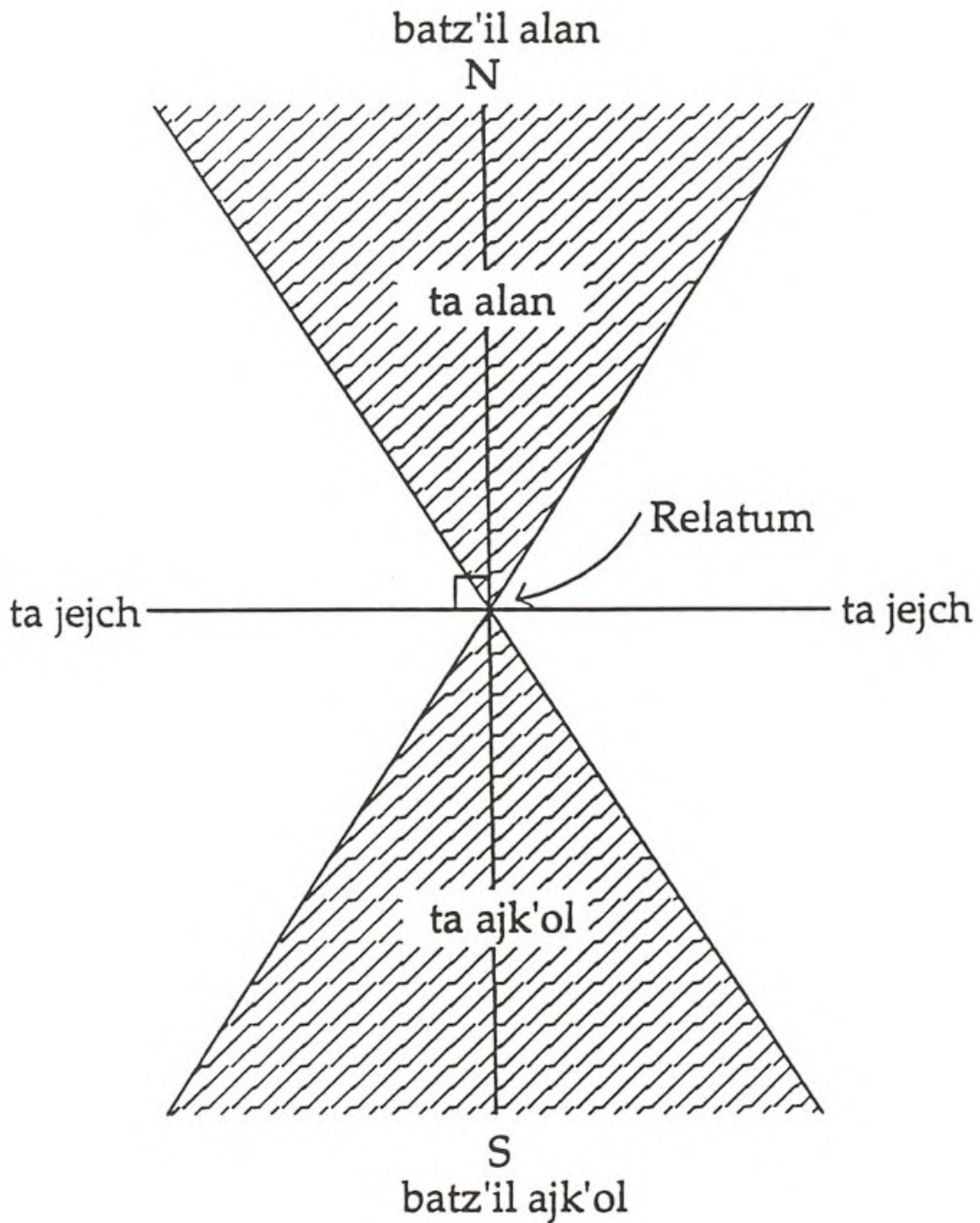


Figure 6. The directions as reported for Tzeltal of Majosik' paraje, Tenejapa, Chiapas (Brown and Levinson 1993:57, Fig. 1). East-West orientation has been replaced by 'uphill' and 'downhill'.

The opposing quadrants divide the sky into four units, and we think it is no accident that the words for ‘sky’ and the number ‘four’ are homophones (or near homophones) in most Mayan languages, as in Chol chan ‘sky’ and chan ‘four’, Itzaj ka’an ‘sky’ and kän ‘four’. This four-way division is created symbolically in rituals performed by the Yucatec shaman (hmen), who begins a ceremony like the ch’a chaak by bending two flexible branches into arches over the table that will serve as the altar. Each of the two wooden arches is anchored at opposing corners of the table, and the arches cross in the middle of the celestial dome so created. The Classic Maya glyph that represents ‘sky’ in sky-bands (T552) reflects this symbolic construction of the sky, and it is notable that the “crossed bands” of a common sky glyph are occasionally marked with a sign that resembles the semantic sign for ‘wood’ ([Figure 7](#); Hopkins 1994).

Finally, while it is dangerous to get carried away with numerology, it is interesting that four-way divisions are prominent in Maya world view.

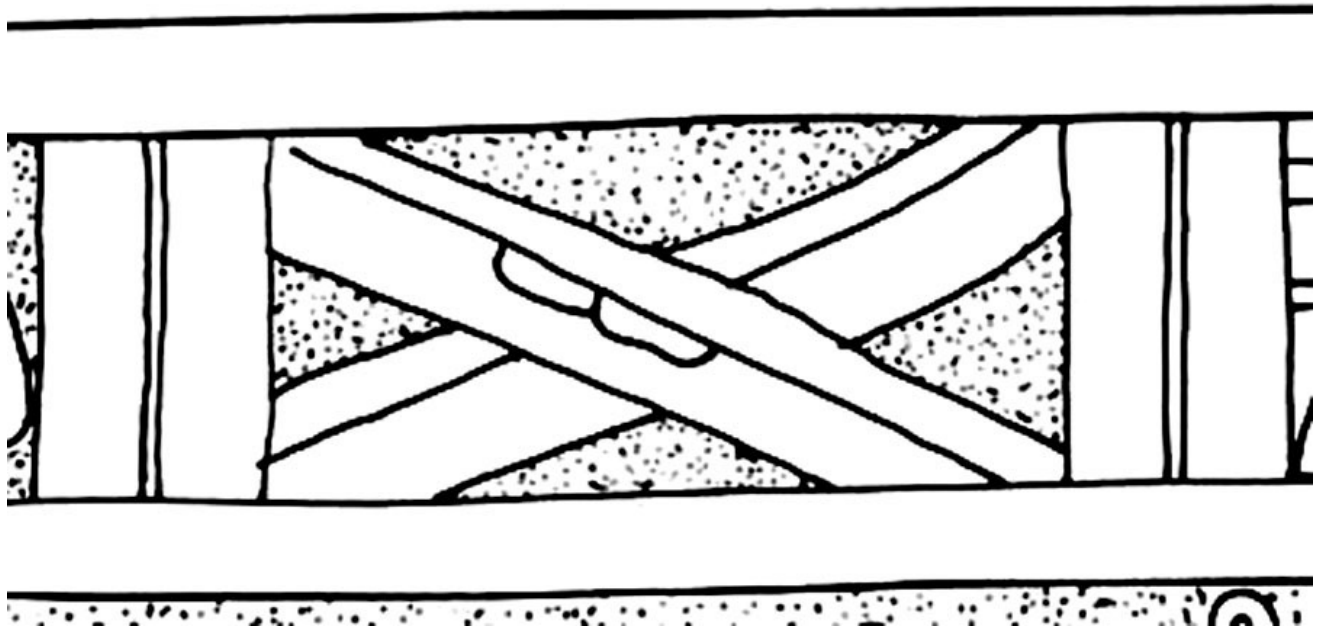


Figure 7. The Crossed Bands design representing the Sky (T552) in the Sky-band design framing the cover of Pacal’s sarcophagus, Palenque (after a Merle Greene Robertson drawing, Robertson 1983: Fig. 99).

#### Four-way Partitions of the Universe.

Associated with the four partitions of the sky are four colors, with a fifth color associated with the reference point, the center: East, red (sunrise); North, white (mid-day, zenith); West, black (sunset); South, yellow (?); Center, green (earth). And, as we have noted before (Hopkins 1994), there are other four-way partitions of the universe in Maya cognitive systems.

There are four major classes (or life forms) of animals, based on locomotion: Mammals (walkers), Reptiles and Amphibians (crawlers), Fish (swimmers) and Birds (fliers) (Hopkins 1980). These classes are represented in the Codices in scenes of offerings, which often depict a sacrifice from each class. For example, on Dresden 30B-31B (Villacorta & Villacorta 1976:70,72; Bricker 1997:3), deer, turkey, iguana, and fish are given in successive offerings. It is notable that in this text there are directional associations with these offerings: the East (sunrise) offering is deer, often associated with the sun; the North (zenith, sky) offering is turkey, a bird. The West (sunset) offering is iguana, a reptile, and the South (nadir, underworld) offering is fish.

There are also four major classes of plants, the life forms Trees (erect, woody-stemmed plants), Vines (plants with non-erect stems), Grasses (plants with thin leaves and non-branching veins), and Herbs (everything else) (Berlin, Breedlove & Raven 1974). In some languages, these cognitive categories are grammaticalized as gender classes in the nominal system (Hopkins 1967, Breedlove & Hopkins 1970-71).

The Maya world seems to be naturally divided into fours: the world itself, its animals, its plants and its colors, are all divided into four contrasting partitions. It may go beyond discretion to suggest that, like the directional axes, each of these four-way partitions may have a major and a minor axis. East-West is clearly dominant for directions, while North-South is relatively minor. Given the associations manifested in the Dresden Codex (see above), it could be argued that for colors Red-Black is dominant, while White-Yellow is minor. (If true, this might have various explanations.) Likewise, it could be argued that Mammal-Reptile is the major axis for animals, against the minor axis Bird-Fish (land animals versus others). While they are not implicated in these associations, one might guess that the botanical world might be partitioned into Tree-Herb as the major axis (having by far the largest numbers of members), and that the Vine-Grass axis (with relatively few taxa) is the minor axis. We suggest that further research into these matters might clarify some aspects of Classic Maya iconography and religious practice.

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## List of Figures

[Figure 1](#). The Classic Maya hieroglyphs that represent the “four directions” in Rio Azul Tomb 12 (after a drawing by David Stuart, Stuart 1987b:162, Fig. 41): North (top), West (left), East (right), and South (bottom). The directions are accompanied by undeciphered glyphs (above each direction) referencing the Moon (north), Night (west), Venus (south), and Day or Sun (east).

[Figure 2](#). East (top) and West (bottom) as depicted in the Maya Codices (after Bricker 1983, Fig. 1g,h).

[Figure 3](#). The directional glyphs as they appeared on Copan Stela A (after Bricker 1983, Fig. 1a-d).

[Figure 4](#). The distribution of ‘east’ and ‘west’ terms based on the verbs ‘exit’ and ‘enter’, respectively.

[Figure 5](#). Structure 66C Hieroglyphic Bench, Copán (after Fig. 5; Webster et al. 1998:332-333). The rim of the bench seat is divided into sections by three full-faced Sun figures, and it terminates at each end in a profile bird head. Between the dividers, from left to right, are the Moon, the (Night) Sun, the (Day) Sun, and Venus. For another example of these elements, see Figure. 1.

[Figure 6](#). The directions as reported for Tzeltal of Majosik’ paraje, Tenejapa, Chiapas (Brown and Levinson 1993:57, Fig. 1). East-West orientation has been replaced by ‘uphill’ and ‘downhill’.

[Figure 7](#). The Crossed Bands design representing the Sky (T552) in the Sky-band design framing the cover of Pacal’s sarcophagus, Palenque (after a Merle Greene Robertson drawing, Robertson 1983: Fig. 99).