Prepositions and Complementizers in the Classic Period Inscriptions

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The Mayan languages most commonly considered relevant to Mayan hieroglyphic studies include languages in the Yucatecan, Cholan, and Tzeltalan families. There is a group of particles found in these languages—*ti, ti7, ta, tä,*—used variously as prepositions and complementizers. The primary purpose of this paper is to describe and compare these particles and their functions across languages and to show how such comparison is relevant to the study of language/dialect variation in the inscriptions of the Classic Period.

Both complementizers and prepositions are morphemes that indicate that what immediately follows is in an oblique relationship to the main verb of the sentence—that is, what follows is neither a subject nor a direct object of the main verb but is related to it indirectly. The difference between them is that while a complementizer introduces an embedded sentence, a preposition introduces only a noun phrase. For example, in the sentence "Anna showed that Mary was right" the word "that" is a complementizer introducing the embedded sentence "Mary was right" and it indicates that "Mary" is not the object of the main verb "showed," but, rather, the subject of the verb "was" in the embedded sentence.

In the sentence "He arrived for the game at 8:30" "for" and "at" are both followed by noun phrases that stand alone in oblique relationship to the verb "arrived." Prepositions that indicate spatial relationship such as "in," "on," "under," and "behind" are called locatives. Locative prepositions frequently are extended semantically to include location in time, such as "*in* two days," "*at* five o'clock," "*on* Friday." Prepositions are sometimes used in partitive constructions, such as "three pieces *of* candy," "the second day *of* April."

Complementizers and Prepositions in Mayan Languages

Figure 1 shows a map of the Maya area that contains a table of complementizers and prepositions in various Mayan languages. The table represents a simplification of the actual situation, which for some languages is more complex. I have not listed every complementizer or every preposition, only those that are most common and are related to this discussion. In addition, the words given as complementizers often have certain nonlocative prepositional functions.

In both modern and Classical Yucatec *ti7* is a general preposition with a number of uses, including location: *té7 ti7 a k'aano7,* "there in your hammock"; time: *oxlahunte ti katun,* "13 katuns"; substance: *ti7 ce7,* "with wood"; source: *ti7 in-maamah,* "from my mother."

The particle *tii7, entonces,* is uncommon in modern Yucatec, but is used as a complementizer in the following example from the Book of Chilam Balam of Chumayel (Roys 1933[1967:49]): **Tii** *ualac u u cutob, oxlahun cut-hi u cutob lae,* "**While** they were settled, thirteen were their settlements."

In Chol the particle *ti* can be used as either a preposition: *7i mi k'otel* **ti** *yotot,* "He went **to** his house" (Cruz G. et al. 1980:117); or a complementizer: *Che7 wolis i kax* **ti** *tik'an,* "When it begins **to** cook."

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

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

The third language most commonly referred to in relationship to the hieroglyphic script is Acalán Chontal, known from a seventeenth-century document (Scholes and Roys 1968).[1] The Acalán document has both *ti* and *ta.* According to Smailus (1975:216), *ti* and *ta* are
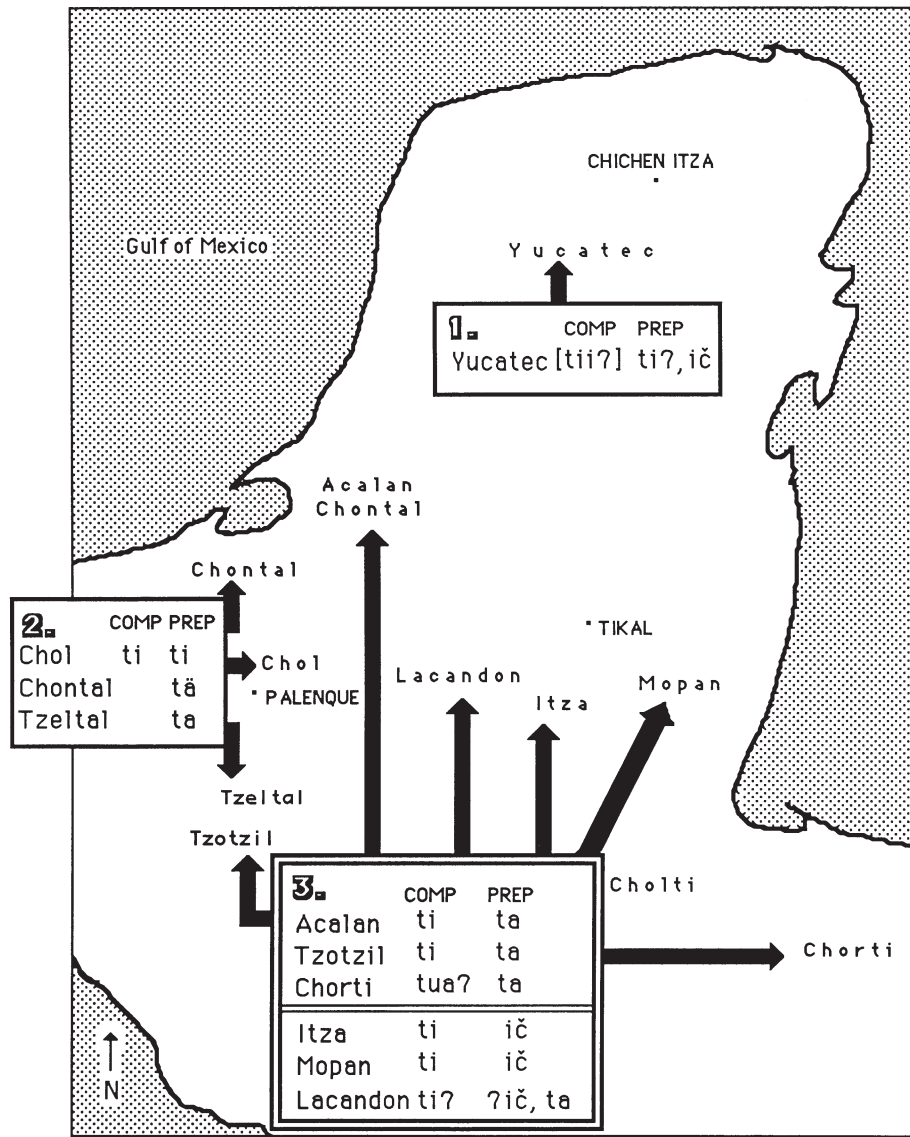
Map labels: CHICHEN ITZA, Gulf of Mexico, Yucatec, Acalan Chontal, Chontal, TIKAL, Lacandon, Itza, Mopan, Chol, PALENQUE, Tzeltal, Tzotzil, Cholti, Chorti, N

Box 1:

	COMP	PREP
Yucatec	[tii?]	ti?, ič

Box 2:

	COMP	PREP
Chol	ti	ti
Chontal		tä
Tzeltal		ta

Box 3:

	COMP	PREP
Acalan	ti	ta
Tzotzil	ti	ta
Chorti	tua?	ta
Itza	ti	ič
Mopan	ti	ič
Lacandon	ti?	?ič, ta

Fig. 1   Map: Prepositions and Complementizers in Greater Lowland Mayan

probably in free variation, and he glossed them both as "*en, a, hacia.*" However, upon more careful examination, a distinction in functions can be observed (see table 1). In 127 occurrences *ta* is followed by a geographical place name 50% of the time, by locations, such as "on the road," "in the canoe," in 13% of the examples. *Ta* is followed by possessed body parts, in typical Mayan relational noun constructions, 9% of the time. All of these are locative expressions, and they account for 75% of all occurrences.

There is one occurrence of *ta* cited by Mathews and Justeson (1984:190) as a complementizer: *koti* **ta** *tectelob ta tuxakhaa* (Smailus 1975:47), "They went **to** establish themselves at Tuxakha."

Of 15 occurrences of *k'oti* in the Acalán document, it is followed by *ta* 8 times. In all of the other cases, how-

Table 1. *Ta* in Acalán Chontal

ta followed by:		Times	Approx %
geographical place names	LOCATIVE	64	50%
locations	LOCATIVE	16	13%
relational noun constructions	LOCATIVE	12	9%
TOTAL LOCATIVE		92	72%
time expressions	TEMPORAL	16	13%
name of office	STATUS	9	7%
manner of speaking, writing	MANNER	6	5%
undetermined		5	4%
TOTAL		128	100%

ever, *ta* introduces a location or an expression of time. Although *ta* does appear here where one would expect a complementizer, it may be that its presence is dictated by the fact that the verb *k'oti,* "arrived," is a verb of motion and is thus frequently followed by the location *ta,* since *ta* is not used anywhere else as a complementizer.

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

There are far fewer examples of the particle *ti,* only 15, but the uses are varied and more complex. Twice it is used with numbers, once in a partitive construction following a number in "50 *ti* soldiers," and once before the number "*ti* 80 people." *Ti* is also used before the word "cacao" in *chol pakal yithoc utz ti cacau,* literally, "field(s) cultivated and good with/of cacao." *Ti* is also used as a benefactive "for someone." Most significantly, *ti* is used several times before a verb or verbal noun to introduce a dependent clause: *utz xach* **ti** *bix ic on* (Smailus 1975:53), "it is good **that** I go"; **ti** *y-ol* Dios (Smailus 1975:75), "**as** God wishes"; *utz* **ti** *ta-c-than çut-lec-et-ix* (Smailus 1975:78), "it is good **that,** in my words, you return . . ."

There are only two examples in which the functions of *ti* appear to overlap with *ta,* that is, following *ui,* "here," before the word *cah,* "town" (twice), and once before *cab,* "land." Here is a contrasting pair: *ui ta cah Tixchel* (Smailus 1975:23); *ui ti cah Tixchel* (Smailus 1975:111). Presumably both expressions mean "here in the town of Tixchel." Either the two particles are indeed here used here in free variation, or there is a scribal error, or there is a difference in meaning that, lacking sufficient contexts and any native speakers, is beyond our capabilities to discover.

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

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

In modern Tzotzil there is also a clear distinction between the functions of *ta* and *ti. Ta* was glossed by Laughlin (1975:327) as a preposition meaning "among, as, at, before, by, from, in, to." In other words, it functions as a locative preposition with a number of other

functions, similar to *ta* in Acalán Chontal. *Ti* is a particle meaning "the, that, the fact that," that is, it introduces complement clauses, and indicates certain other oblique relationships, as does *ti* in Acalán. (There is at least one other complementizer in Tzotzil, *li,* but that does not concern us here.)

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

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

Glyphic Evidence of Contrasts

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

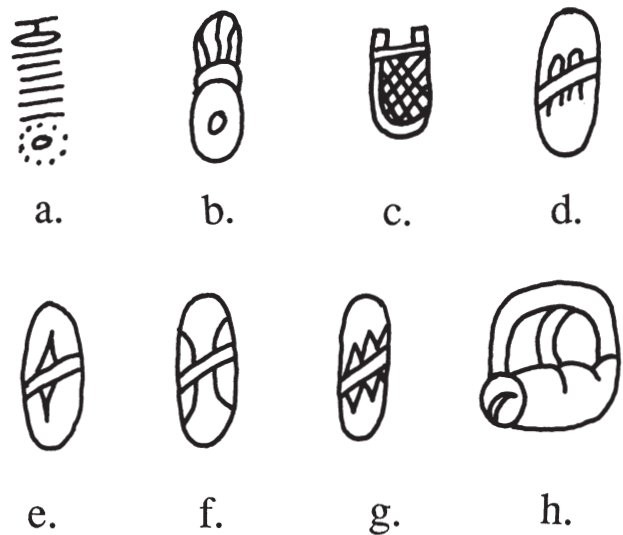The complementizer/preposition contrast that exists in some modern Mayan languages can be an important

Fig. 2 Ti/ta *affixes.* (a) *T51;* (b) *T59;* (c) *T90;* (d) *T102;* (e) *T103;* (f) *T113;* (g) *T245a;* (h) *T565.*

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

Because of potential language/dialect differences, it is not sufficient to compare these affixes indiscriminately across sites and time periods. If dialectical variation does exist, it will only be detected by comparing patterns at multiple levels: single text, texts from a single period, texts within a site or within a given geographical area. Also, it is crucial in such an investigation to frame the proper question. The object is not simply to try to find which modern language is closest to the ancient language recorded at a particular site. Neither is it simply to choose between Yucatecan or Cholan as the language family for various Classic Maya groups. The question is, rather, what patterns of variation did exist, and what were their temporal and geographic limits?

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

1. as a phonetic complement in the anterior and posterior date indicators,

2. in *ti*-constructions (following T1.60.757 or T516),
3. as a main sign,
4. before the "Half-Period marker,"
5. occurrences of T89/90/91/92 (hereafter referred to as T89),
6. preceding offices or titles such as Ahau and Batab,
7. as miscellaneous prefixes,
8. as suffixes,
9. as locatives, before "sky," "house,"
10. as temporal markers, before "day," before the coefficients of day names, and
11. in partitive constructions, between coefficients and day names.

The glyphs recorded were T51/T53 (hereafter referred to as T51), T59, T89, T102, T103, T113, T245a, T565, and T747. The sites included Ixkun, Naranjo, and Tikal from the Petén, Seibal, Machaquilá, Aguateca, Tamarindito, Itzán, and Dos Pilas from the Petexbatun region, the Usumacinta site of Yaxchilán, Caracol in Belize, Copán and Quiriguá in the east, and the western sites of Palenque, Bonampak, and Tortuguero. Many important sites were not considered, and not all inscriptions at the included sites were available. This was a preliminary foray into the data to test the hypothesis that complementizer/preposition differences can be diagnostic of dialect differences, and to find out what patterns might prove the most helpful.

Table 2 gives some of the results of this pilot survey. The presence of a glyph in a particular category is significant, but due to the accidents of preservation, the paucity of texts at some sites, and the speed with which the data were scanned, the absence of a given item is not necessarily significant. I would like to begin discussion of the findings with those features that offer the clearest results, and then to mention several of the categories that were looked at, but were not included in table 2.

The most universal use of T59 is in the anterior and

Table 2. *Ti/ta Affixes*

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

posterior date indicators. David Stuart suggested that T59 is a phonetic complement in a reading of *ut(i)*, "it happened," "it came to pass" for the combination of a phonetic sign for *u* + T59 (+T126) (fig. 3a). The only two sites for which I found any substitution for T59 were Copán and Quiriguán, where the *ti*-vulture head, T747, occurs at least six times.

The second category in table 2 is the occurrence of a prefix before Ahau or Batab (fig. 3b), both titles or offices known from ethnohistorical sources, and still used in some modern languages. Also included is the phrase at Palenque read by Schele as *ta och le*, "as enterer of the succession" (fig. 3c; Schele 1984:95). T59 is found at seven of the sites that have these title expressions. At Palenque and Tortuguero there are various examples of the *ta* group of affixes, and none of T59. Bonampak has one example of T59 (St.2:C2; fig. 3d) and one of T565 (Stone 1:A2; fig. 3e). The two inscriptions are dated by Peter Mathews (1980:72f) as about 100 years apart, and are done in very different glyphic styles, so it is possible that the use of the two prefixes reflects linguistic variation within a single site. All three sites having glyphs other than T59 to introduce titles are on the western edge of the Maya area.

The next category is that of *ti*-constructions, defined for purposes of this study as a verb, either T1.60:757, the general verb (fig. 4a), or T516:103 (fig. 4b) followed by a *ti/ta* affix followed by another glyph, which may be a noun, a verb, or a verbal noun. There is some question whether all of these are complementizer constructions,
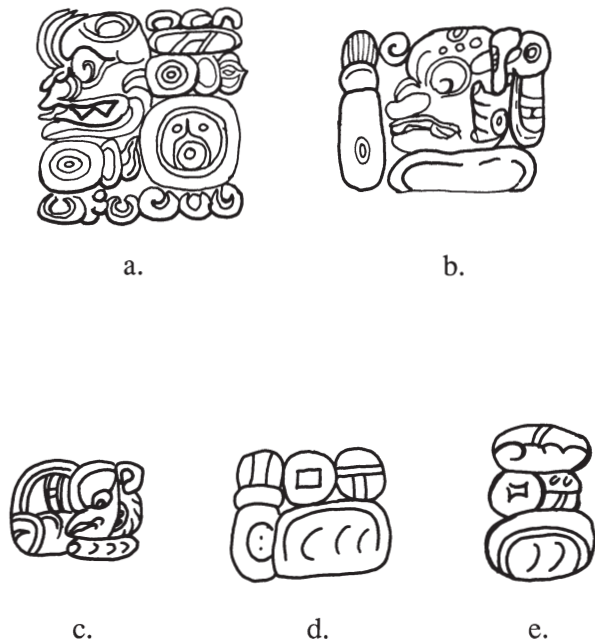

a.

b.

c.

d.

Fig. 4 Examples of ti/ta *affixes. (a) Naranjo, St. 24 A1–4 (after Graham and von Euw 1975). (b) Yaxchilán Lnt. 53 B2–C2 (after Graham 1979). (c) Palenque TFC L8 (after Schele 1984). (d) Copán St. 6 A6 (after Maudslay 1889–1902).*

or whether some are simply prepositional phrases following a verb. The glyphs that were used in locative phrases have some bearing on this issue.

In the texts examined there were *ti/ta* affixes before "sky" and "house" (fig. 4c), presumably as locative prepositions. At Yaxchilán T59 occurs in this context. T565 occurs at Palenque, and T113 occurs at both Palenque and Naranjo. The best argument in favor of the *ti*-constructions being complement clauses is that at Naranjo on a single stela, Stela 24, T59 is used following T1.60:757 (A4) and T113 is used as a locative (D5), and in a calendrical expression (A2) as well. T59 and T113 substitute for each other in similar contexts at different sites, but I do not yet know of an instance of them substituting for each other within a single site. The fact that they are found in different contexts at Naranjo suggests that this site recorded a language that distinguished between a complementizer/preposition and an extended locative preposition, and that the *ti*-phrase following T757 is indeed more than just a prepositional phrase. This argument is not necessarily relevant to the *ti*-phrases that follow T516:103.

a.

b.

c.

d.

e.

Fig. 3 Examples of ti/ta *affixes. (a) Copán St. C A7 (after Maudslay 1889–1902). (b) Tikal St. 21 A11 (after Jones and Satterhwaite 1982). (c) Palenque TFC G2 (after Schele 1984b). (d) Bonampak St. 1 C2 (after Mathews 1980). (e) Bonampak Mon. 1 A2 (after Mathews 1980).*
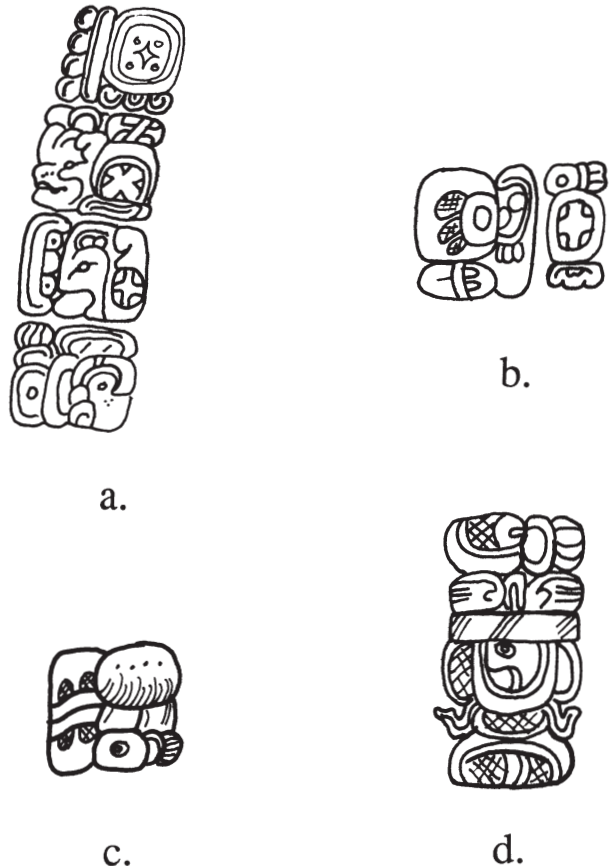
There are at least three sites at which T59 precedes the glyph for the Half-Period Ending (fig. 4d). It would appear to be a temporal preposition except for the fact that at Naranjo other temporal markers are T51, T113, and T565, while T59 appears before the half-period. It is possible that instead of "at/on the Half-Period" it means "because of/on the occasion of the Half-Period," or it may be a phonetic complement.

Seven of the sixteen sites that have one of the affixes occurring either before a *k'in* "day" sign or before the co-efficient of a day in the Sacred Calendar. Those sites that have T103, T113, T565, and so forth, have them as temporal markers. Those sites that have T59 consistently have T59 in temporal expressions as well.

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

There are a number of categories for which data were collected, but which were not included in table 2. Examples of the affixes that used prefixes, suffixes, and main signs in miscellaneous contexts were dropped since they did not seem to add any significant information about pattern variation. Status markers for "as Ahau," "as Batab," and so forth, were subsumed into a single category. Finally, examples of T89 were found at several sites, but their presence did not seem to correlate with any of the *ti/ta* differences that were observed.

In the course of this pilot study it became apparent that, in addition to finding some categories superfluous, others might usefully be added. One of these is the number of times an affix occurs in a particular context at each of the sites, as well as some estimate of the size of the corpus for the site. This would allow for a comparison of relative frequency of occurrence and would show whether a particular pattern was unique or fairly common. Although the miscellaneous prefix and suffix categories were deleted in order to simplify the material, each of these occurrences needs to be recorded with its context. It goes without saying that the count needs to be done on a corpus of the Classic inscriptions that is as complete as possible, that is, including all possible sources of inscriptions at every known site.

Summary

Is it possible to sort out functions and phonetic readings for the *ti/ta* affixes? Based on the data of this preliminary study, it is possible to make some tentative generalizations about phonetic readings for certain of the *ti/ta* affixes. If we scan across the columns of table 2 it is evi-

dent that T59 and T747 do not substitute in the same contexts as the *ta* group of affixes (T103, T113, T565, etc.), which seem to be equivalent with each other. If we scan down the columns, we see that those sites that do not have any of the *ta* group of affixes in prepositional contexts have T59 in the corresponding columns.

At Palenque, where T59 is used phonetically, but not prepositionally, we can conclude that the preposition used, which was written with members of the *ta*-group, was not pronounced *ti*, but probably *ta* or *tä*. Likewise, at Tortuguero, only *ta* affixes are found. Bonampak, however, is the only site at which T59 and any of the *ta* group of affixes are found in similar contexts. As mentioned above, the separation of two occurrences by almost a century and differences in carving style allow for the possiblity that this may reflect actual language differences.

There is one other glyph that occurs in contexts both with T59 and with the *ta*-group. T51 is used with T59 in temporal constructions at Yaxchilán, and in partitive constructions at Copán. These sites do not have *ta*-group prepositions. However, at Palenque and Tortuguero T51 occurs in the same contexts as the *ta* prepositions and is presumably equivalent with them.

If we attempt to assign phonetic readings to the prepositional affixes, one solid piece of evidence is that T59 was read *ti* by Yucatec speakers at the time of Landa. However, at those sites that have only T59 in prepositional contexts there are several possible readings: (1) T59 is always *ti*; (2) T59 is *ti* phonetically, but *ta* or *tä* logographically, when used as a preposition; or (3) T59 was read *ti* or *ta* depending on the context (phonetic complement, preposition, complementizer).

At those sites that have only *ta* affixes prepositionally, but use T59 phonetically for *ti*, the preposition was probably pronounced *tä* or *ta*. The unusual distributional patterns of T51 may indicate one of two things: (1) it was always read *ta*, so, at those sites where it substitutes with T59, T59 was also read *ta*, or, (2) it was bivalent, *ti* at sites with only *ti*, and *ta* at sites with *ta*.

At the site of Naranjo, where contrasts exist within a single monument, it appears that there were two distinct particles, one of which, *ti*, functioned as a complementizer with some additional uses, and *ta*, which was a preposition.

Those sites with only one particle are similar to modern Yucatec, Chol, Chontal, and Tzeltal (fig. 1). Palenque and Tortuguero, with only *ta* or *tä*, are similar to Tzeltal and Chontal. Naranjo, with both *ta* and *ti*, would pattern with modern Tzotzil and colonial Acalán Chontal.

It is important to remember that the *ti/ta* patterns represent only one diagnostic feature among many that are available in determining the nature and extent of language differences among the Classic Maya. Many of the observations about site groupings made here have been apparent to epigraphers for some time and are supported by the presence and absence of other types of construc-

tions, use of particular glyphs, choice of subject matter, and differences in artistic style and craftsmanship.

As more data are processed, some of these generalizations will be confirmed; others, particularly those based on negative evidence, will have to be revised. In many ways the Classic Period inscriptions represent a *grapholect*, that is, a transdialectal language that is an artifact of the commitment of a culture to writing (Ong 1982:8, 106–108). Even though the sounds, vocabulary, syntactic constructions, and formulaic expressions of a Highland Scotsman and a Texan are quite distinct, many of the differences disappear when they write formal English; if they are literate, they can be expected to read formal English equally well. Language differences are much more obvious in a conversation between the two than in their ability to comprehend written English.

In the same way, it would appear that, while the Classic inscriptions were understandable to literate people throughout the area, the glyphic texts give clues about the language differences of the scribes who composed them. And although some phonetic differences are known, in a logo-syllabic script shared by languages with a high percentage of cognate vocabulary, subtle phonetic contrasts can be difficult to detect. On the other hand, syntactic differences, such as preposition/complementizer contrasts, can provide important clues to language variation during the Classic Period.

Notes

2. Phonetic readings given in this paper are consistent with the interpretations listed in Justeson 1984a unless otherwise noted.