Baj "Hammer" and Related Affective Verbs in Classic Mayan

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Some years ago now, I proposed a decipherment of the Classic Maya logograph **BAJ** (Figure 1)—clearly representing a stone object wielded as some kind of tool or weapon, most likely a hammer, chisel, or celt.[1] Although some of the epigraphic evidence for this value was complicated by the abbreviations characteristic of nominal contexts in Maya writing, the linguistic evidence was strongly supportive, with several relevant languages providing evidence of a root *baj* "to hammer" of appropriate form and meaning. More encouraging still, modern Mayan languages suggested that the root pertained to a class of affective verbs which had hitherto escaped notice in Maya writing. However, while the decipherment and its implications have been presented in several forums (e.g., Zender 2001, 2006, 2008), and outlined in a lengthy footnote in my Ph.D. thesis (Zender 2004:Note 83), I have not yet had the opportunity to present a full defense of these observations in print. Thus while I am encouraged to note that the proposal
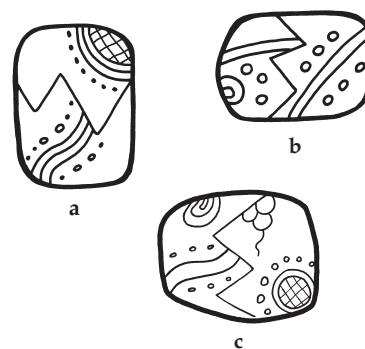

Figure 1. The **BAJ** "hammer" sign: (a) Dos Pilas Panel 7, A5a; (b) 'Ocosingo Jade,' American Museum of Natural History, New York (after Squier 1869:Fig. 9); (c) Dos Pilas HS 2, East, Step 1, E2a (all drawings by the author unless otherwise noted).

has been well received by my colleagues,[2] the full extent of the evidence has not yet been made generally available. This paper aims to rectify that shortcoming. In addition to detailing the evidence behind the initial decipherment, it also explores the ramifications of glyphic abbreviation for our evolving understandings of Classic Maya orthography, and the implications of the addition of affective verbs to our present understandings of Classic Mayan grammar.

As with all phonetic decipherments, that of the **BAJ** sign depends on glyphic

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[1] Due in part to its visual similarity to other signs for flint and stone (see below), this sign has yet to be satisfactorily cataloged. Yet despite the sign's absence from Thompson's *Catalog* (1962), I think it unhelpful to designate the sign 'T527.528' as Prager et al. (2010:75) have done. Macri and Looper (2003:269) catalog a quite different sign (based on an example from Copan Stela 49) as '1C2,' but erroneously link it to the similar but nonetheless distinct sign under investigation here, which appears in the name of Ruler 1 of Dos Pilas (Martin n.d.). Since **BAJ** provides a brief label, and has the virtue of being the sign's actual value, I urge the adoption of this emic designation over any new catalog number, though I initially term it the 'flint'-like sign herein.

[2] Among those who have referenced this decipherment and/or its relevance to a class of affective verbs in Maya writing are: Bernal (2008:106, Note 5); Boot (2009:31); Colas (2004:128-130); Guenter (2003:2); Helmke et al. (2006:Note 2); Houston and Inomata (2009:110-111, 137); Kettunen and Helmke (2008:63, 65); Martin (n.d.); Martin and Grube (2008:56-57, 231, Dos Pilas Note 1); Prager et al. (2010:75); Stuart (2009:322); and Tokovinine and Fialko (2007:Note 4).
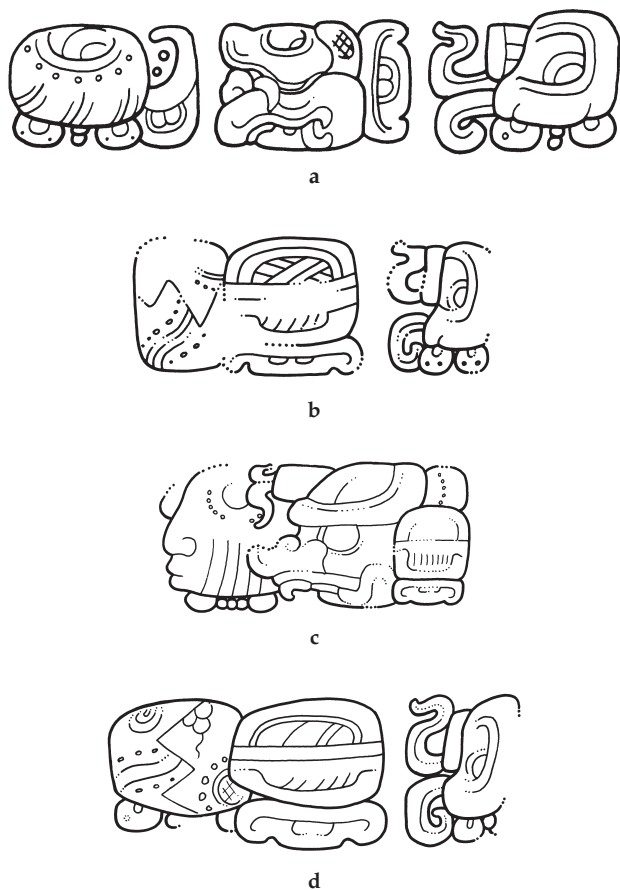
a

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Figure 2. Various spellings of the name of Bajlaj Chan K'awiil of Dos Pilas: (a) **ba-la-ja CHAN-na K'AWIIL-la**, Dos Pilas HS 4, I1-I2 (drawing by Simon Martin); (b) **BAJ-CHAN-na K'AWIIL-la**, Dos Pilas Panel 7, A5-B5; (c) **ba-la-[CHAN-na]K'AWIIL**, Dos Pilas HS 2, Center, Step 5, E2 (after Zender 2002); (d) **BAJ-la-CHAN-na K'AWIIL-la**, Dos Pilas HS 2, East, Step 1, E2-F2 (after Zender 2002).

substitutions in a well controlled context. In this case, the key substitution occurs in the name of Dos Pilas Ruler 1, and has been noted since at least the early 1980s (Houston and Mathews 1985:10; see also Houston 1993:102-104). While Ruler 1's name often appears in the form **ba-la-ja CHAN-na K'AWIIL-la** (Figure 2a), it appears equally often in a form where the initial three syllables are replaced with a 'flint'-like sign (Figure 2b).[3]

Understandably, this substitution led Houston and Mathews (1985:10) to propose that the 'flint'-like sign carried the logographic value **BALAH**. Prior to my own reanalysis—and with a minor orthographic update

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[3] Although clearly distinct from the "flint" sign proper (T257 **TOOK'**), it was nonetheless this similarity that prompted Ruler 1's well known nickname 'Flint-Sky-God K' (e.g., Schele and Freidel 1990:179-183). It might also be noted that what is said here about the name of Dos Pilas Ruler 1 also applies to the namesake ruler pointed out by David Stuart (2009:322) on Zacpeten Altar 1, V1.

to **BALAJ** in the wake of Grube's (2004a) recognition of distinct **j**V and **h**V signs in Maya writing—most scholars had adopted Houston and Mathews's reading (e.g., Boot 2002a, 2002b; Freidel et al. 1993:476, Note 42; Macri and Looper 2003:269; Martin and Grube 2000:269). Nonetheless, there are two problems with this analysis. The first is epigraphic, in that even though they did not come to light until more recently, new substitutions for the 'flint'-like sign include the abbreviated syllabic sequence **ba-la** (Figure 2c) and the addition of syllabic -**la** to the 'flint'-like logograph (Figure 2d). Whether phonetic complement or abbreviated inflection, the latter spelling casts significant doubt on a core logographic value of ***BALAJ**. Another recurrent problem was the recalcitrance of the putative *balaj* term to yield to linguistic analysis. Mayan languages offered few roots of suitable shape, and none that could motivate the iconic origins of the 'flint'-like sign, much less explain its contextual significance in Ruler 1's name. Let us deal with these two problems in turn.

To begin with the iconography, Houston and Mathews (1985:9-10) were among the first to note that the 'flint'-like sign carries markings very similar to those typically seen "on Classic depictions of axe blades." They cite in this connection a portrait variant of the now well known **KAL-ma-TE'** compound from Tikal Stela 21 (Figure 3a), pointing out that the miniature axe held by the Storm God carries the same parallel lines and dots as the 'flint'-like sign from Ruler 1's name. Indeed, these elements occur throughout Maya art to label sturdy tools and sharp weapons fashioned from flint (Stone and Zender 2011:82-83). For example, on the Princeton Vase (Figure 3b), the Hero Twins appear as masked performers explicitly decapitating an Underworld God with axes marked with the characteristic parallel lines and dots of flint. Similarly, on the Dumbarton Oaks Tablet (Figure 3c), the young K'an Joy Chitam II appears as a Chahk impersonator. As noted by Karl Taube (1992:23), he wields an ophidian lightning axe, its surface also marked as flint. Elsewhere, the hammer-stones and knuckle-dusters wielded by Classic Maya boxers also carry markings of flint and stone (Taube and Zender 2009:180-194). Given the shared markings, it seems likely that the 'flint'-like sign in question is indeed meant to represent a tool or weapon fashioned from flint, albeit one without the characteristic sharp, serrated, or pointed edges evident on the flint sign proper. The most likely possibilities are a kind of hammer-stone, axe-head, or celt.

In this connection, the scene on Dos Pilas Panel 10 is of particular interest (Figure 4). Late Classic in style, but of uncertain date and attribution, the panel depicts an unknown ruler standing in profile, cradling a large bicephalic ceremonial bar in one arm: a strikingly

a

b

c

Figure 3. Flint iconography in Maya art and writing: (a) flint axe held by lightning god, Tikal Stela 21, A8; (b) flint axe held by masked Hero Twin, Princeton Vase; (c) flint axe wielded by K'an Joy Chitam as Chahk impersonator, Dumbarton Oaks Tablet (Schele and Miller 1986:275).

uncommon pose at a site whose public monuments are otherwise relatively uniform in their portrayal of rulers depicted frontally in dance (Houston 1993:88-94). From the upper end of the bar emerges a complex iconographic spelling of Ruler 1's name. A large stylized

serpent head provides a common rebus for "sky," while the head of K'awiil emerging from its jaws provides the theonym. Intriguingly, the customary celt sign in K'awiil's forehead (representing a shining axe blade) is here replaced by the characteristic zigzag, parallel lines, and dots of the 'flint'-like sign. As a result, all three of the elements of Ruler 1's name are present, suggesting that the panel depicts a (probable) descendant conjuring his illustrious forebear. While it is possible that the infixation of the 'flint'-like sign into K'awiil's forehead is but a playful space-saving device, it is also worth considering that it reveals an additional layer of the sign's meaning, making an equation of some kind between K'awiil (the personified lighting axe of Chahk) and the 'flint'-like sign.[4] Again, this might be taken to suggest that the sign denotes some sort of hammer-stone, chisel, or celt.

With respect to the significance of Ruler 1's name, here it is only recently that the study of Classic Maya names (onomastics) has developed sufficiently to contribute to this discussion. Specifically, gains in this area now make it possible to constrain the range of meanings of signs involved in the spelling of certain formulaic royal names. As Simon Martin and Nikolai Grube (2008:15) note:

> The names we associate with particular Maya kings and queens are only parts of much longer sequences of names and titles. Very often they are based on those of gods and other supernatural characters, the most common of which were K'awiil, the reptilian, snake-footed lightning bolt; Chaak and Yopaat, axe-wielding rain and storm gods; Itzamnaaj, the aged supreme deity of the sky; and K'inich, the cross-eyed sun god (also used as the honorific title 'Radiant'). Variants or aspects of these deities often appear in verbal forms—as in the 'god who does such-and-such'—usually in conjunction with features such as Chan 'sky' and K'ahk' 'fire.'

These points are discussed in detail elsewhere, and supported by a great deal of comparative evidence (see especially Colas 2003, 2004; Grube 2001, 2002; Houston and Stuart 1995; Zender 2009). Ruler 1's name emerges as an example of a common nominal formula involving an initial predicate, the term for "sky," and the deity name K'awiil. As a result, the name should carry a meaning roughly parallel to that of Jasaw Chan K'awiil of Tikal, which has been translated as "K'awiil that Clears the Sky" (Martin and Grube 2008:44) or K'ahk' Joplaj Chan K'awiil of Copan, translated as "K'awiil that Stokes the Sky with Fire" (Martin and Grube 2008:206). In other words, the initial element should be a verb (or predicate noun/adjective) that reflects some relevant action of the lightning god

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[4] See Martin (2006:156, Note 2) for the same point about **IXIM-TE'** conflations in Maya art and writing.
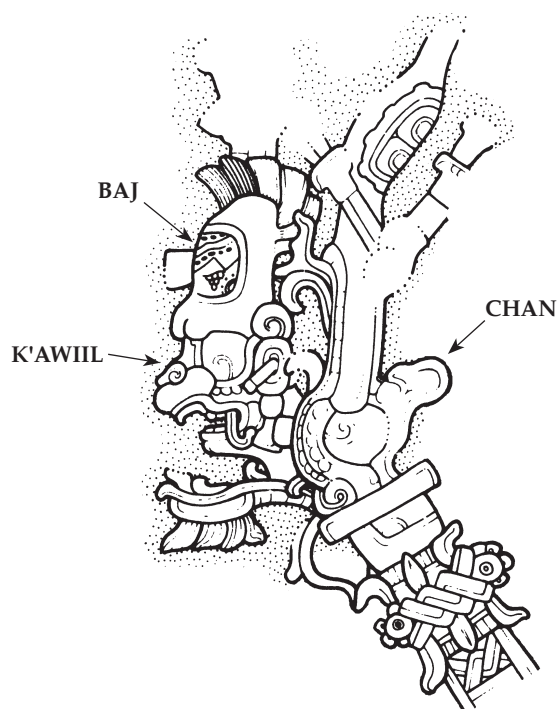
Figure 4. Iconographic spelling of Ruler 1's name, detail of Dos Pilas Stela 10 (Houston 1993:74).

K'awiil in the heavens.

Taking these two desiderata on board, what can be made of the syllabic **ba-la-ja** substitution for the sign most likely representing a flint hammer-stone, chisel, or celt? To begin with, it is important that we ask to what extent the **ba-la-ja** spelling equates with the value of its logographic substitute. This may seem a strange question to ask, for it is well known that spellings such as **a-ja-wa**, **k'a-wi-la** and **mu-wa-ni** directly substitute for the logographs **AJAW**, **K'AWIIL** and **MUWAAN**, respectively. Indeed, these and other substitutions are themselves the means by which many phonetic decipherments were initially realized (Stuart 1987). Yet it is important to recognize that other syllabic spellings elide signs and phonemes according to certain rules and conventions still under investigation. One such is haplography, an abbreviational convention whereby a given syllabic sign, or sequence of signs, is written only once when it should be written twice, as in **ka-wa** for *ka[ka]w* "chocolate" and **u-ne** for *une[n]* "baby" (Zender 1999:98-130, 2005:1).[5] Another is the frequent elision of word-final and preconsonantal consonants, such as **a-hi** for *ahii[n]*, **ba-la-ma** for *ba[h]lam*, **chu-ka** for *chu[h]ka[j]*, **na-wa-ja** for *na[']waj*, and **sa-ja** for *saja[l]*. Abbreviations of this kind are common in Maya writing, though limited

to a class of weak consonants including the glottal stop, voiceless spirants, liquids, nasals, and glides — i.e., *', h, j, l, m, n, w, y* (see Lacadena and Zender 2001:2-3; Zender 1999:130-142). Given these observations, it is worth considering that the **ba-la-ja** spelling is an abbreviation of *ba[b]laj* (if haplographic), or of *ba[']laj, ba[h]laj, ba[j]laj*, etc. (if merely eliding a weak syllable-final consonant), thereby accounting for our inability to find the form **balaj* in dictionaries.

Another kind of abbreviation frequently met with in Maya writing is the propensity for logographic spellings to abbreviate grammatical endings while syllabic spellings encode them more fully (Zender 2004:Note 83, 2005). Consider the various spellings of the name of Yax Pasaj Chan Yopaat (Figure 5), long ago collected by Floyd Lounsbury (1989). As with the variation in Dos Pilas Ruler 1's name considered earlier, when the verb root is indicated with the logograph **PAS**, the *-aj* grammatical ending can either be omitted (Figure 5a) or supplied in the form of syllabic **-ja** (Figure 5b).
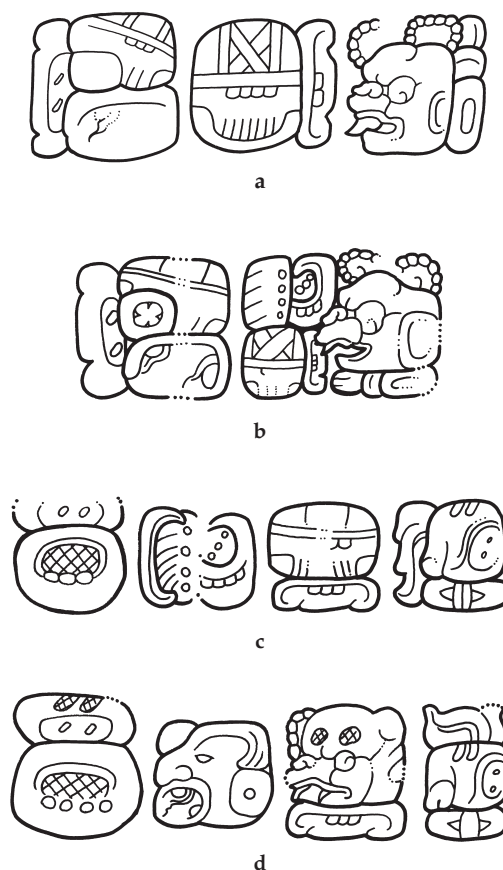
Figure 5. Various spellings of the name of Yax Pasaj Chan Yopaat: (a) **YAX-PAS CHAN-na YOPAAT-ti**, Copan Altar Q, F3-F4; (b) **YAX-PAS sa-ja-CHAN-na-YOPAAT-ti**, Copan Temple 21a Bench; (c) **YAX-pa sa-ja CHAN-na YOP-AT-ta**, Copan, SW Jamb of Temple 18; (d) **YAX-pa sa CHAN-na YOP-AT-ta**, Copan, NE Jamb of Temple 18.

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[5] Haplography is a technical term from philology and comparative studies of writing. It stems from the combining form of Gk. ἁπλό-ας (*haplo-*) "single" + -γραφία (*-graphy*) "writing" (*Oxford English Dictionary,* 2nd ed., 1989, *OED Online*: dictionary.oed.com).

Figure 6. Naranjo-area 'scepter' with **ba-ja CHAN-na-YOPAAT** royal name, K7966 (Grube 2004:Fig. 10).

Conversely, when this portion of the name is written entirely syllabically, the grammatical ending is usually indicated in the spelling **pa-sa-ja** (Figure 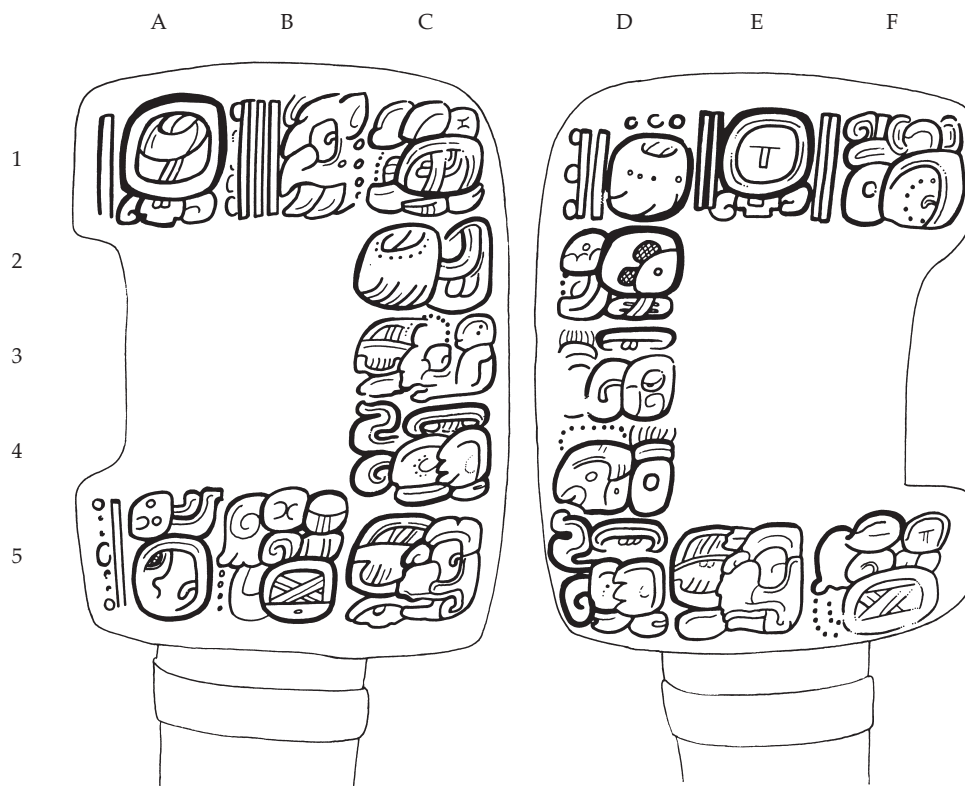5c), though there are also abbreviations along the lines of those discussed in the previous paragraph (**pa-sa**), where the final -*j* is not indicated (Figure 5d). Another relevant example is the distinction between logographic **JAN** (as indicated by occasional -**na** complements to this sign, as on Yaxchilan Lintel 10, B1) and **ja-na-bi** in the name of K'inich Janaab Pakal (see also Martin and Reents-Budet 2010:2, Note 2; Stuart 2005:37-39). Finally, the distinction between intransitive verbs supplied by logographs (**HUL**, **OCH**) and those written syllabically (**hu-li**, **o-chi**) provides a strikingly similar pattern, particularly when it is recognized that both forms are intended to convey *hul-i* and *och-i*, respectively. Given these observations, it is worth considering that syllabic **ba-la-ja** provides an explicit verbal suffix, perhaps -*aj* or even -*laj*, that is not present in the logographic spelling: another contributory factor to our inability to find a root of the form **balaj* in dictionaries.

To briefly recap the foregoing: **ba-la-ja** may not include all of the consonants necessary for the proper understanding of the linguistic form it represents, and for this reason targets of the form *ba*[*b*]*laj*, *ba*['']*laj*, *ba*[*h*]*laj*, *ba*[*j*]*laj*, etc., should be considered. Further, given that

logographic spellings can abbreviate derivational and inflectional morphology (e.g., **PAS**) whereas syllabic spellings typically include these features (e.g., **pa-sa-ja**), it should also be considered that the 'flint'-like sign in question may provide only the verbal root, which would perforce be either of the shape **BAL**, should the suffix in question be merely -*aj* (as with *pasaj*), or rather **BAB**, **BA'**, **BAH**, **BAJ**, etc., should the suffix in question be of the form -*laj* (as with *joplaj*).

A search of the dictionaries reveals precious little of relevance for **BAL**. There are certainly verb roots of this shape, including Proto-Ch'olan **bal* "to roll up" (Kaufman and Norman 1984:116) and Yukatekan **bal* "to cover, protect, hide" (Colas 2004:Note 49), but nothing supportive of either the iconic origin of the 'flint'-like sign or the semantic territory of Ruler 1's name. The same is true of most of the permissible abbreviations, including *bab*, *ba'*, *bah*, *bal*, *bam*, *ban*, *baw*, and *bay*. As we will see in a moment, only *baj* "to hammer" emerges as a viable candidate of the appropriate shape and relevant semantic criteria. But first it should be noted that we have at least one epigraphic context where the *baj* root appears to have been explicitly provided: an unprovenanced 'scepter' associated with the ruling house of Naranjo, Guatemala (Figure 6). This object came to light only ten years ago, and the lengthy name phrase at C2-C5 and

D5-E6 was quickly associated with the late 8th-century Naranjo king K'ahk' Ukalaw Chan Chahk (Martin and Grube 2000:80, 2008:80; Grube 2004:204). Nonetheless, Simon Martin (n.d.) has recently shown that the dates are perhaps best placed in the early 9th-century, likely providing the name of a new Naranjo king. He also notes that the initial royal name (at C2-C3) can be read as **ba-ja CHAN**-na-**YOPAAT** and is "clearly allied to the root *baj* "to hammer" isolated by Marc Zender, although the normal inflectional suffixes are again absent" (Martin n.d.:3).[6] Let us now turn to the considerable linguistic evidence for this verb root (see Table 1).

On the basis of these and other attestations, we can confidently reconstruct Proto-Mayan *baj* (Kaufman 2003:922), Proto-Tzeltalan *baj* (Kaufman 1972:116), and Proto-Ch'olan *baj* as transitive verbs carrying the primary meaning "to hammer."[7] The root emerges as an old and widespread one, helping to account for its numerous productive derivations in daughter languages. For instance, Chontal *bah* (*baj-e'* in its imperfective form) is a direct descendent of Proto-Mayan *baj*. In addition to serving as a productive verb, Chontal has derived from it the noun *bah* "a nail," the adjective *bah-el* "nailed," and the compound noun *baj-pam* "slap, blow to the head or nape of neck" (literally "a head-hammering"). The derived noun is itself the source of the derived transitive verb *bah-i(n)* "to nail."[8]

These derivations provide more than historical trivia, for in several cases the verb itself has undergone semantic broadening, narrowing, or shift. Yet in most cases the derived forms, established prior to the changes, reflect the original meaning "to hammer." Thus, while Yucatec *bah* can now mean "fuck" (a case of broadening), the derived agentive noun *h bàah* "carpenter" (literally "one who hammers, nails") and instrumental noun *x-bahab* "hammer" unambiguously reflect the original meaning. Similarly, while Colonial Yucatec *bah* apparently meant "to chisel" (a case of semantic narrowing), its derived instrumental noun *bah-ab* meant both "chisel" and "hammer, mallet." Indeed, across the family, the derived instrumental nouns—all formed directly from the verb by means of a -V*b* instrumental suffix and optional -V*l* relational suffix—*all* cue the primary meaning "hammer." These observations greatly strengthen the Proto-Mayan reconstruction of *baj* "to hammer."

The instrumental derivations also fall into natural groups indicating that, despite their pronounced structural similarity, they were nonetheless formed at different times in different Mayan languages. Thus, the Tzeltalan forms evidently descend from *baj-ob-il*, the Yukatekan forms from *baj-ab*,[9] and the Eastern Mayan forms from *baj-ib-al*. Unfortunately, the "hammer" term is not yet attested in Ch'olan, but we can largely

reconstruct its shape on the basis of historical evidence and known instrumentals in these languages. The most productive instrumental suffix in historical and modern Ch'olan languages was *-ib* (Kaufman and Norman 1984:106), and this is also the most common instrumental attested in the hieroglyphic script (Houston et al. 2001; Zender 2000). Nonetheless, inscriptions also provide evidence of the forms *chik-ab* "rattle" (Grube and Gaida 2006:214) and *laj-ab* "drum" (Houston et al. 2006:261), indicating that *-ab* must also be taken into consideration. Given that both *baj-ib* and *baj-ab* have some license from Eastern Mayan and Yukatekan, respectively, either could conceivably have been the form inherited by Proto-Ch'olan. But given Yukatekan *baj-ab* and Tzeltalan *baj-ob*, it seems more likely that the Lowland languages innovated (or shared) the *baj-ab* form, which was then conserved in Yukatekan but dissimilated to *baj-ob* in Tzeltalan. If so, then *baj-ab* may be the stronger candidate for the Ch'olan-Tzeltalan and later Ch'olan forms of "hammer."

Whether *baj-ab* or *baj-ib*, however, we now have a strong contender for the iconic origin of the 'flint'-like sign, the first of the two problems which have stymied earlier proposals for its decipherment. In the depiction of a hammer-stone (*baj-ab* or *baj-ib*), Classic Maya scribes seem to have found their solution to the representation

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[6] Several scholars have also identified the main sign at C4 and D5 on the Naranjo scepter with the 'flint'-like sign here under investigation (Bernal 2008:Figure 7; Macri and Looper 2003:269; Prager et al. 2010:75). But while visually similar, its contexts suggest that it is a different sign. For one thing, it is manifestly bipartite, uniting the signs for 'stone' with jagged-edged Edznab, while **BAJ** is unitary, with elements more specifically 'flint'-like (Martin n.d.). It also takes a -**ki** suffix on Copan Stela 49, either as phonetic complement or inflection (Martin n.d.), and while clearly able to function in the same predicate slot of verbal deity names as **BAJ**, examples on both the Naranjo scepter and the earflares from Palenque's Temple of the Inscriptions take **u**- prefixes (Bernal 2008:Figures 4, 9), though whether providing ergative pronouns or phonetic complements is difficult to say. Recently, Prager et al. (2010:75) have linked the **BAJ** logograph to a third 'flint'-like sign common on Classic Maya vessel texts, long ago recognized as an allograph of the syllable **ba** (MacLeod 1990:245-247, Figure 2). While it has certain characteristics in common with the **BAJ** sign, it too is rigorously divided into two parts, the rightmost of which has a serrated outline quite distinct from the canonical form of **BAJ**.

[7] My reconstruction of Proto-Ch'olan *baj* differs from Kaufman and Norman's *bäj* (1984:116). I accept their evidence for the velar -*j* (see Table 1, note a), but find their arguments for reconstructing a sixth vowel (*ä*) unconvincing. Neither Ch'ol nor Chontal show any sign of this vowel in their reflexes of Proto-Mayan *baj*.

[8] If this construction seems strange, consider that the English verb *to nail* is itself derived from the noun *nail* (*Oxford English Dictionary,* September 2010, *OED Online*: dictionary.oed.com).

[9] On the basis of comparative evidence and Colonial data, Modern Yucatec seems to have only recently innovated its *x*-instrumental prefix (see Bricker et al. 1998:365-366).

Table 1: *Baj* "to hammer" in various morphological guises[a]

Ch'ol	*baj*	tv.	*clavar*, to hammer, nail (Aulie and Aulie 1998:7)
	baj-a	tv.	*clavar*, to hammer, nail (Schumann 1973:76)
Chontal	*bah*	tv.	to nail
	bah	dn.	nail
	bah-i(n)	dtv.	to nail
	bah-el	adj.	nailed (Knowles 1984:405)
	baj-e'	tv.	*clavar, martillar, pegar con martillo*
			to nail, hammer, hit with a hammer
	baj-pam	cn.	*bofetada, coscorrón, cocotazo* [*cogotazo*]
			slap, blow to head or nape of neck (Keller and Luciano 1997:39)
Tzotzil	*bah*	tv.	lock, button, nail, strike
	bah	nc.	knock (infr.)
	bah-bah-bah	onom.	bang, bang, bang
	bah-lah-et	av.	pounding or hammering (nails)
	bah-ob-il	instr.	hammer (Laughlin 1975:77)
	baj	av.	nail, strike
	baj-b-on	av.	pounding (nails), chopping (trees), pecking (woodpecker)
			(Ringe 1981:62)
Col. Tzotzil	baj	tv.	*clavar, hincar ... clavos o estacas en pared*
			nail, drive (nails or stakes in a wall)
	baj-laj	av.	*ruido hacer asi*, clang
	baj-ob-il	instr.	*maza, martillo*, hammer, sledgehammer (Laughlin 1988:163)
Tzeltal	*bajel ta lawux*[b]	tv.	*clavar*, to hammer, nail (Slocum et al. 1999:10)
Col. Tzeltal	bagh	tv.	*clavar*, to hammer, nail
	bagh-bil-on	part.	*martillado, clavado*, hammered, nailed
	bagh-ob-il	instr.	*martillo*, hammer (Ara 1986:247[f.8r])
	bagh-lagh	av.	*hacer ruido*, make noise
	bagh-lagh z-cop	av.	*hablar alto*, speak loudly (Ara 1986:248[f.8v])
Yucatec	*bah*	tv.	nail; fuck
	bàah	apv.	nail; fuck
	h bàah	agn.	carpenter
	x-bahab	instr.	hammer (Bricker et al. 1998:24)
Col. Yucatec	bah	tv.	*escoplear*, to chisel (Ciudad Real 1929:128[f.40r])
	bah-ab	instr.	*escoplo; instrumento con que algo se enclava o hinca con golpe*
			chisel; tool with which something is nailed or sunk with a blow
			(Ciudad Real 1929:128[f.41v])
	bah-ab	instr.	*martillo, mazo*, hammer, mallet (Barrera-Vásquez et al. 1980:25)
K'iche'	*baj-ij*	tv.	to hammer
	baj-ib-al	instr.	hammer (Christenson 2003:15)

[a] In the forms given here, orthography generally respects the source, with the exception that I have omitted markers of implosion (') on *b*, and have segmented several forms (e.g., Chontal *baj-pam*) in order to facilitate analysis and comparison. In most of these languages, the choice of final *-j* or *-h* is purely orthographic; only Tzeltal (*-j*), Colonial Tzeltal (-gh), Colonial Yucatec (-h) and K'iche' (*-j*) preserve information bearing on the identity of the final spirant, which was clearly velar in all languages which preserve the *j/h* contrast. Grammatical abbreviations here and in Tables 2 and 3 are as follows: adj. (adjective); agn. (agentive noun); apv. (antipassive verb); av. (affective verb); caus. (causative); cn. (compound noun); dn. (derived noun); div. (derived intransitive verb); dtv. (derived transitive verb); instr. (instrumental noun); iv. (intransitive verb); mpv. (mediopassive); n. (noun); nc. (numerical classifier); onom. (onomatopoeic); part. (participle); tv. (transitive verb).

[b] Note that Tzeltal *lawux* "nail" (s.) is a borrowing from Spanish *clavos* "nails" (pl.); the initial consonant cluster (impermissible in Tzeltal) could not be borrowed, and sixteenth-century Spanish *v, o*, and *s* were represented by Tzeltal *w, u*, and *x*, respectively. As with other borrowed nouns—e.g., *patux* "duck" from *patos* "ducks" and *wakax* "cow" from *vacas* "cows"—Tzeltal adopted the Spanish plural as a singular because it ended with a preferred final consonant (Radhakrishnan and Zender n.d.).

of the abstract verbal action *baj* "to hammer."[10] It may well be that the productive nature of the instrumental derivation of *baj-ab* (or *baj-ib*) from *baj* itself provided the motivation for this development, inasmuch as there are several other logographs which appear to have had similar origins. Thus, **CH'AK** "to cut, chop" (Orejel 1990) clearly depicts a stone axe set into a wooden handle, and most likely originates with the Ch'olan instrumental noun *ch'ak-ib* "axe."[11] Another example is **T'AB** "to ascend, go up" (Stuart 1998:409-417), clearly depicting a profile set of steps with ascending footprint, and likely deriving from the instrumental noun *t'ab-ib* "ladder, stairs."[12] Given these patterns, and the structural and semantic evidence set forth above, it therefore seems most likely that the 'flint'-like sign carried the logographic value **BAJ**.

We can now turn to the verbal inflection of *baj* "to hammer" in the context of Ruler 1's name. If **BAJ** is indeed all that is provided by the logograph, then many spellings of the verbal portion of this name evidently abbreviate the verbal inflection entirely. In the syllabic spellings, on the other hand, **ba-la-ja** apparently abbreviates the final *-j* of the verbal root, but explicitly provides a *-laj* suffix. The question now becomes: what is the nature of this suffix? Although superficially similar to the *-(V₁)l-aj* of the intransitive positional (also represented by the syllables *-la-ja* in the script), there is no evidence that *baj* was ever a positional root. Moreover, none of the attested PREDICATE-SKY-GOD names in Classic inscriptions include positional verbs. Where the initial element is a verb, it is usually a transitive root, though frequently appearing in a detransitivized or antipassive form (Grube 2002). Thus, although this suffix has occasionally been linked to the attested positional ending (Boot 2009:31; Stuart 2001:1-2), there are good reasons to consider other possibilities.

A striking feature of the Tzeltalan derivations of *baj* listed above are the forms incorporating an evident *-laj* suffix:

Tzotzil	av.	*bah-lah-et*
		"pounding or hammering (nails)"
Col. Tzotzil	av.	*baj-laj*
		"clang"
Col. Tzeltal	av.	*bagh-lagh* [*baj-laj*]
		"make noise" (lit. "hammering")
	av.	*bagh-lagh zcop* [*baj-laj s-k'op*]
		"speak loudly" (lit. "hammering his-speech")

Robert Laughlin explicitly identifies the Colonial and Modern Tzotzil forms as "affective verbs," which he defines as follows:

> Affective verbs, occurring most frequently with positional and onomatopoeic roots, but also with transitive verb roots, are declined like intransitive verbs, but only in the continuative aspect. Two forms, *-luh* and *-lah*, lack infinitives. Affective verbs are used

characteristically in narrative description with a certain gusto, a desire to convey a vivid impression. They have dash. (Laughlin 1975:26)

As an example of such a verb, consider the following sentence from a Tzotzil tale collected and translated by Laughlin (1977:182) and analyzed by Ringe (1981:61):

x-puj-laj-et   *xa*   *la*   *tz-sibtas-van*
nt-CRASH-af[13]   enc   enc   icp-FRIGHTEN-intrans
"Crashing about, it frightens people"

The sentence comes near the climax of the story, where we can imagine the added "dash" of a well placed affective verb having the greatest rhetorical effect. Ringe (1981:61) notes in explanation that "unlike other Tzotzil verbs, affect verbs can only be used in the neutral aspect, which is marked by the prefix *x-* ... they are intransitive and take no indirect objects; consequently they cannot occur with ergative prefixes or passive or benefactive suffixes." Further, he observes that:

> At least one semantic property is common to all affect verbs: they are vividly descriptive. A considerable number of these verbs denote loud or noticeable noises (gurgling, hissing, clucking, howling, banging, and the like), salient physical characteristics (baldness, fatness, length of hair, facial expressions, and so forth), distinctive positions of the body (leaning, bending over, sitting with legs stretched out, etc.), or periodic motion (circling, rippling, flickering, running and ducking, and so on) ... These are all well adapted to colorful description. (Ringe 1981:62)

These descriptions of the diverse origins (from multiple root classes, including onomatopoeic roots), restricted syntactical roles (inflection as intransitive verbs, but only in neutral/continuative aspect, inability to take indirect objects, ergative prefixes, or status

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[10] Prager et al. (2010) entertain a different sign as 'hammer,' but the linguistic evidence is wanting, limited only to Yucatec, and even then rather equivocal, for the primary sense of Yucatec *bax* is "beat, tamp down, harden," as shown by its derivations *báax* mp. "beat, harden," *h bàax* agn. "person who hammers or packs earth," *x-baxab* instr. "steam roller," and *babaxkil* adj. "tight, packed (earth floor in house)" (Bricker et al. 1998:27). The root has apparently broadened to envelop other beating actions, such as hammering, perhaps influenced by **baj* "to hammer." Given the iconicity of the sign under discussion, clearly representing some kind of worked stone, I prefer instead to see its origin in the term *bax* "quartz" which the authors have noted in Western Mayan languages. To their sources can be added Ch'ol *bax* "shiny rock" (Attinasi 1973:243).

[11] For semantics see Ch'olti' chaquib [*ch'ak-ib*] "hacha (axe)" (Morán 1695:123); for the initial glottalized consonant see Ch'orti' *ch'ahk-ib* "machete" (Wisdom 1980:713).

[12] See Ch'orti' *t'ab-ib* instr. "ladder, stairs" (Hull 2005:107).

[13] Although Ringe's interlinear analysis may suggest that *-laj-et* is to be understood as a single affective [af] suffix, elsewhere he is more explicit: "the suffixes *-et*, *-laj*, and *-luj/-lij* [are all] used to form affect verbs; *-laj* and *-luj/-lij* can only be suffixed to roots, but *-et* can also be suffixed to affect verbs that end in *-laj* or exhibit *-VC₂* reduplication" (Ringe 1981:62).

suffixes), and highly descriptive nature of Tzotzil affective verbs are in broad agreement with the structure and function of affectives in other Mayan languages. Ch'ol affectives are likewise intransitive, do not inflect for aspect, and require no stem-forming status suffixes (Coon 2004:52-53, 2010:205). Similarly, Itzaj affective roots are polyvalent (including onomatopoeic roots) and are inflected in the antipassive voice like active verbal nouns (meaning they take no direct objects apart from generalized incorporated ones), though they differ in accepting status suffixes and being inflected for aspect (Hofling and Tesucún 2000:60-61). For these reasons, affectives lend themselves particularly well to translation as gerunds (e.g., gurgling, hissing, clucking, as seen above). As in Tzotzil, Yucatec affectives highlight "sensory qualities or perceptions, such as texture, shape, sound, and ... repetitive actions" (Lois and Vapnarsky 2003:12), while Itzaj affectives also "typically involve the senses, indicating textures, sounds, and visual sensations" (Hofling and Tesucún 2000:60). Across Mayan languages, in addition to accepting various derivational suffixes, affective roots can be modified in a number of ways: reduplication (of both segments and entire roots), suffixation of the initial consonant of the root before vowel-initial affective suffixes (e.g., Tzotzil *baj-b-on*, noted above), and lengthening of the root vowel (e.g., Hofling and Tesucún 2000:10; López 1997:170-171; Pérez and Jiménez 2001:151-155; Ringe 1981:162). Affect verbs can even be repeated for dramatic effect (Ringe 1981:163), as in the Tzotzil phrase *bah-bah-bah* "bang, bang, bang." Given these associations, it seems likely that Classic Mayan *baj* was itself an onomatopoeic root, reflecting the sound and repetitive motion of hammering.

Having outlined the special nature of affective verbs in Mayan languages, it is time to explain the striking similarity of Tzeltalan **baj-laj* to Classic Mayan *baj-laj*, for it is tempting to consider them equivalent, and to render a translation of the name of Bajlaj Chan K'awiil as "K'awiil is Sky-Hammering" (assuming object incorporation) or "K'awiil is Hammering in the Sky" (should Chan instead provide the locative in its usual position between intransitive verb and subject). Ch'olan and Tzeltalan languages are closely related—indeed, they are more closely related to one another than to any other Mayan language—but in order for them to share one and the same *-laj* suffix, it must go back to their common ancestor, Proto-Ch'olan-Tzeltalan. Is there any indication that this could be the case?

Certainly *-laj* has significant time-depth in Tzeltalan. Given its presence in both Tzotzil and Tzeltal, Kaufman (1972:144) long ago reconstructed the Proto-Tzeltalan affective suffixes **-laj-an* and **-laj-et*. He also presented a nuanced study of Tzeltal semantics, pointing out that the *-laj* affective usually carries connotations of either "several objects" or "several repetitions" (Kaufman

Figure 7. K'ahk' Joplaj Chan K'awiil (**K'AHK'-jo-po la-ja-CHAN-na K'AWIIL**), Copan Stela N (drawing by Nikolai Grube).

1971:61). Similarly, in his survey of Tzotzil affectives, Ringe (1981:71-78) found that the *-laj* affective is the least common of several affective suffixes, and that it occurred on archaic vocabulary. The *-et* suffix, by contrast, is both common and productive. This pattern led Ringe to conclude that "the formations in $-VC_2$ and *-laj* are clearly older, and the addition of the highly productive *-et* to these old types must be an innovation. In both cases the newer formation has become the more productive one, leaving the older, simpler type behind; *-laj* and $-VC_2$ are probably sliding toward relic status" (Ringe 1981:74). Evidence from an internal reconstruction of Tzotzil therefore suggests that Proto-Tzeltalan **-laj-et* is itself an innovative form presupposing an earlier, Pre-Proto-Tzeltalan **-laj* proper. Further back than Pre-Proto-Tzeltalan we cannot take *-laj* on the basis of comparative evidence from modern Mayan languages alone.[14] Nonetheless, we are quite close to Proto-Ch'olan-Tzeltalan at this point, and all that separates us from certainty is the absence of a clearly attested *-laj* affective in any of the Ch'olan languages.

Does Ruler 1's name provide Ch'olan *-laj*? Although it is tempting to reconstruct this form (and its attendant semantics) to Proto-Ch'olan-Tzeltalan on the basis of its probable presence in this name, it would in fact constitute circular reasoning to identify Classic *baj-laj* as an affective (solely on the strength of its similarity

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[14] It is worth noting that Ch'olti' affectives in CVC-CVC-*na* (< **-n-aj*), Ch'orti' affectives in CVC-V*r-na* (< **CVC-Vl-n-aj*), and Chontal affectives in CVC-CVC-*n-an/-i* and CVC-V*l-n-an/-i* (MacLeod 1987:Figures 6, 16) hint at an original Proto-Ch'olan affective in CVC-V*l*, later suffixed by an innovative and productive **-n*, possibly related to Proto-Tzeltalan **-an* (Kaufman 1972:144).
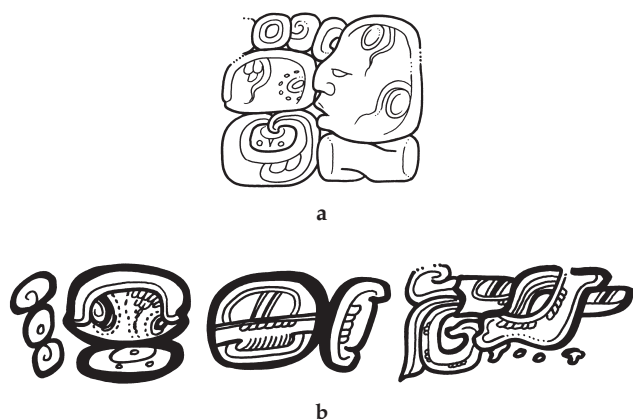
Figure 8. Affective derivations of *yuk* "to shake": (a) **yu-ku-[la]ja-KAB-nu**, Palenque, T.XVIII stuccos (after Fernández 1954:Fig. 36 and Schele and Mathews 1979:Cat. 439); (b) Yuklaj Chan K'awiil (**yu-ku-la CHAN-na K'AWIIL-la**) of Hix Witz, unprovenanced codex-style plate, K3636 (after Robicsek and Hales 1981:Table 2a).

to Tzeltalan *baj-laj*) and then to use it as evidence that affectives of this shape are present in Ch'olan languages (by virtue of the identification of this one form in Classic Ch'olti'an as an affective). Thankfully, however, we are spared this logical trap by the presence of other *-laj* affectives in hieroglyphic inscriptions. Considered in tandem, they lend considerable support to the contention that *-laj* does indeed hearken back to Proto-Ch'olan-Tzeltan.

Jop

We have already seen one candidate affective in the name of Copan's Ruler 14, K'ahk' Joplaj Chan K'awiil (Figure 7). As a strong consonant, *-p* is not elided in syllabic spellings, so both verb root and suffix are fully represented by the syllables **jo-po la-ja**. Simon Martin and Nikolai Grube (2000:206) have convincingly connected *jop* to a Yucatec transitive root of the same shape meaning "revive fire"—its specific sense of "stoking" or "blowing" on a fire is well reflected in the Yucatec instrumental derivation *x-hóop-s-ah* "bellows" (see below).[15] Considered in tandem with what they take as a fronted/focused noun *k'ahk'* "fire," they offer the translation "K'awiil that Stokes the Sky with Fire" (see also Grube 2001:75-76). As Martin and Grube (2000:206) have also noted, the Classic name is strikingly similar to that of the Colonial Yucatec deity Hopop Kaan Chak "*El-Chak-que-ilumina-el-cielo* (Chahk who lights up the

Sky)" (Barrera-Vásquez et al. 1980:232).

Given the similarity to the attested deity name, this translation must come relatively close, and yet surprisingly little attention has thus far been paid to the precise identity of the verbal suffixes on either the Classic or Colonial names. The $-VC_2$ reduplication in Hopop Kaan Chak (< *jop-op ká'an cháak*) suggests an affective derivation (Ringe 1981:62), and we already have considerable reason to suspect that K'ahk' Joplaj Chan K'awiil involves affective *-laj*. Intriguingly, although the *jop* root revolves around the meanings "burn" and "light (fire)" in all of its morphological guises, it has especially vivid meanings in the affective (Table 2).

Colonial Yucatec hop-lah initially seems quite promising, but it must reflect distributive *-lá'aj* "one after another," as in the Yucatec passive distributive *hó'op-lá'ah*. Intriguingly, the transitive/causative forms all relate narrowly to the action of lighting a fire, whereas the affectives refer to memorable and dynamic aspects of flame, which can "catch/take fire" in a loud puff, "put forth flash(es) of lightning or flame(s)" and "flare up, flicker." As Laughlin put it "they have dash." In light of the probable Ch'olan-Tzeltalan affective suffix, *-laj*, and the demonstrable affective affiliations of Yukatekan *jop*, we might therefore be encouraged in the following translations of the Copan king name:

> K'ahk' Joplaj Chan K'awiil
> "Fire is (the) Sky-Flaring K'awiil"
> or "Fire is K'awiil Flickering in the Sky"

Because of the special intransitive character of affectives, it is unlikely that *k'ahk'* "fire" can be understood as an object of the verb, fronted or otherwise (Colas 2004:128-130). But it also fails to take the attested *-al* suffix of *k'ahk'* when functioning in a modifying capacity, rendering it unlikely that *k'ahk'* serves as the adverb "fiery" (cf. Colas 2004:135). Given these considerations, *k'ahk'* is best seen as a noun in either a stative/equational or appositional relationship with the following affective verbal phrase. I think the former most likely, reflected in the translations above, though the latter remains a possibility that could be represented as "He is Fire, He is Sky-Flaring K'awiil" or "He is Fire, He is K'awiil Flickering in the Sky."

Yuk and *yuhk*

Another likely affective was first pointed out by David Stuart (2001) in the context of one of the fallen stucco glyphs from Palenque's Temple XVIII (Figure 8a). As

[15] Unfortunately, there are no relevant Ch'olan-Tzeltalan cognates beyond (possibly) Ch'olti' hopmez (< *jop-m-es*?) "*tostar tortillas* (toast tortillas)" (Morán 1695:168). Nonetheless, the unambiguous presence of this root in the similar Colonial Yucatec name, and the consideration that it has affective derivations in all of the Yukatekan languages, indicates a substantial time-depth which may well have made it available to Classic Ch'olti'an speakers.

Figure 9. Yukbil Chan K'awiil, unprovenanced Chochola style bowl (after Coe 1982:64).

Table 2: *Jop* "to burn, light (fire)" in various morphological guises

Col. Yucatec	hop-z-ah kak	caus.	to blow, to light the fire
	hop-lac	av.	to put forth a flash of lightning or flame
	hop-ba	av.	to burn putting forth flames
	hop-lah	div.	it burns, is burning (Heath de Zapata 1980:262-263 [208v])
Yucatec	*hop*	tv.	revive fire
	hóop	mpv.	light up (fire)
	hop-bal	av.	take fire
	hop-k'al-áan-kil	av.	flicker (fire)
	hó'op-lá'ah	div.	be lighted one after another
	x-hóop-s-ah	instr.	bellows (Bricker et al. 1998:111)
Itzaj	*jop-ik*	tv.	light
	jop-bil	part.	lit
	jop-baj	av.	catch fire (Hofling and Tesucún 1997:320)
Mopan	*joop*	iv.	*arder*, to burn
	jop-lem-ac	av.	*llamarada*, to flare up, blaze suddenly (Ulrich and Ulrich 1976:108)

Table 3: *Yuk* and *yuhk* "to tremble, shake" in various morphological guises

Ch'ol	*yujk-un*	tv.	*sacudir (planta, arbol)*, to shake (plant, tree)
	yujk-el	n.	*temblor*, earthquake, tremor (Aulie and Aulie 1998:160)
Ch'orti'	*yujk-i*	tv.	agitate, move around, shake
	yujk-u	tv.	swing, move, rock, swing, shake
	yujk-b-ar	n.	earthquake (Hull 2005:117)
Tzotzil	*yuk'-el*	tv.	*agitar, sacudir*, to wave, stir, shake
	yuk'-laj-et	av.	*se agita (el mar)*, to get rough (sea) (Delgaty and Ruíz 1978:235)
	yuk'-lah-et	av.	slapping (wave), careening (car) (Laughlin 1975:390)
Col. Tzotzil	yuk'-et	av.	make small waves (Laughlin 1988:337)
Col. Tzeltal	yuc-ab	n.	*eco*, echo
	yuc-av-an	av.	*sonar las cosas que hacen eco*, for echoing things to sound
	yuc-lagh-an	av.	*turbarse el agua con viento*, for wind to disturb the water (Ara 1986:f.55v)
Yucatec	*yúuk*	n.	agitation
	yúuk	apv.	shake, agitate
	yúuk-bal	av.	shake, be agitated
	yúuk-t	dtv.	shake, move
	x-yúuk-ub	instr.	agitator (Bricker et al. 1998:318)
Mopan	*yuk'-laj*	iv.	*temblando*, shaking
	yuk'-laj	n.	*terremoto*, earthquake (Kaufman 2003:1286; Ulrich and Ulrich 1976:254)

a strong consonant, *-k* is not elided in syllabic spellings, so both verb root and suffix are fully represented in the spelling **yu-ku-[la]ja-KAB-nu**.[16] Stuart convincingly linked the first two syllables to the widespread verb root *yuk/yuhk* "to tremble, shake" (see below), but while he interprets *-laj* as a positional suffix, this causes difficulties for the root identification, and it is worth considering that it represents another example of the *-laj* affective instead.[17] An affective sense for *yuk* is widely-attested in both Ch'olan-Tzeltalan and Yukatekan languages (Table 3).

On the basis of these cognates, Kaufman has reconstructed both Proto-Mayan **yuk* tv. "to shake" (2003:1286) and Proto-Ch'olan **yuhk* iv. "to tremble,

shake (of itself)" (Kaufman and Norman 1984:137).[18] As with *baj-laj*, the Tzeltalan affectives in *-laj*, *-laj-et* and *-laj-*

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[16] On the basis of a sketch in Fernández and Berlin (1954:Figure 26), it seems clear that the **-nu** broke away from this block sometime after its initial discovery and recording (Zender 2007).

[17] As Stuart (2001:2) notes, *yuhk* is "not presently attested" as a positional.

[18] Kaufman and Norman (1984:137, Item 659) note an absence of Tzeltalan cognates. Yet despite the unexpected final consonant of the forms above, their identical semantics and shared grammatical roles argue otherwise, particularly given Mopan *yuk'-laj*, which Kaufman (2003:1286) now accepts as a cognate. A sporadic **-k > -k'* change seems indicated, perhaps motivated by onomatopoeia.
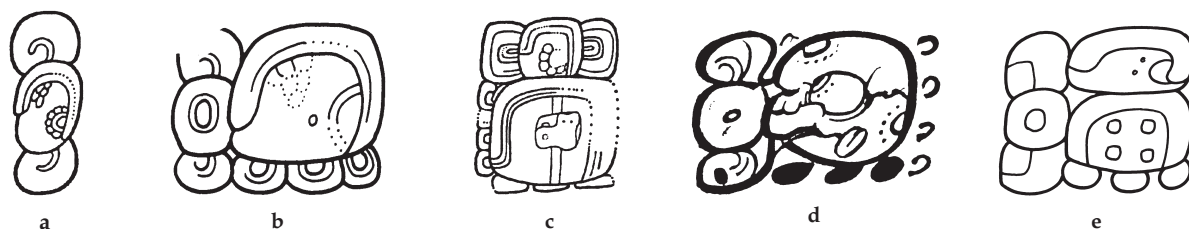
Figure 10. The traditional Yuhknoom title of the Snake polity: (a) **yu[ku]**, La Corona HS 2, Block X, pB1a (Martin 1996:Fig. 4b); (b) **yu[ku]-no**, DPL HS 4, N1-N2 (Martin 1996:Fig. 4e); (c) **yu[ku]-no-ma[CH'EEN]**, El Peru St. 33, pA3b (drawing by Peter Mathews); (d) **yu-[ku]no-ma**, Plate from Tomb 4, Structure 2, Calakmul (drawing by Simon Martin); (e) **yu-ku-no-ma**, unprovenanced vessel, Museum zu Allerheiligen, Schaffhausen, Switzerland (after Prager 2004:Fig. 11).

an (note also *-ab* and *-aw-an*) allow us to trace back this linked form and meaning to at least Pre-Proto-Tzeltalan. While the transitive forms (originally *yuk*, later rederived as *yuhk* in the Ch'olan languages) all mean "to shake, move," the intransitive affectives (all built directly on the original root, *yuk*, with the exception of Yucatec, whose forms in *yúuk* evidently stem from earlier **yuhk*) carry the sense of repetitive, continual action, accompanied by the visual sensations and sound of 'shaking.' With this in mind, we can propose the transliteration *yuk-laj kabaan* for the Palenque glyphs (Figure 8). As we cannot be sure that the block is not part of a verbal deity name or similar longer phrase, or even that 'earth' represents the subject of the verb rather than a location or incorporated object, there are a number of possible translations.[19] The simplest is "the earth shakes" or "the earth is shaking," in broad agreement with Stuart's reading (2001:2), but "earth-shaking" or even "shaking on the earth" should remain open to consideration.

Importantly, this is not the only glyphic attestation of the *yuk* root, which turns out to be productive in several script settings. An additional affective example appears on an unprovenanced codex-style plate with ties to the ruling line of Hix Witz (Robicsek and Hales 1981:Table 2a; Martin and Reents-Budet 2010:Note 5). The context is a PREDICATE-SKY-GOD name remarkably parallel to those we have seen before, and clearly spelled **yu-ku-la CHAN**-na **K'AWIIL**-la (Figure 8b). Although it is possible that the spelling targets a form like *yu(h)k-al*, this would be difficult to motivate given our present understandings of the root, and given the previously-discussed form at Palenque, as well as several similar forms elsewhere, *yuhkla[j]*, with abbreviated final velar, emerges as the far more likely rendering.[20] Parallel to the name of Dos Pilas Ruler 1, the name of this otherwise unknown Hix Witz ruler can therefore be rendered Yuklaj Chan K'awiil and translated as "K'awiil is Sky-Shaking" or "K'awiil is Shaking in the Sky."

Yuk appears in a different morphological guise on an unprovenanced Chochola style vessel (Coe 1982:64). Another verbal deity name, though with the somewhat divergent form **yu-ku bi-la K'AWIIL**-la, Yukbil K'awiil (Figure 9), it apparently omits the customary

"sky" element, and takes the novel suffix *-bil* (perhaps *-biil*). Kaufman and Norman (1984:95-101) long ago reconstructed a Proto-Ch'olan perfect passive participle **-bil* on the basis of cognates in all four of the Ch'olan languages. This form has also been reconstructed for Proto-Tzeltalan (Kaufman 1972:142), and we have seen one of its descendants in Colonial Tzeltal bagh-bil "hammered, nailed." Yukatekan languages have a cognate suffix *-bil*, which appears as a passive participle in Itzaj, and which we have seen in Itzaj *jop-bil* "lit." According to Kaufman and Norman (1984:95-101), Proto-Ch'olan formed its perfect passive participle by directly suffixing **-bil* to the CVC root. If this is indeed the correct analysis of the spelling on the Chochola vessel, then the name might be translated "Shaken K'awiil" or "K'awiil has Shaken." Importantly, the *yuk-bil* form also provides another indication (complementary to the affective forms already noted) that Classic Ch'olti'an still had access to the original CVC root (or, at least, a fossilized form of the participle), and was not limited to the *h*-infixed form *yuhk*.[21]

That the complex form was indeed present, however, is strongly suggested by the well known nominal element or title Yuhknoom, carried by several kings of the Snake polity, although receiving its greatest variation and elaboration in the name of the long-lived monarch Yuhknoom Ch'een II of Calakmul (Martin 1996, 1997; Martin and Grube 2008:108-109). The element is most common in the highly-abbreviated form **yu[ku]** (Figure

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[19] An additional complication is the form *kabaan,* which may or may not narrowly reference 'earth.' Possibly there is a linkage to the well known Colonial Yucatec day name Caban 'Earthquake.'

[20] Although their contexts are less clear, there are unambiguous **yu-ku-la-ja** spellings in Naj Tunich drawing 88 (Stone 1995:Figure 7-3) and on an unprovenanced gadrooned red-on-cream vase (K6394). A parallel to the latter appears on the similar vessel K6395, there abbreviated as **yu-ku-ja**.

[21] For another potential example of this participle, see the name of the early ninth-century Ruler X of Caracol: **K'INICH**-?-**bi-li YOPAAT-ti**. Although nicknamed K'inich Toobil Yopaat, it has recently become clear that the key verbal element is an undeciphered sign (Martin and Grube 2008:98), presumably a logograph. Whatever its value, it may provide a CVC root derived as a *-bil* participle.

10a), representing the verb root alone. It also appears in the somewhat less abbreviated form **yu[ku]-no** (Figure 10b). Nonetheless, it is on the more complete spellings that our understandings of the title depend. Among these are **yu[ku]-no-ma**, often seen conflated with **CH'EEN** (Figure 10c), though occasionally also in a glyph block of its own, with minimal conflation (Figure 10d). One particularly clear example, without any conflation, was noted by Christian Prager (2004) on an unprovenanced vessel in a public collection in Switzerland (Figure 10e). As a result of these spellings, the broad outlines of the form have been known for some time, though its significance has remained more elusive (see Esparza and Pérez 2009:10; Martin 1997:858). One remaining formal question concerns whether or not there is compelling linguistic evidence for us to depart from the conservative transliteration *yuknoom* (Martin and Grube 2008:108). I believe the complex root *yuhk* is motivated on the basis of the apparent *-n-oom* suffix provided by the syllables **-no-ma** in fuller spellings, and best analyzed as the syncopated *-(oo)n* antipassivizer of non-CVC root transitives (Lacadena 2000; Zender 1999:121), followed by the well known agentive suffix *-oom* (see also Wichmann and Lacadena n.d.:33-34). In Ch'olan-Tzeltalan and Yukatekan languages, agentives cannot be formed directly from CVC root transitive verbs, but must be detransitivized first (in this case with an antipassive suffix). For instance, compare Yucatec *bah* tv. "to nail" with its antipassive (*bàah*) and agentive (*h bàah*) derivations in Table 1. Epigraphic examples of this process include the Copan title Kohknoom "guardians," formed from the non-CVC root transitive verb *kohk* "to take care, protect, keep" (Kettunen and Helmke 2008:127; Lacadena and Wichmann 2004:145) and the Cancuen title Ak'noom "giver," formed from the non-CVC root transitive verb *ak'* "to give, put" (Wichmann and Lacadena n.d.:33).[22] Considered in tandem with the widespread Ch'olan non-CVC transitive root *yuhk* "to shake, move," I suggest that the traditional Snake polity title Yuhknoom signified "shaker, mover."[23]

Concluding remarks

As so often in Maya epigraphy, this lengthy paper had its origin in the modest attempt to decipher a single Maya logograph: the "hammer" sign **BAJ**. But just as a tapestry is unraveled by tugging at a single loose thread, so too does even the most cursory pulling at **BAJ** cause numerous interwoven elements to tumble forth. Among these were a necessary discussion of Classic Maya orthography and its abbreviational conventions (though here much more remains beneath the surface), the discovery of a set of Classic Ch'olti'an affective verbs (*baj*, *jop*, and *yuk*) and a perfect passive participle (*-bil*), and increasingly nuanced understandings of the grammatical role of the *-oon* antipassive suffix. That such detailed insights of an ancient writing system are

even possible is a testament not only to the ingenuity of Classic scribes, but also the indefatigable researches of epigraphers and Colonial and modern speakers and students of Mayan languages, whose work I have leaned on heavily throughout the research and writing of this paper. I hope I have shown that, despite the necessity of a primary reliance on the patterns of epigraphic data, the Classic form of the language did not exist in a vacuum. Rather, it stands in complex and interwoven relationships with the whole family of Mayan languages, all of which continue to be crucial to our continuing endeavor to comprehend Classic Maya writing.

This paper has by no means exhausted the potential of an affective analysis of epigraphic contexts of *-laj*. There yet remain several key verbal names, titles, and active verbs taking a suffix of this shape. Although presently opaque—either due to undeciphered signs, glyphic abbreviations, or both—I expect that at least some of them will lend themselves to interpretation as affectives should the possibilities narrow with new discoveries and interpretations.[24] Nonetheless, I hope to have shown the promise of this analysis, and look forward to the work of colleagues, which will undoubtedly extend and modify the proposals set forth above.

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[22] The *-oon* antipassive of non-CVC root transitives is itself productive apart from the compounds discussed here. The active antipassive *uk'uun* (< **uk'-oon*) "drinks" can be seen on Piedras Negras Panel 3 in the spelling **u-UK'-ni** (Zender 1999:121, 207) and on La Corona HS 3, Block VIII, in the spelling **u-k'u-ni** (David Stuart, personal communication 2008). In the modern languages, vowel-initial verbs such as *uk'* "to drink" and *ak'* "to give" are regarded as non-CVC, as are *h*-infixed forms such as *yuhk*.

[23] If this is the correct analysis, then previous explanations of the **yu-ku-no-ma** sequence predicated on a speculative CVC-root transitive verb **yuk* "to yoke, tie together" (MacLeod in Reents-Budet 1994:130; Wichmann and Lacadena n.d.:33), isolated from Yucatec *yukache'* "yoke to tie beasts together" (Barrera-Vásquez et al. 1980:981), must be rejected on the basis of root shape, even if correctly analyzed.

[24] Most compelling is the (probable) K'ahk' Taklaj Chan Chahk portion of the lengthy series of royal names carried by Itzamnaaj K'awiil of Naranjo (see Martin and Grube 2008:82-83). Yet despite the clear **TAK** logograph in this name on Naranjo Altar 2, F4-E5 (Skidmore 2007:Figure 1), forms with **-la** are all eroded to varying degrees (e.g., Naranjo St. 12, G13-F14, St. 14, A5-A6 and D11-C12, and St. 35, E4-F4), as is a related name at Caracol (see Grube 2002:Figure 15), and the verbal portion might as easily be read **tzu-la** as **TAK-la** (Simon Martin, personal communication 2008). Further complicating the issue are what appear to be clear **tzu** signs in parallel FIRE/RED-PREDICATE-SKY-GOD names on ceramics (e.g., K4572, K4669, K4997). Either there is some graphic convergence between **tzu** and **TAK**, or we are dealing with two sets of similar affective names perhaps involving *tak* "dry up" (Hull 2005:103; Kaufman 2003:494-497) and *tzu'*, *tzuh, tzuj*, etc. As another example, Tokovinine and Fialko (2007:Note 4) have recently pointed out a probable affective FIRE-PREDICATE-SKY-GOD name at Ek Balam (e.g., Misc. Monuments 4 and 5, and Capstone 10; see Lacadena 2002), though here complicated by the undeciphered 'upturned vase' sign.

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The Western Sun: An Unusual Tzolk'in – Haab Correlation in Classic Maya Inscriptions

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This paper examines several curious aberrations in the correlation between the Classic Maya tzolk'in and haab cycles, which may point to a previously unidentified way of counting haab or solar days that differed from the one used in most Classic Maya inscriptions. A potential cultural significance attached to this rare correlation system will also be discussed.

It has become clear in the last decade or so that the issue of the correlation between the tzolk'in—the 260-day cycle—and the haab—the 365-day solar year—in so-called Calendar Round dates cannot be reduced to a choice of year bearers or tzolk'in days on which the beginning of the haab year may fall. While it has been demonstrated that all four possible combinations of year bearers, or Calendar Styles 1 through 4 as Graña-Behrens (2002:80-101, Table 35, 37) has termed them, were in use during the Classic Period, some apparent deviations from the common Style 1 turn out to be unrelated to the starting day of the haab year. Several late Classic Maya inscriptions including those on Stela 18 at the site of Yaxchilan and Stela 8 at Dos Pilas, suggest that the Maya tzolk'in began before midnight, followed by the haab day at sunrise (Mathews 2001:404-407). An inscription on a door lintel presently in the Museo Arqueológico de Hecelchakan, Campeche, specifically refers to the "entering" of a new tzolk'in day within a preceding haab day (Stuart 2004b). This structural feature of the Calendar Round may produce what look like aberrant dates when events occur during the night at a time of the 24-hour day when the tzolk'in has already advanced by one station but a new haab day is yet to arrive. Consequently, as Stuart (2004b) has argued, the ubiquity of such dates in the Puuc region does not reveal the presence of a distinct Calendar Style as Proskouriakoff and Thompson (1947) once suggested, but implies that either these nighttime events were particularly common or that local scribes were particularly insistent upon reporting the timing of such events.

Several Classic Maya inscriptions contain dates which cannot be explained by the use of an alternative set of year bearers or by the haab–tzolk'in correlation system identified by Mathews and further extended by Stuart. Two of these texts are the records of the ninth baktun ending on Copan Stela 63 and the Motmot Marker in AD 435 (Figure 1). The haab day is one station ahead of what it should be in a common Calendar Style 1 system. The 9.0.0.0.0 Calendar Round dates are recorded as 8 Ajaw 14 Keh and not 8 Ajaw 13 Keh. However, the context of these inscriptions, including the Long Count on Stela
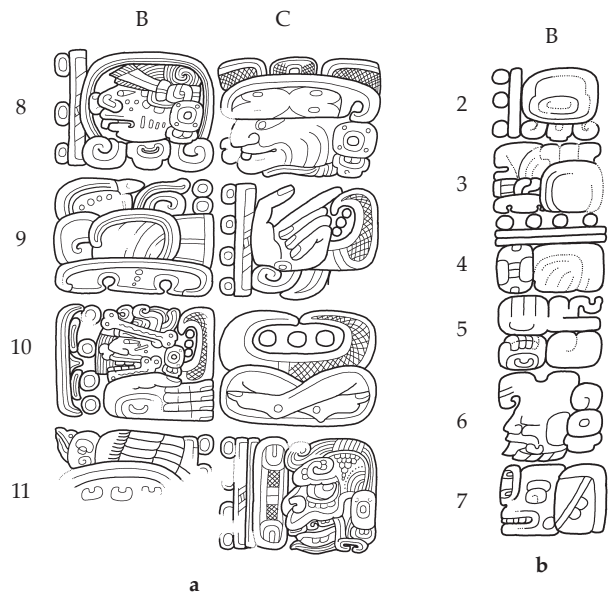

Figure 1. Unusual Calendar Round dates in Early Classic Copan inscriptions: (a) Stela 63; (b) the Motmot Marker. Drawings by the author except as indicated.

63, indicates that Copan scribes used Calendar Style 1. Therefore, the dates on Stela 63 and the Motmot Marker are either mistakes or evidence of a different correlation between the beginning times of tzolk'in and haab days.

Until now, these Copan dates have been interpreted as mistakes (Schele and Looper 1996:100). However, this interpretation seems unlikely in light of a recently discovered painted inscription in the Early Classic palace at La Sufricaya, Peten, Guatemala, that refers to the arrival of Sihyaj K'ahk' to Tikal (Estrada Belli et al. 2006, 2009). The Calendar Round date of this event is recorded as 11 Eb 16 Mahk (Figure 2a). Other references to the same event such as the one on Tikal Stela 31 (Figure 2b) and others (see Stuart 2000) are tied to known Long Count dates and leave no doubt that the intended date should be 11 Eb 15 Mak in the Style 1 system. The only other Calendar Round in the painted inscription at La Sufricaya follows the conventions of Calendar Style 1. The mural was painted no later than a year after the arrival of Sihyaj K'ahk' (Estrada Belli et al. 2009).

Two additional examples of the same kind of unusual Calendar Round date come from Late Classic monuments and are potentially more controversial. An eighth-century inscription on Copan Altar Q concludes with an event that is accompanied by the date written as

5 K'an 13 Wooh instead of 5 K'an 12 Wooh, although the Distance Number in the text implies that the intended dates correspond to Calendar Style 1 (Figure 3). The problem here is that another Distance Number linking two Style 1 dates in block A6 of the same inscription is one day short of what it should be. The presence of one computational mistake in this text implies the possibility of other errors. The other problematic example occurs in the inscription on the sarcophagus in the Temple of the Inscriptions at Palenque that reports the Calendar Round date of Kan Bahlam's death in AD 583 as 11 Chikchan 4 K'ayab and not as 11 Chikchan 3 K'ayab (Figure 4). All other Calendar Round dates at Palenque are Style 1 dates. The problem with this example is that it is late and isolated.

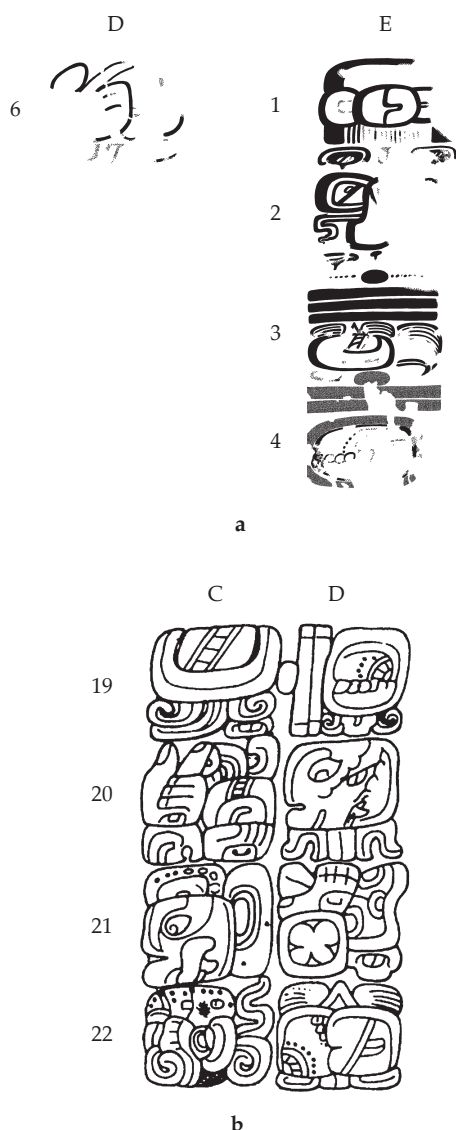The unusual haab–tzolk'in correlation at Copan, La
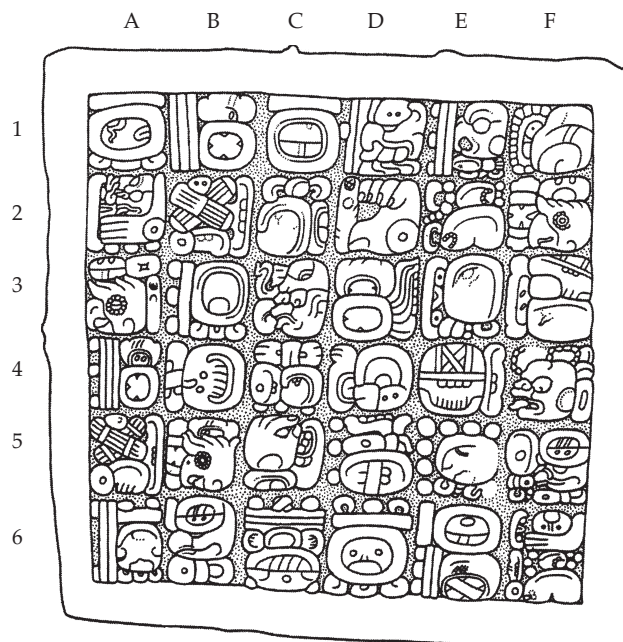
Figure 3. Inscription on Altar Q, Copan (drawing by David Stuart).

Sufricaya, and Palenque seems to have something to do with the haab days because when the same event (the arrival of Sihyaj K'ahk') is mentioned at different sites, it is the haab part of the Calendar Round date that differs. The most plausible explanation of the discrepancy is that a new haab day would begin before midnight, with sunset or noon being the likeliest candidates for a starting point. In other words, in contrast to the system identified by Mathews where the tzolk'in is approximately six hours ahead of the haab, it is the haab that is ahead of tzolk'in in this alternative correlation (Table 1). In both systems, Calendar Round days (i.e., the period of the day during which the Calendar Round follows the conventions of System 1) are shorter than tzolk'in and haab days and are separated by periods of transition, which are of the same length but correspond to different times of the day. In Mathews's system a Calendar Round day begins at sunrise and ends at midnight, but in the other system a Calendar Round day begins at midnight and ends at sunset (Table 1). The two systems are mutually exclusive, although it does not necessarily mean that those who relied on one were not aware of the other.

The difference in Calendar Round days between these systems may potentially explain the discrepancy in the Distance Number in the text on Copan Altar Q mentioned above. Distance Numbers are part of the Long Count, which is essentially a count of tzolk'in days. A Distance Number would count tzolk'in days between any two points in time and not the amount of time in general. As we have seen, the two tzolk'in–haab correlations result in Calendar Round days which stand in different relationships to the boundaries

Figure 2. Unusual Calendar Round date: (a) at La Sufricaya; (b) a reference to the same event on Tikal Stela 31 (drawing by William R. Coe from Jones and Satterthwaite 1982:Fig. 52).

Table 1: Classic Maya Tzolk'in–Haab correlation systems

Time	6	0	6	12	18	0	6	12	18	0	6	12	18	0	6	(hours)
TZ		A				B				C				D		
H			1				2				3				4	
System 1																
TZ		A				B				C				D		
H		1				2				3				4		
System 2																
CRD 1			A1				B2				C3				C4	
CRD 12		A1				B2				C3				C4		
Time	6	0	6	12	18	0	6	12	18	0	6	12	18	0	6	(hours)

System 1: Tzolk'in–Haab correlation proposed by Mathews. System 2: Tzolk'in–Haab correlation evidenced in Copan and La Sufricaya inscriptions. TZ = Tzolk'in day; H = Haab day; CRD 1 = Calendar Round Day in System 1; CRD 2 = Calendar Round Day in System 2.

between tzolk'in days. In one system, Calendar Round days end on the boundary between tzolk'in days, but in the system implicated at Copan and La Sufricaya, Calendar Round days begin on the boundary between tzolk'in days (Table 1). This difference might have been the reason why there is one tzolk'in day less in the Distance Number in the inscription on Copan Altar Q, which seems to be using the second correlation system. However, this explanation is highly speculative because the symbolic significance of the difference between starting and ending points of tzolk'in days is unknown. This pattern is not attested in other Distance Numbers at Copan.

Ethnographic data suggest that counting days from sunset to sunset may be a living tradition in some Maya communities. Watanabe (1993:723) points out that for speakers of Mam, Cakchiquel of Jacaltenango, Kanjobal of Santa Eulalia, and Tzotzil of San Pedro Chenalho, the solar day begins at sunset and not at sunrise as for other Maya groups. Interestingly, one can observe a reversal of sun-related directional terms with west being *elni* and east *okni* in Mam (Watanabe 1993), contrary to Classic Ch'olti'an *ochk'in* for west and *elk'in* (later *lak'in*) for east. It seems as if directional terms mirror different conceptualizations of the sun's movement in terms of where it "ends" and "begins." However, all of these communities no longer use the haab count, and when the contrast between the Spanish (Ladino) and indigenous day is noticed it is usually objectified

as a difference between the tzolk'in day count and the Spanish solar calendar (La Farge and Byers 1931:171-172; Long 1934:61).

As for the Early Colonial documents, on those rare occasions when Spanish authors noticed the difference between native day counts and their own, they apparently did not consider the possibility of different day-beginning times in different indigenous day-counting systems. The commentator of the Codex Telleriano-Remensis notes on Folio 48 that the Aztecs "count the day from noon to the noon of the next day" (Broda 1969:33-34; Caso 1954:106). Fray Juan de Córdoba states in his Arte del Idioma Zapoteco that the Zapotecs "counted the day from noon to noon" (Caso 1954:106; Broda 1969:33-34). Based on these accounts, Caso (1954:106, 1967:53-54) suggested that both *tonalpohualli* and *xiuhpohualli* days (Aztec equivalents of Maya tzolk'in and haab) began at noon, which would explain a discrepancy of one day between the Spanish and Aztec counts of days between the arrival of Cortez and the fall of Tenochtitlan, the two most reliable dates
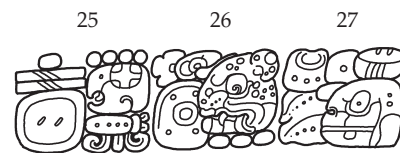

Figure 4. Unusual Calendar Round date in the inscription on the Palenque Sarcophagus (drawing by Linda Schele).

in terms of the correspondence between the native and Spanish chronologies. Nevertheless, some *tonalpohualli* day-related ceremonies described by Sahagun (1957:45, 77, 87, 113) including naming of children, began at dawn and continued into the afternoon. There are no references to noon as any kind of symbolic boundary on those ceremonial occasions. Sahagun's account on the Toximmolpilia ceremony is even more significant as it explicitly defines the chronological boundary between the two 52-year cycles. The boundary was at midnight with the Pleiades at zenith (Sahagun 1957:143). Consequently, either *tonalpohualli* or *xiuhpohualli*, or both, began at midnight.

The unusual dates in the Classic Maya inscriptions discussed above have one thing in common: they appear in the inscriptions dealing with or commissioned by individuals with some connection to Teotihuacan. This connection should be considered in the context of Early Classic political history. While the nature of this interaction is still debated among Mayanists, contemporaneous and later Maya written accounts suggest a form of political intervention directed by an individual named Sihyaj K'ahk' in the last quarter of the fourth century AD that was preceded and followed by a broader cultural interaction between Teotihuacan and the Maya (Martin and Grube 2000:29-33; Stuart 2000). The La Sufricaya inscription is located in a palace with murals and graffiti showing Teotihuacan warriors, and it apparently commemorates the one year anniversary of the arrival of Sihyaj K'ahk' to Tikal (Estrada Belli et al. 2009). Two Early Classic texts of Copan are commissioned by the dynastic founder who made a pilgrimage to Teotihuacan where he received royal insignia (Fash et al. 2009; Stuart 2004a). A third inscription (Altar Q) celebrates an anniversary of the founder's arrival to Copan, and the unusual date corresponds to the dedication of some form of effigy or altar in his honor. There is no immediate link between Kan Bahlam of Palenque and Teotihuacan, but there is evidence of some form of interaction or association between Early Classic Palenque rulers and Highland Mexico (Stuart and Stuart 2008:119-122). Late Classic inscriptions and imagery also suggest a connection. Sihyaj K'ahk' is mentioned on the stucco panel on House A of the Palenque Palace (Martin and Grube 2000:156). Some depictions of Kan Bahlam II, including a looted panel of which the so-called Jonuta Panel is part (Schaffer 1987), have strong Teotihuacan associations.

What is also potentially significant is the emphasis on time in Classic Maya references to Teotihuacan. Imagery associated with the New Fire Ceremony is particularly abundant (Fash et al. 2009; Nielsen 2006). It is tempting to suggest that if Teotihuacan had a distinct way of counting tzolk'in and haab days, the adoption of such system would fit well with this Maya insistence on Teotihuacan calendar symbolism. Unfortunately, we have no direct evidence of how people in Teotihuacan counted solar days because there are no Calendar

Round dates in its inscriptions. 260-day cycle dates are well attested and the coefficients with some potentially calendar-related glyphs exceed 13, suggesting that a haab-like system could also have been in use (Taube 1999, 2000).

A somewhat more exotic explanation would be that the unusual correlation reflects not a borrowed Teotihuacan system but Classic Maya ideas about Teotihuacan. Classic Maya narratives consistently place Teotihuacan in the west. The title possibly associated with Teotihuacan rulers and deities is *ochk'in kaloomte'* "*kaloomte'* of the west." It is usually interpreted as an indication of the place of origin in a strict sense of the word, but it may also indicate a broader classificatory assignment to the western part of the world, the place of the setting sun. In Classic Maya iconography, the sun deity appears as a dualistic entity corresponding to day and night. The complementary opposition of the two suns may be evoked in various contexts including royal succession, as in Early Classic Copan or at Naranjo. It is tempting to speculate that the Maya saw Teotihuacan far in the west as a place where days were nights and consequently where the haab was counted by night suns, from sunset to sunset.

As in the case of the common Classic Maya haab count, the system attested at Copan, La Sufricaya, and Palenque can be detected only when the narratives refer to an event that takes place during the time of the partial overlap between new and old days. In other words, the La Sufricaya text possibly suggests that Sihyaj K'ahk' arrived at Tikal after sunset. The rituals mentioned in the Copan inscriptions discussed above might also have taken place between sunset and midnight. Then there is the question as to what extent most Classic Maya inscriptions insist on such precise timing. In other words, chances of detecting this correlation system are relatively low. For example, there is no evidence pointing to the starting point of haab days at Tikal. It could be the common system, but it could also be the one used only at Copan, La Sufricaya, and Palenque. It should be noted that there is no evidence of the system identified by Mathews used at these three sites.

In summary, rather than being mistakes or aberrations, the unusual dates at Palenque, La Sufricaya, and Copan, particularly those in Early Classic inscriptions from the latter two sites, point to an alternative way of counting haab or solar days that has something to do with Teotihuacan influence or Classic Maya perception of Teotihuacan. The presence of this new correlation is particularly significant in light of the prevalence of New Fire or New Year symbolism in Classic Maya imagery associated with Teotihuacan and suggests that the potential adoption of certain Teotihuacan culture traits by some Maya polities went as far as such fundamental concepts as the beginning and end of a day in the calendar. This unusual correlation system is not in evidence at the archaeological sites

where the correlation identified by Mathews is attested, implying differences in foundation narratives, cultural associations, and identities.

Acknowledgments

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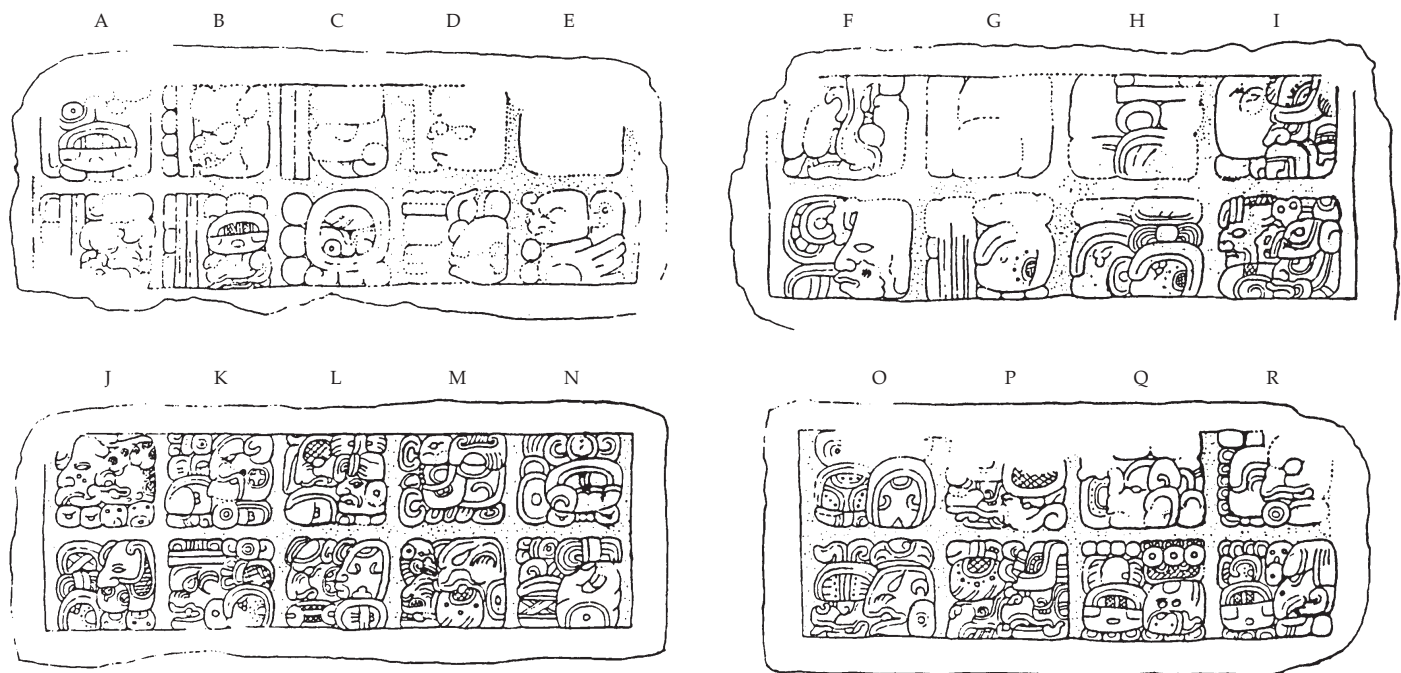# A New Look at the Inscription of Copan Altar K

Péter Bíró

Figure 1. Copan Altar K (drawing by Linda Schele).

Copan Altar K (CPN 22) is a small monument currently in front of Structure 6 in the main plaza of the site. Although its upper surface is uncarved, its four sides are inscribed with a text of 36 glyph blocks (Figure 1).

Altar K has been known since the end of the nineteenth century (Maudslay 1899-1902), but it has not received much recent attention apart from one short article published in the *Copán Notes* series (Grube and MacLeod 1989). Nikolai Grube and Barbara MacLeod identified a sequence of glyphs (M2-N2) which they described as "a kind of abbreviated Primary Standard Sequence" (Grube and MacLeod 1989:2). Nonetheless, the inscription is worth an additional look, especially in light of decipherments of the last two decades. For one thing, this is the only inscription in Copan which mentions the *sajal* title, and it provides a window on other non-royal nobles in the city. For another, the text seems to hint at ritual mechanisms otherwise poorly attested in Classic Period inscriptions.

In the following, I shall present a transcription, transliteration, and literal translation of the text with an analysis concentrating on certain glyphs and their implications for both decipherment and the role of non-royal elites in Copan history.[1]

The text of Altar K

As noted above, the text (Figures 1 and 2) appears on all four sides of the altar. The reading order is straightforward and begins with the Initial Series:

(A1) ? (B1) 9-**PIK** (A2) 12-**WINIKHAB** (B2) 16-**HAB** (C1) 10-**WINIK** (D1) 8-**K'IN** (C2) 3-**LAMAT** (D2) 9-**CH'AM-K'UH TI'-na**? (E1) ? (E2) 2-**K'AL-ja**-? (F1) ?-? (G1) *u-**K'ABA'** (F2) **K'AL**?-**li-BALUN**? (G2) 16-**YAX-SIHOM**?-**ma** (H1) ?-**BALUN**?-**TZ'AK**?-**AJAW** (I1) ?-**wa**-? (H2) ?-**TUN-na-hi** (I2) ?-**yi-u**-? (J1) **TIWOL**?-**la-BALAM**-? (K1) **SAK-TE'-AJAW-wa-BAH-TE'** (J2) **yi[ta]-hi-sa-ja-la** (K2) **AJ-TI'-yu-tu-ku** (L1) **yo-OK-TE' [ITZAM]ma** (M1) **ya-a[la]-ji-ya** (L2) **ch'o-ko-WINIK-ki** (M2) **i-UK'** (N1) **ti-yu-ta-la** (N2) **SAK-SA'-chi-hi** (O1) *YAX?-POLAW?-wa-*YAX?-WINIK (P1) **K'AWIL**-? (O2) **K'AK'-u-TI'** (P2) **WITZ'-K'AWIL** (Q1) **K'UH**-?-**pi-AJAW** (R1) **NOH-la**?-**KAL-TE'** (Q2) 4-**WINIKHAB-ch'a-ho-ma** (R2) 4-**WINIKHAB-AJAW-wa**

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[1] For consistency, I transcribe and transliterate Maya hieroglyphs according to the procedures developed by Alfonso Lacadena and Søren Wichmann (2004). Nonetheless, I am aware that there are alternative suggestions.

Figure 2. Copan Altar K (drawing by Annie Hunter in Maudslay 1889-1902:1:Plate 73).

(A1) *?* (B1) *9 pik* (A2) *12 winikhaab* (B2) *16 haab* (C1) *10 winik* (D1) *8 k'in* (C2) *3 lamat* (D2) *cham-9-k'uh ti' [hu'n]* (E1) *?* (E2) *ka[h]laj 2-?* (F1) *?* (G1) **u k'aba'* (F2) *k'al? balu'n?* (G2) *16 yax siho'm?* (H1) *? balu'n tz'ak[bu] ajaw* (I1) *?-wa ?* (H2) *? naah* (I2) *?Vy u-?* (J1) *tiwo'l? ba[h]lam* (K1) *sak te' ajaw baah te'* (J2) *yitaah sajal* (K2) *aj ti' yutuk* (L1) *yook te' itzam* (M1) *ya'ljiiy* (L2) *ch'ok winik* (M2) *i uk'* (N1) *ti yutal* (N2) *sak sa' chih* (O1) **yax? polaw? *yax?-winik* (P1) *k'awiil-?* (O2) *k'a[h]k' u ti'* (P2) *witz' k'awiil* (Q1) *k'uh[ul] ?-Vp ajaw* (R1) *noh[o']l kal[o'm] te'* (Q2) *4 winikhaab ch'aho'm* (R2) *4 winikhaab ajaw*

The nobles of K'ahk' Uti' Witz' K'awiil

Translation and interpretation of the first part of the text (following the Initial Series) is difficult as the inscription is heavily eroded and there are several

poorly understood morphemes. The first problem concerns the correspondence of the Long Count and the Calendar Round. As Grube and MacLeod (1989:1) have noted, the Long Count of 9.12.16.10.8 (November 2, AD 688) requires the Calendar Round 11 Lamat 16 Mak; however, the Calendar Round on the altar is written as 3 Lamat 16 Yax, corresponding to 9.12.16.7.8 (September 3, 688). The Lord of the Night, however, is G1, which matches the written Long Count 9.12.16.10.8.

Though a solution is not yet at hand, it is relatively straightforward to suggest that Altar K was a monument most likely dedicated late in AD 688, in the final years of the reign of K'ahk' Uti' Witz' K'awiil (ruled 628-695), the twelfth successor of the founder of the Copan dynasty, K'inich Yax K'uk' Mo'.

The first event commemorated is hard to reconstruct because of the severe erosion of glyph block H1. The verb should be in H1a, but the shape of the remaining glyph does not help too much in identification. Based on Annie Hunter's drawing (Figure 2), there seem to be at least two glyphs, the uppermost of which looks very similar to the bat head sign frequently appearing in dedications of carved texts on stone altars and ceramics. But the usual **yu**- prefix does not appear to be present, which makes this interpretation less secure.

Another possibility is that this is the head of God N with a –**yi** suffix, just as in I2a, forming a semantic couplet with the following sentence. The next three graphemes are *balu'n tz'ak[bu] ajaw*, an expression frequently appearing in Classic Period texts as a title and general reference to ancestors (Wagner 2005b).

In I1, the sequence continues with an eroded sign with a possible -**wa** suffix and T1017, the head variant of the still undeciphered T24, which refers to jade or smooth, resplendent surfaces (Callaway 2006; Taube 2005). T1017/T24 is frequently found in the proper names of various monuments (mainly stelae) at Copan and other sites (for example CPN 3 and 4). In H2a, the upper sign is again eroded, but the next sign may be T528 **TUN**/**ku** followed in H2b by the phonetic spelling **na**-**hi** or *naah* "house, building."

Although a complete phonetic and semantic reading is still lacking, the first sentence may record the dedication of a building (*naah*) and its name (*balu'n tz'akbu ajaw ?-wa* 'RESPLENDENT' *?-ku*). Altar K is an in-situ monument at the northern end of Structure 6 (10L-6), and perhaps the text refers to the dedication of this building, hinting at one of its functions as a house of ancestors.

The text of Altar K continues in I2a with the head of God N suffixed by -**yi**, an undeciphered dedicatory verb. The next glyph, in I2b, is the combination of the third person ergative pronoun **u** and an undeciphered sign.[2] This part of the inscription may contain a literary device, a couplet frequently used in Classic Maya discourse:

?-Vy?
    balu'n tz'ak(bu) ajaw ?-wa ? ?-ku naah
?-Vy?
    u-?

is dedicated
    the Balu'n Tz'ak(bu) Lord ?-*wa* ? ?-*ku* House
is dedicated
    the ?

Structure 6 pertains to a person or supernatural being named in J1. His name consists of a probable variant of T231 **TIWOL**[3] and the 'Waterlily-Jaguar' head.

This individual has a series of important titles, and somewhat surprisingly he was not a king of Copan. Chronologically this is the earliest contemporary inscription of Copan which records a non-royal noble as the owner of a structure. His first title is *sak te' ajaw* "the white spear? lord," a somewhat rare title otherwise only known from a bone from Tikal burial 190 (Str. 7F-30), the Palenque Death's Head monument, and a fragment from Palenque's Temple of the Foliated Cross. In the last two cases it appears in the name of a carver. The next title is *baah te'* "first spear? (lord)," a title frequently used by both rulers and nobles. This might indicate a military status. Apparently the dedicated building and object both belonged to him, hinting at the importance of Structure 6 and the compound behind it.

The next collocation, at J2, may be **yi**[**ta**]-**hi**, *yitaah* "he/they accompanied him" and thus perhaps introducing one or more individuals who witnessed and participated in the ritual event of dedication (MacLeod 2004).[4] As indicated by their titles, they too seem to have been non-royal nobles.

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[2] Christian Prager and Elizabeth Wagner have suggested that this is a variant of an undeciphered sign representing the head of "a fish like creature with an aged face, an elongated snout and reptile features" (Prager and Wagner 2008:4). This glyph forms a *difrasismo* with a distinctive deer head which is occasionally omitted. Prager and Wagner (2008:4-5) argue that this *difrasismo* refers to an entrance into a building connected to burials, tombs, and ancestral veneration. The names of the buildings or objects connected to this expression include the collocation **9-TZ'AK** on Copan Stela 49. As such, it is possible that Structure 6 was not only an ancestral building but a tomb structure. However, in the inscription of Altar K the deer glyph is missing and the glyph following the ergative pronoun is slightly different from other examples of the fish-like creature. Therefore the identification of the Altar K glyph with the undeciphered *difrasismo* may not be valid.

[3] See Stuart (2005) for the **TIWOL** reading. The identification here is tentative, based largely on the presence of characteristic features of T231 such as the lip element and the tuft of hair on the forehead. The presence of a -**la** suffix, a potential phonetic complement, also supports this interpretation. However, there are certain differences which might not be stylistic but rather indicative of a distinct sign.

[4] I owe the identification of the **yi**[**ta**]-**hi** collocation to Marc Zender (personal communication 2010), though he cautions that it is tentative, particularly given the unexpected final **hi** (rather than **ji**).

The first one is a **sa-ja-la** or *sajal*, a well known title appearing across the Maya lowlands but only attested at Copan in this one inscription. Following this is another title spelled **AJ-TI'-yu-tu-ku** or *aj ti' yutuk*. There are various possibilities to interpret this collocation. The *aj* agentive helps to narrow down the translation to a toponymic formula, ethnic name, or specific office/rank. The second part of the collocation is the logogram **TI'** which means "mouth, lips" but metaphorically also "edge, entrance," and in the well known *ti' sakhu'n* title Marc Zender (2004:210-221) convincingly argues that it could carry the meaning "language, speech" (see also Houston 2009a). While in this latter title the head noun refers to an object (white headband), the *yutuk* collocation is a toponym. This identification is based on the text of Copan Stela P (Figure 3) where at the very end of a long list of gods, the clause ends with **yu-tu-ku** BAT-**pi-CH'EN-na**, similar to other embedded toponymic clauses such as **3-wi-ti-ki** BAT-**pi-CH'EN-na**.

Following the grammar of Mayan languages, this compound noun can be translated as "the speaker (*aj ti'*) of Yutuk," "he (*aj*) of the edge/entrance (*ti'*) of Yutuk," or simply "he from Ti' Yutuk." As the block preceding the toponym on Copan Stela P is partially eroded, it is not inconceivable that the full toponym was indeed Ti' Yutuk. That said, the syntax would probably have required the verb **u-ti-ya** (*uhtiiy* "it happened at") in the now missing portion, and this in turn would tend to rule out a **TI'** in this glyph block. Furthermore, the one-glyph-block-equals-one-word format of the Stela P inscription again favors Yutuk as the full name of this toponym.

As both Stela P and Altar K are in situ monuments, it is possible that they indicate the location of Yutuk as the northern part of the Central Acropolis. However, it is more likely that the Acropolis was named Wintik combined with numbers from 1 to 4 and that Yutuk referred to the area just west of the Acropolis, encompassing the architectural compound behind Structure 6.[5]

The next title (*yookte' itzam*) is less enigmatic, and recent work by David Stuart (2006) has convincingly clarified it. This is a compound noun derived from *ook* "foot" and *te'* "tree" forming *y-ook-te'* "the foot of the tree" or "root, support."

An example of what *yookte'* means in a ritual context appears on Palenque's Left Sanctuary Panel of the Temple of the Cross. There the text is the following: *u laju'ntal yookte' a[h]ku'l ichiiy u kokan? chan k'inich kan ba[h]lam* or "he is the tenth support (of) the Turtle Heron Spine of the Snake, K'inich Kan Bahlam" (Stuart 2006:113). In the accompanying image, K'inich Kan Bahlam II is represented with a sumptuous headdress containing among its elements both a turtle-heron and a snake with a large, spine-like tooth—two or possibly three supernatural beings impersonated by the king. K'inich Kan Bahlam II thus literally became the support

Figure 3. **yu-tu-ku ?-pi CH'EN-na** or *yutuk ? ch'e'n* (Stela P, C12-D12). Drawing by Barbara Fash.

or root (the meaning of *yookte'* in Classical Yukatek) of various gods. On Altar K, the position of Ahku'l Ichiiy is taken by another god, Itzam (God N).

The titles on Altar K suggest that the monument (or the dedicated object) belonged to a highly ranked noble carrying the titles *sak te' ajaw* and *baah te.'* In the dedication ceremony, other nobles bearing the titles *sajal*, *aj ti' yutuk* and *yookte' itzam* may have participated. The mention of non-royal elites is rare at Copan, yet on Altar K we may have a list of as many as five separate individuals of this status.[6] In this respect, Altar K closely resembles such texts as the bench of Palenque Temple XIX, where non-royal nobles are depicted as active participants in royal ceremonies (Stuart 2005).

Altar K is highly visible and accessible, and after 688 it remained undisturbed by later rulers, suggesting that the successors of Tiwo'l 'Waterlily-Jaguar' may have maintained their position in the royal court. While Structure 6 and the architectural compound behind it have not been excavated yet, I suggest that it may have housed one of the most important noble families of Copan during the seventh and eighth centuries.

The words of the *ch'ok winik*

After the list of participants the texts continues with a new verbal clause transcribed as **ya-a[la]-ji-ya** (or perhaps **ya-[la]a-ji-ya**)[7] cuing a transliteration *ya'ljiiy*. This in turn can be analysed as the prevocalic third person ergative pronoun *y-*, the transitive verb *a'l* "to say," a *–Vj* perfective suffix, and the demonstrative *–iy*. This can be translated as "he/they have/had said it," a formula normally following quoted speech on ceramics

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[5] Carlos Pallán (2009:147-155) mentions two other toponyms which are compound nouns with **TI.'** One comes from Edzna Hieroglyphic Stairway 1 and spells 9-**TI'**-510c while the second comes from Dos Pilas and spells as **AJ**-9-**TI'** (Panel 19). In the first case Pallán argues for a translation of "Many/Nine Entrances Cave," while Stephen Houston (2009a) translates the second one as "he of many languages." Another possibility is that this was a toponym with the meaning "Many Entrances."

[6] See Zender (2004:Note 54) for a discussion of similar 'lists' of participants in other Mayan inscriptions.

[7] As indicated by the transcription, the **la** sign is infixed into the eye of T228. This can only be seen on the early photos and Annie Hunter's drawing and was pointed out to me by Marc Zender (personal communication 2010), whose insight greatly helped me to understand the text.
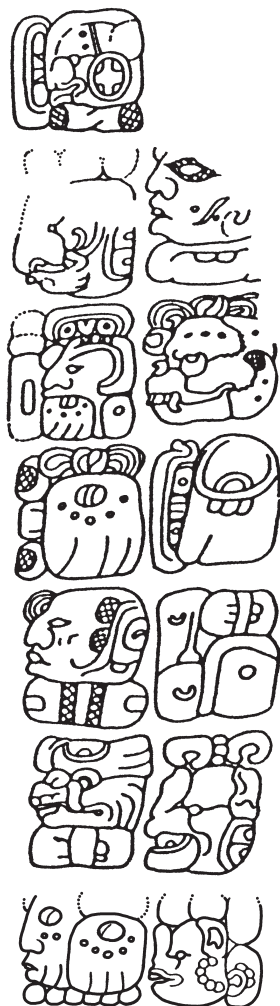
Figure 4. Copan Altar U, J5-N1 (drawing by Linda Schele, inked by Mark Van Stone).

or other small objects but relatively rare on public stone inscriptions. The subject of the verb is simply spelled **ch'o-ko-WINIK-ki** or *ch'ok winik* "young man/men."

There are at least two possible interpretations of *ch'ok winik*. First, it may simply refer to a young man or a group of young men (concerning the significance of *ch'ok* in Maya insciptions see Houston 2009b). An alternative possibility is that it refers to a group of ritual specialists connected to impersonations of the god K'awiil, usually termed the *chante' ch'oktaak*, or variants thereof (see Bernal Romero 2009; Stuart 2004). These ritual specialists are usually four in number, however, and given that the Altar K text attaches no number to the term *ch'ok winik*, this identification should be regarded as uncertain.

It is difficult to decide whether these are supernatural beings or persons impersonating supernatural beings; however, the text of Altar K may hint at this last interpretation. Consider the translation thus far: "is dedicated, the ? of Tiwo'l 'Waterlily Jaguar' Sak Te' Ajaw

[and] Baah Te', they accompanied him, the *sajal(s)*, the one(s) from Ti' Yutuk and the supporter(s) of Itzam (as) they had said it, the *ch'ok winik*." This translation may be taken as implying that the dedication of the object (and/or its associated building) pertaining to Tiwo'l 'Waterlily Jaguar' was carried out according to the instructions of a person or persons referred to as *ch'ok winik*.

The text of Altar K is therefore not only unique in its highlighting of various non-royal nobles but also in its implication that these nobles took their ritual orders from a group of ritual specialists, a young man or young men, who may also find mention in other texts from Copan, Quirigua, and Palenque (Bernal Romero 2009).

Drunk from fruity white maize gruel pulque

The next clause (M2-N2) was the main topic of the analysis of Nikolai Grube and Barbara MacLeod (1989), who were among the first to realize that it bears a certain resemblance to the Primary Standard Sequence on many polychrome ceramics. It reads **i-UK' ti-yu-ta-la SAK-SA'-chi-hi** or *i uk' ti yutal sak sa' chih*.

Although the verb *uk'* "to drink" is relatively rare in inscriptions (see Piedras Negras Panel 3 and Tikal MT 56 for two key examples), there are at least two other instances at Copan. One can be found in a very similar context on Altar U. This highly interesting text records that on 9.17.9.2.12 (AD 780) Yax K'amlay?-Chan-T24 was seated (presumably on the altar itself), which was followed on the same day by another ritual (*sutjiiy?*) involving a supernatural called Yax ? Ajaw Uhx ?-li Setno'm,[8] and also by the formation (*upatbuuj*) and changing (*tu je[h]l*) of the image of another ancestral god, Nu'n Yajaw Chan Aj Baak. The ceremony was continued according to the following statement (Figure 4):

> **u-BAH[AN]-nu 3?-PIK AKAN-na ti-u-UK' [chi] hi u-[ba]hi u-CH'AB IXIK-CHAK ?-ki-ye? XOK?-ki ya-? ba-*ka-ba ?-pi-AJAW**
>
> *ubaah[il] a'n u[h]x? pik a[h]kan ti uk' chih ubaah uch'aa[h]b ixik chak ?-ki ye[j] xook? ya-? baa[h]kab ?-Vp ajaw*

The translation of this short passage was undertaken by Nikolai Grube and reads "he was the impersonation of Uhx Pik Ahkan pulque-drinking" (Grube 2004:63). According to Grube, the main actor and impersonator (Yax Pasaj Chan Yopaat) is mentioned at the end of the whole sequence (by the *baahkab* title and an emblem glyph), and I expect that a similar narrative structure

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[8] This reading was arrived at by the author and Albert Davletshin. The spelling is **se-ta-no-ma** which is apparently an agentive expression composed of the transitive verb *set* "cortar (palo, tabla)" in Chol (Aulie and Aulie 1996), Ch'orti' (Wisdom 1950), and Tzotzil (Laughlin 1975) + the intransitivizing suffix *-n* + the agentive suffix for intransitive verbs *-o'm,* giving a suggested meaning of "cutter (of stones?)."

would be employed in the text of Altar K.

On Altar K the text records the beverage from which the Copan ruler became drunk as *yutal sak sa' chih* or "fruity white (maize) gruel pulque," a rare combination of different ingredients (Beliaev et al. 2010:264-267).

The text continues in O1 with an extended version of the name of the twelfth Copan ruler, unique to this inscription. It begins at O1a with the sequence *YAX-POLAW-wa[9] (*yax polaw*), which may refer to the first ocean or waters at the time of creation. Although the second half of this block (O1b) is partially eroded, it certainly contains the word **WINIK**. Quite possibly, the effaced glyph above it was once *YAX as well, forming a couplet with the preceding formula such as *yax polaw *yax winik* "the first ocean(s), the first man/men." Following this, in block P1, is the well known (but sadly not yet deciphered) manifestation of K'awiil from the 819 Day Count Cycle, long ago nicknamed 'Glyph Y.'

The rest of the inscription is rather straightforward, recording the name K'ahk' Uti' Witz' K'awiil (O2-P2) with his customary titles including the Copan emblem glyph (Q1), the frequent South Kalo'mte' title (R1), and two numbered 'k'atun titles,' *4 winikhaab ch'aho'm* (Q2) and *4 winikhaab ajaw* (R2).

Taking into account the preceding discussion of the text of Altar K, it is possible to give the following translation:

> On 9.12.16.10.8 3 Lamat 16 Yax is dedicated the Balu'n Tz'akbu Ajaw ?-wa House, is dedicated the ? of Tiwo'l? 'Waterlily Jaguar,' the Sak Te' Ajaw, the Baah Te'. They accompanied him, the sajal(s), the one(s) from Ti' Yutuk, the supporter(s) of Itzam (as) they had said it, the Young Lord(s), and he was drunk from fruity white (maize) gruel pulque, Yax? Polaw? Yax? Winik K'awiil ?, K'ahk' Uti' Witz' K'awiil, Divine 'Copan' Lord, South Kalo'mte', Four 'K'atun' Ch'aho'm, Four 'K'atun' Lord.

Concluding remarks

Altar K is special in more than one sense within the corpus of Copan inscriptions. Not only is it the earliest contemporary text from the site which unambiguously mentions non-royal dignitaries, but the recorded titles — all known from other inscriptions of the lowlands — do not otherwise appear in the inscriptions of Copan. The location of the altar within the largest public space of the site makes it a symbol of the importance and influence of the non-royal household which appears to have commissioned the monument.

The prominence of non-royal nobles in Copan is generally dated from the second half of the eighth century, during the reign of Yax Pasaj Chan Yopaat, and has been argued to have contributed to the weakness of centralized royal authority and eventually to the political collapse of the site (Andrews and Fash 2004; Fash 1991; Martin and Grube 2008:210-211). Other monuments registering non-royal nobles of Copan were dedicated between 770 and 781.[10] All of them are outside the main area traditionally interpreted as the residence and ritual center of the royal family. Altar K therefore precedes these monuments by almost a hundred years and stands ostentatiously in the royal center. Indeed, it remained in situ, and I suggest that it continued as a symbol of importance for the non-royal noble household who commissioned Structure 6, and who may have had their main residence in the compound just behind that building.

At least two other non-royal inscriptions record toponymic titles at Copan, and Elisabeth Wagner (2005a) has suggested that these were the names of local compounds (*koxoop* for 9N-82 and *bijnaah* for 10K-4). One toponymic title is recorded on Altar K (*ti' yutuk*), and a very similar toponym is mentioned on Stela P (*yutuk*). It might be that Ti' Yutuk was the name of the compound behind Structure 6, though I would caution that because this title occurs in the name of one of the accompanying participants, it may instead refer to another unknown area of Copan. Be that as it may, this inscription certainly needs to be considered as scholars continue to reassess the role of non-royal nobles in the political history of Copan.

Another important aspect of this text is the relatively detailed description of a hierarchy of ritual participants and the discursively ambiguous role of the Copan ruler. The dedication ceremony appears to have been carried out according to the instructions of a young man (or young men) whom I have tentatively equated with the *chan ch'oktaak* or four ritual specialists known to have some connection with the god K'awiil. The text mentions a major protagonist and several companions, thus discursively evoking a ritual setting which is frequently depicted on ceramics and some Late Classic panels from the Western Peten and Petexbatun regions. Intriguingly, the ruler is introduced not as an overseer but as a "drunk" participant, and while the number of his titles and the space devoted to him at the end of the text certainly reflects the ritual hierarchy, it is worth noting that there is no overt expression of this hierarchy via the usual agency expressions (e.g., *ukabiij* or *yichnal*).

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[9] Due to erosion, the identification of these glyphs is difficult. This reading was suggested to me by Marc Zender (personal communication 2010).

[10] These monuments include Bench Str. 10K-4 (undated), Altar Str. 9N-8 (Altar W, 776), Bench Str. 9M-146 (780), and Bench Str. 9N-82 (781).

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