



The PARI Journal

A quarterly publication of the Ancient Cultures Institute
Volume XV, No. 2, Fall 2014

In This Issue:

On the Reading of Three Classic Maya Portrait Glyphs

by
Marc Zender
PAGES 1-14

•

“Out of Order!” Or Are They? A Textual and Visual Analysis of Two Dedicatory Texts on Classic Maya Ceramics

by
Erik Boot
PAGES 15-37

•

The Further Adventures of Merle (continued)

by
Merle Greene
Robertson
PAGES 38-40

Joel Skidmore
Editor
joel@ancientcultures.org

Marc Zender
Associate Editor
marc@ancientcultures.org

The PARI Journal
202 Edgewood Avenue
San Francisco, CA 94117
415-664-8889
journal@ancientcultures.org

Electronic version
available at:
www.precolumbia.org/
pari/journal/1502

ISSN 1531-5398

On the Reading of Three Classic Maya Portrait Glyphs

MARC ZENDER

Tulane University

Maya hieroglyphic writing is justly renowned for its visual complexity. Signs appear in multiple shapes—head variants, full-figure variants and graphically abbreviated pars pro toto forms—and these forms are not static, but prone to shift with time and distance, and even idiosyncratically across the work of the same scribe or sculptor. Intimately and inextricably tied to iconography, shifting representational conventions in art had immediate repercussions for the shape of hieroglyphs, and vice versa (see Stone and Zender 2011:10-28). The epigrapher can feel almost defenseless against such profound mutability of form, particularly in cases where signs already share an uncomfortable degree of formal similarity. I have written previously about the particular challenges presented by semblant signs in light of such wanton formal variation (e.g., Zender 2005a, 2005b, 2006b), and this paper tackles three particularly extreme examples.

Eight years ago, in my review of Macri and Looper's *The New Catalog of Maya Hieroglyphs* (Zender 2006a:441, Note 1), I noted the separation of three frequently confused portrait glyphs. The review did not allow for the presentation of evidence bearing on that observation, and while the evidence has since been presented at several public meetings (Zender 2008; Kettunen and Zender 2013), and partially developed in print (Stone and Zender 2011:21-22, 35), I would now like to consider the matter at more length. It should be a worthwhile exercise. The signs in question are very common, and they also

touch upon key themes of general interest to scholars, such as Classic Maya religion and gender identity. Moreover, although the greater part of the confusion has its roots in the earliest scholarship on these signs, it nonetheless continues in much of the literature today, and not least in the very sign catalogs and popular introductions to Maya writing whose aims are the alleviation of confusion for initiates. The goals of this paper are therefore not only to present the evidence for separating three similar signs—which naturally encompasses an investigation into their forms, functions and distribution in the writing system—but also to disentangle the many erroneous references to these signs in the literature, so that the reader may better perceive where recent epigraphic and iconographic work has been founded on misapprehensions regarding the nature and significance of one or more of these signs.

Given the complexity of the literature bearing on these signs, and the confused state of affairs with respect to their designations, it has been difficult to find sufficiently neutral labels with which to proceed. For this reason, I illustrate generic forms of these portrait glyphs here at the outset (Figure 1) and refer to them throughout this paper by: (1) a convenient label indicating the iconographic sources of the portraits; (2) their original Thompson designations (despite considerable overlap in these designations); and (3) their reading values and translations. As keyed to Figure 1, the three portrait glyphs forming the subject of this paper

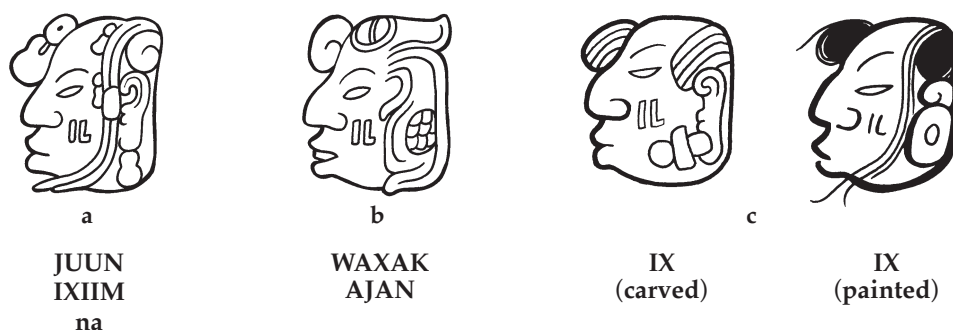


Figure 1. The three portrait glyphs: (a) Tonsured Maize God (T1000a); (b) Foliated Maize God (T1000h and T1006); (c) Female (T1000b, T1001 [in part] and T1002a-b) (drawings by the author).

will therefore be referred to as follows:

Figure 1a: Tonsured Maize God (T1000a)

JUUN “one,” **IXIIM** “grain corn; *maíz en grano*,” and syllabic **na** (the latter may derive from *nal* “mature ear of corn; *mazorca*”)

Figure 1b: Foliated Maize God (T1000h and T1006)

WAXAK “eight” and **AJAN** “fresh ear of corn; *elote*”

Figure 1c: Female (T1000b, T1001 [in part] and T1002a-b)
IX “female prefix”

Thompson designates all three of these signs (and others besides) as T1000. As I show below, this lumping of distinct signs has greatly influenced all subsequent discussion of these glyphs and their values. By contrast, I will argue that clear and consistent visual distinctions are maintained between all three of these signs and that they do not substitute for one another. The modern confusion of these signs is in large measure an artifact of their admittedly pronounced visual similarities. The erosion of ancient texts has also been a contributing factor, as has modern repainting of ceramics and, occasionally, incautious renderings of Maya texts.

I hasten to add that many of the readings and interpretations noted above represent the fruits of previous scholarship, duly cited below. In this paper, I claim no discoveries apart from the following: (a) that these three signs are consistently separated along the lines indicated above; (b) that the **na** syllabic value pertains only to the Tonsured Maize God, never to the Female Portrait, and that it consequently could not have derived from the frequently-suggested value *na* “mother” (cf. Lounsbury 1984:182), although it may have derived from an earlier albeit presently unattested value *nal* “mature ear of corn”; (c) that one of the logographic values of the Foliated Maize God was **AJAN** (Zender 2008; Stone and Zender 2011:21-22); and, finally, (d) that the canonical logographic value of the Female glyph was **IX**, rendering the well-known female prefix *ix-*, even though it could also be employed, with or without an explicit **ki** suffix, to render the independent noun

ixik “woman.” All of the other readings and identifications compiled above—inclusive of the iconographic identifications of these portrait glyphs as Maize Gods and a Female—have been demonstrated previously in the ample literature on these signs.

Because of its status as a singularly important reference work, I turn now to a brief discussion of the treatment of these portrait glyphs in J. Eric S. Thompson’s *A Catalog of Maya Hieroglyphs* (1962).

A Catalog

Thompson (1962) is rightly considered a landmark publication in the field of Maya epigraphy. His *Catalog* was remarkably thorough for its time and usefully incorporated detailed contextual information for the greater part of its signs. For these reasons, most epigraphers continue to cite Thompson’s catalog numbers whenever practical. Only where Thompson is in out-and-out error, or has simply missed a sign entirely, do epigraphers turn reluctantly to more recent sign catalogs. Unfortunately, as has frequently been noted (Macri andLooper 2003:14; Ringle and Smith-Stark 1996:2), Thompson neglected to include contextual information for what he termed ‘portrait glyphs’ (1962:14) instead merely illustrating and enumerating the greater part of them on two pages at the conclusion of his *Catalog* (1962:457-458). Although the sources for his illustrations can be identified, it remains difficult to discern Thompson’s reasons for grouping these signs as he did, and it should be noted that he himself regarded the portrait glyphs as incompletely studied (1962:5) and with an “element of subjectivity” (1962:9).¹ He explains his “eclectic treatment” (1962:14) of them in part by arguing that they behave differently from other signs (which is not true) and then notes that a fuller treatment would have greatly delayed the publication of his *Catalog* (which was doubtless true).

¹ The full sentence is classic Thompson: “It is because of this element of subjectivity in the approach that I have used the indefinite article before *Catalog* in the title of this publication” (Thompson 1962:9).

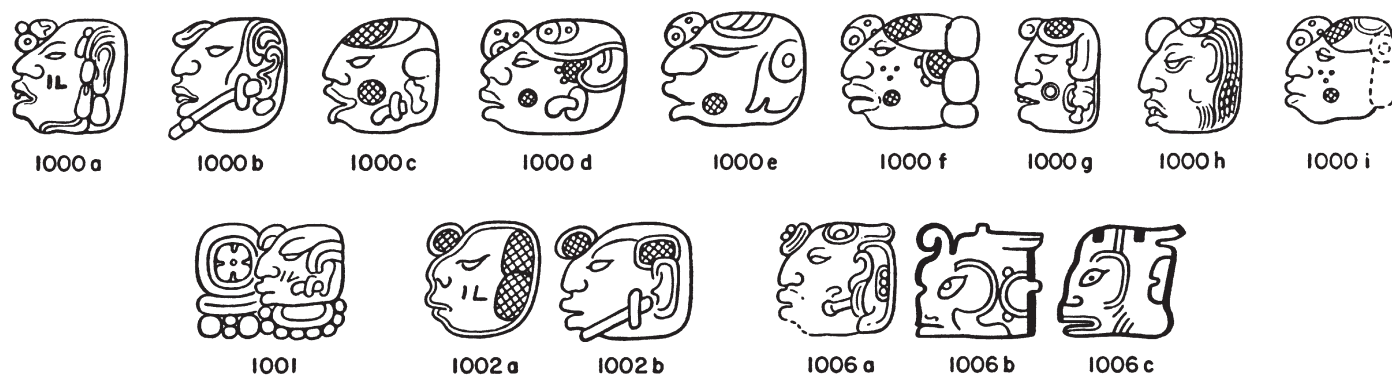


Figure 2. Thompson's portrait glyphs, T1000-T1002, T1006 (drawings by Avis Tulloch, after Thompson 1962:457).

Whatever the reasons behind Thompson's treatment of the portrait glyphs, it is now abundantly clear that he erred in grouping at least four distinct signs in his T1000 series (Figure 2). I will consider their proper visual separation briefly here, before turning to some of these observations in more detail below. To begin with T1000a, note the 'IL' marking on the cheek, the prominent tassel on the brow, and the jade jewelry woven into the long, flowing lock of hair. As we will see below, these are all diagnostic characteristics of the Tonsured Maize God. By contrast, T1000b has none of these characteristics, and is immediately recognizable as the Female portrait, even despite the absent 'IL' marking which this sign frequently albeit not invariably carries. Of the two well-known stylistic variants of the Female portrait—one depicting flowing hair, the other a tight bun at the back of the head and a tuft on the brow (black in painted texts, cross-hatched in sculpture)—Thompson illustrates the first in both T1000b and as part of a compound female title (in T1001), although the second receives its own designation (as T1002a-b). Once again we can observe that, although the Female portraits in T1001 and T1002a carry the 'IL' marking, those in T1000b and T1002b do not. Thompson's T1000c-g and T1000i all represent portraits of the Young Lord, long ago securely identified as **AJAW** signs (Mathews and Justeson 1984). Finally, T1000h represents still another maize deity, the Foliated Maize God. As we will discuss in more detail below, it exhibits that deity's characteristic maize foliation and maize cob, complete with infixed kernels, and should therefore have been grouped with T1006, which represents the same being. Note that both of the Classic forms of the Foliated Maize God (T1000h and T1006a) carry an infixed celt-like marking.

Several of Thompson's errors have been corrected in more recent catalogs of Maya signs, but his mistaken grouping of one or both of the Maize God signs with the Female Portrait glyph has persisted. Thus, while the consensus of opinion among epigraphers present at the 1979 Albany conference on Maya hieroglyphic writing was to recognize T1000c-g and T1000i as a distinct sign

reading **AJAW** (Justeson 1984:359-360), the same group nonetheless saw T1000a as a logograph for both "one" (i.e., **JUUN**) and "woman" (i.e., **IX**). Similarly, while Ringle and Smith-Stark (1996:353) also extracted the **AJAW** signs from T1000, they nonetheless retained both the T1000a Tonsured Maize God and T1000h Foliated Maize God as "female heads," and further compounded the problem by retiring the actual T1002a-b Female portrait, grouping these signs with the two Maize Gods as T1000j (1996:325, 352). More recently, Macri and Looper (2003:148) also recognized the **AJAW** signs as distinct, but they nonetheless renumbered Thompson's T1000a Tonsured Maize God as PC1, and erroneously assigned it the logographic values **NA'** 'mother,' **NAH** 'first,' and **IX** 'woman,' in addition to the syllabic value **na** (2003:134). As I observed some years ago (Zender 2006a), and as detailed below, only the syllabic value is correct, and the authors have missed the sign's actual logographic values of **IXIIM** and **JUUN**. As a result of this ongoing confusion between the Tonsured Maize God and Female portrait glyphs, none of the recent sign catalogs contains an entry for the actual Female portrait **IX**, one of the more common signs in the script.

Apart from the catalogs, recent popular introductions to Maya writing have continued the confusion of, especially, the Tonsured Maize God with the Female portrait, routinely reading the former as **IX**- or **IXIK** (Coe and Van Stone 2005:75, 163; Kettunen and Helmke 2010:140; Johnson 2013:45, 231, 280) and even, occasionally, as logographic **NA'** "lady" (Lacadena 1998:42; Johnson 2013:299). Following my own personal communications to the authors, there are now at least two recent introductory works on Maya writing that correctly distinguish the Tonsured Maize God and Female portrait glyphs (Kettunen and Helmke 2014:83; Tokovinine 2013:23). However, even here a **na** syllabic value has been incorrectly attributed to one of the examples of **IX** from Palenque's Tablet of the 96 Glyphs, J8a (Kettunen and Helmke 2014:76; see also Kettunen and Lacadena 2014:46, 50). Lists of errors make for dry reading and can seem uncharitable to colleagues. Yet

it is not my intention to cast aspersions on any of the scholars or publications cited above; my aim is only to note how widespread is the confusion between these two similar but nonetheless distinct portrait glyphs. One might reasonably ask how this state of affairs came about.

To answer this question, I turn now to a discussion of the literature relevant to the visual separation, phonetic reading, and significance of these three signs, interspersed with evidence for some new decipherments and interpretations.

Previous Scholarship and New Observations

The basic identification and visual separation of the head variant numerals for one and eight goes back to Joseph Goodman (1897:41-52) who even read them more or less correctly as *hun* and *uaxac*, respectively (1897:46).² Thompson (1950:Fig. 24) provides a useful collection of examples that amply demonstrate their visual and contextual separation. Yet it was also Goodman who began the misidentification of the Tonsured Maize God head variant of the numeral one as “the picture of a woman” (1897:42). Thompson (1950:131) fully endorsed this view, identifying the head variant numeral for one specifically as a portrait of “the moon goddess.” At the same time, it should also be noted that Thompson (1950:134) correctly recognized the head variant numeral for eight as a Maize God, invoking its clear ancestral connection to the codical God E first identified by Paul Schellhas (1904:24-25).

Karl Taube (1985) was the first to correctly perceive the Tonsured Maize God (his term), and to observe the clear visual distinctions between the iconography and portrait glyph of the Tonsured Maize God and those of the Foliated Maize God (also his term). Taube described the Tonsured Maize God as a young lord with an elongated head and a tonsured coiffure. ‘Corn curls’ are placed prominently on the god’s brow, or are infixed into the parietal region of his head. He also sports jade jewelry, either hanging like a tassel from his brow or interwoven with his silken locks. The portrait glyph of the Foliated Maize God, by contrast, is characterized by “a maize cob curling down from the back of the head” (Taube 1985:171), though it occasionally curls up and forward as well, lying flat atop the head. The cob incorporates the characteristic curls and silk of maize foliation and is usually inset with circular maize kernels. Either the cob or the head, and occasionally both, are frequently marked with the celt-derived label of bright, shiny, or wet objects (see Houston et al. 2006:16-17; Stone and Zender 2011:13, 71). Although Taube acknowledged that the Maize Gods exhibit several visual overlaps—such as the ‘IL’ element on the cheek: a marker of beauty, fecundity, and fertility also seen on the Wind God and Female portrait glyphs (see Stone and Zender 2011:35)—he explained these as a logical consequence of their being

distinct but nonetheless related “aspects of the same entity” (Taube 1985:181).³ I agree with Taube’s suggestion. I also strongly suspect that given their readings as **IXIIM** “grain corn” and **AJAN** “fresh ear of corn” (which will be discussed presently), these related entities probably represent different stages in the growth or harvesting of maize.

Building on Taube’s identifications, David Stuart (2005:180-183) was the first to observe the formal distinction between the Tonsured Maize God and the Female portrait glyphs. As he noted in his study of the name of the Triad Progenitor deity of Palenque, which incorporates a Tonsured Maize God portrait glyph:

there is perhaps an important visual distinction between the profile of the Palenque name and the female head **IX** or **IXIK**: while similar in many respects, it bears a distinctive forehead tassel that has more resemblance to the Classic form of the young tonsured maize god identified by Taube ... The visual clues are clear enough to suggest that previous identifications of the Progenitor as a “mother goddess” are incorrect, and that the name in fact incorporates the word or name for the Classic Maya maize deity. (Stuart 2005:181)

The visual distinction between these two signs is indeed important, and Stuart’s (2005:179, Fig. 149) tabulation of seven examples of the Triad Progenitor name provides particularly strong evidence supporting the separation of the Tonsured Maize God and Female portrait glyphs. Stuart’s demonstration in fact provided the spur for my own reassessment of these signs. Unfortunately, few other scholars have taken note of the implications of Stuart’s reasoning for the other instances of confusion between these signs.

Importantly, Stuart (2005:182) went on to observe that the Tonsured Maize God portrait glyph occasionally takes **i-** as an initial phonetic complement in non-numerical contexts on pottery.⁴ Coupled with Taube’s

² Comparative linguistic evidence suggests that the Classic Ch’olan values were *juun* “one” and *waxak* “eight” (see Kaufman 2003:1479; Kaufman and Norman 1984:137-138). Epigraphic evidence in support of *juun* “one” includes disharmonic spellings of **JUUN-ni** (Copan Altar J¹) and **ju-ni** (Comalcalco Urn 26, Spine 1). In late contexts, the sign can also substitute for earlier **HUUN** (e.g., Bonampak Sculptured Stone 5, and Copan, East Altar to Stela 5 [CPN 49]). Presently there are neither phonetic complements nor substitutions confirming *waxak* ‘eight.’

³ Taube (1985:174, Fig. 3d) notes two instances where the Tonsured Maize God supposedly substitutes for the Foliated Maize God as a head variant for the number eight. Both stem from the analysis by Mathews (1980:71-72) of Bonampak Sculptured Stone 1. Yet as Mathews noted, “the two dates ... cannot be deciphered with absolute assurance” (1980:71) nor without the assumption of several additional scribal errors. Given that these portrait glyphs do not otherwise substitute, I suspect that the Tonsured Maize God in fact provides the expected number *juun* “one” here.

⁴ The clearest contexts are on K791, K3120, K8498, and K9115. These K-prefixed numbers refer to the online Kerr Photographic Archive (accessible at www.mayavase.com).

observations regarding the clear maize associations of the Tonsured Maize God, the initial *i-* led Stuart to propose the decipherment of one of this glyph's logographic values as **IXIM** "maize" (see also Stuart 2006:197). In additional support for Stuart's proposal, there may also be a few contexts where the sign receives the final phonetic complement *-ma*, although modern repainting and unclear contexts make it difficult to be certain.⁵ In any case, Simon Martin (in Carrasco et al. 2009) has recently pointed out a fully syllabic rendering of the same term as *i-xi-ma*, *ixiim*, "grain corn" in the murals of Chiik Nahb Structure 1 at Calakmul. As Martin notes, the disharmonic spelling probably reflects a complex vowel in the Classic Ch'olan word *ixiim* "grain corn."⁶ For this reason, I transcribe this second logographic value of the Tonsured Maize God as **IXIIM**.

Importantly, when the Tonsured Maize God appears as an actor in the iconography, his image is frequently accompanied by the short caption 1-**IXIIM**, Juun Ixiim, presumably meaning something like "One Maize" or "One Grain Corn."⁷ It is intriguing therefore that the Tonsured Maize God portrait glyph carries the values **JUUN** and **IXIIM**. Presumably, the sign was recognized as the actual portrait of the deity known as Juun Ixiim and could therefore communicate both values, though there is no indication that the sign could read ***JUUNIXIIM**. In order to communicate the full name, it seems always to have required the prefixed dot "one." This behavior is remarkably similar to that of the portrait glyph of the jaguar-spotted Hero Twin Yax Baluun, which carries the logographic value **YAX** "green, blue" (see Lounsbury 1989:84-85) in addition to **BALUUN** "nine" (see Miller and Martin 2004:281, Note 13).⁸ The logic is straightforward, since the sign clearly represents an actual portrait of the deity known as Yax Baluun. Yet, as with the Tonsured Maize God, there is no evidence that the sign could be read ***YAXBALUUN**, as it apparently requires an explicit **YAX** prefix to communicate the full name of the god.⁹

The Female profile in Classic inscriptions was independently identified by Tatiana Proskouriakoff (1960, 1961) and Heinrich Berlin (1959). Both had been struck by the feminine features of the sign—namely that it portrayed "the head of a young person" with "long hair" (Berlin 1959:5), or bearing "a hatched oval on the forehead, which corresponds to the black spot used in the codices to identify women, or by a more naturalistic depiction of a lock of hair" (Proskouriakoff 1960:471). Berlin noted that his proposed feminine prefix appeared in captions associated with arguably female portraits on the sides of the sarcophagus lid of Palenque's Temple of the Inscription tomb—so identified because of their long hair and covered breasts (Berlin 1959:5)—and he observed that the sign never appeared in the captions associated with male portraits (1959:6). Similarly, Proskouriakoff observed that Piedras Negras Stelae

1 and 3 contained the same date and event: the birth of an individual whose name contained the proposed feminine marker, and who was moreover "dressed in a long robe" on the back of both monuments (1961:16). Proskouriakoff regarded this as considerable evidence that "all of the robed figures at Piedras Negras present women" (1960:461). Even more compellingly, she drew further attention to Piedras Negras Stela 3,

... which shows a small figure seated beside the one in the robe, [while] the text contains a second birth date, thirty-three years later than the first and only three years earlier than the final date on the stela. This later birth date is followed by a different set of name glyphs ..., though they, too, are prefixed by female faces. How can one reasonably doubt that both robed figures are portraits of the same person, that the person is a woman, and that her little daughter, not yet born when Stela 1 was erected, is shown on Stela 3? (Proskouriakoff 1961:16)

How indeed? Proskouriakoff was absolutely correct, and today we know these two women as Ix Winikhaab Ajaw (long nicknamed 'Lady Katun') and her daughter Ix Juuntahn Ahk (Lady Precious Turtle).

As for the phonetic reading of the Female portrait glyph, it was Berlin (1959:5) who first made the connection to the widespread *ix-* feminine prefix: "it has the functions of a glyphic indicator for female individuals. Since the feminine prefix in the Maya language is *Ix*, I will call this head—when it occurs in a context I believe refers to feminine individuals—provisionally, *IX* ... this article is obligatory for women." These observations were very perceptive, and there is now an abundance of evidence that **IX** is indeed the logographic value of Berlin's feminine prefix. As David Stuart (1998:386, Note 7) first observed, the syllables *i-xi* substitute for the Female profile in the name of a royal woman on

⁵ See K1202, K3120, K8498, and K8740 for several examples.

⁶ Kaufman has reconstructed Proto-Mayan **ixi'm* "maize" (2003:1034-1036) and Proto-Ch'olan **ixim* "grain corn" (Kaufman and Norman 1984:121). Yet it now seems that Proto-Ch'olan may have conserved vowel length (Houston et al. 2004), and other Proto-Mayan forms with preconsonantal glottal stops are consistently written disharmonically in Classic inscriptions (e.g., pM **ba'h* "gopher" as **BAAH-hi**, pM **hu'η* "paper" as **HUUN-na/hu-na**, and pM **k'e'n* "cave" as **CH'EEN-na**). For these reasons, I suppose that pM **ixi'm* developed as Proto-Ch'olan-Tzeltalan **ixiim* and was retained as such into the Late Classic period.

⁷ See for example K1004, K1892, K6979, and K8494.

⁸ Lounsbury (1989:84-85) first noted the **YAX** value of this sign on Copan Stela N, in the context of the name of Yax Pasaj Chan Yopaat. A full figure example can also be found on the Copan Corte Altar (see Stuart 2008). Other examples include the spelling of the deity name Yax Ha'al Chahk on the Trocadero Vessel (cf. Boot 2004), an emblem glyph on the Topoxte bone awl (**K'UH-YAX?-AJAW**), and an unclear context (**a-ya-YAX?**) on the Hieroglyphic Stairway of Machaquila Structure 4, Block F.

⁹ See for example K1004, K1183, K1222, K1892, K7821, and Quirigua Stela C, North (L1).

Bonampak Sculptured Stone 4 (see also Wagner 2003:2, Fig. 3; Arrellano Hernández 1998:Fig. 14).¹⁰ Stuart also noted several instances where the Female profile glyph **IX** takes the suffixed phonetic sign **-ki** in nominal contexts, suggesting the widespread noun *ixik* “woman.”¹¹ There also seem to be some supportive initial phonetic complements. Wagner (2003:2) notes an initial **i-** complement for the Female profile in a woman’s name in the Akab Dzib inscription at Chichen Itza (front, G2a). Finally, the Female sign apparently receives both initial **i-** and final **-ki** syllables on La Corona Hieroglyphic Stairway 1 (Block 4). Taken together, there now seems little doubt that the Female portrait had a core logographic value of **IX**.

Yet there has always been substantial confusion of the Female portrait glyph with that of the Tonsured Maize God, and this is the origin of the frequent (but incorrect) supposition that the Female portrait carried the syllabic value **na**, or the logographic value **NA** “mother.” As we have seen, Goodman and Thompson saw the Tonsured Maize God as either a human female or a goddess. And although Berlin (1959:5) recognized the Female portrait glyph as a feminine prefix, he nonetheless equated it with the head variant of the numeral one (which he also assumed to represent a female).¹² As we will see, Berlin’s presumed equivalency has proven particularly influential.

The **na** syllabic value for the Tonsured Maize God was first set forth in a brilliant article by Floyd Lounsbury (1984) in which he demonstrated the equivalence of T23 (the well-known **na** affix), T537 (Thompson’s ‘Xipe’), and T1000a (the Foliated Maize God) as syllabic **na** by noting their substitution in multiple contexts, such as Glyph F of the secondary series (*ti’ huun*), the passive verbal expression governing the presentation of captives and royal brides (*na’waj*), and the Classic term for “sky” (*chan*) among others. As Lounsbury (1984:169) acknowledged, Thompson was actually the first to demonstrate the interchangeability and therefore equivalence of T23 and T1000a. In his own discussion of the variant forms of Glyph F (now known to read **TI’-HUUN-na**),

¹⁰ Mora-Marín (2008:199) misinterprets the Bonampak spelling **K’UH-IX-i-xi K’AN-to-ko-sa** as an example of an eclectic principle he refers to as ‘full phonetic complementation,’ arguing that the Female profile **IX** is phonetically complemented by both **-i** and **-xi**. Yet this spelling has many parallels in other monuments from the region and it must involve two distinct noun phrases in apposition, namely **K’UH-IX** (*k’uh[ul] ix[ik]*, “holy woman”) followed by **i-xi K’AN-to-ko-sa** (*ix K’an Tok Sas*, her name). The *k’uhul* requires a noun to modify, and the female name requires its obligatory feminine prefix.

¹¹ Good examples of the **IX-ki** spelling for *ixik* “woman” can be seen on Yaxchilan Lintels 32 (I1) and 56 (I2a). Kaufman has reconstructed Proto-Ch’olan **ixik* “woman” (Kaufman and Norman 1984:121) and Proto-Mayan **ix-oq* “woman” (Kaufman 1964:117).

¹² In Berlin’s (1959:5) words, “[t]his head seems to be identical to that of the numeral one, the head of the young goddess” (1959:5).

Thompson observed that:

[t]his sign usually has a postfix [T23] which I have termed *te*, but occasionally the corresponding head form [T1000a], which is almost certainly that of the maize god, replaces it. (Thompson 1950:38; figure and page references omitted, T-numbers added)

In his commentary on these insights and their extension to other allographs of the syllable **na**, Lounsbury (1984:169) gave Thompson appropriate credit for recognizing the equivalency of T23 and T1000a, but he also observed that “[t]he values that Thompson ascribed to these signs, namely a reading of *te* for T23, and an identification of T1000a/b as the maize god, can now be ignored; neither is tenable.” In retrospect, Lounsbury was correct to reject Thompson’s *te* reading, since that suggestion rests, among other things, on a series of mistaken substitutions with T87 **TE**’ (see Thompson 1950:283). But Lounsbury should not have equated T1000a and T1000b, and he ought to have considered Thompson’s Maize God identification more seriously, for this has proven correct.

Although Lounsbury had correctly deduced one of the values of T1000a (namely syllabic **na**), his discussion of a key context at Copan illustrates the continuing influence of Goodman, Thompson, and Berlin (Figure 3). Thus, although T1000a is clearly used as a phonetic complement to **CHAN** in the spelling **YAX-PAS sa-ja CHAN-na YOPAAT** (for Yax Pasaj Chan Yopaat, the name of the sixteenth king of Copan), Lounsbury mistakenly accepted Berlin’s equation of the sign with the Female portrait, observing that

... here we have again the snake-head sign ... substituting for the sky sign; but instead of the phonetic complement *na* [T23] which both of those signs normally have, we see here the snake head compounded with a human head [T1000a], commonly called simply the ‘female head’ because of its frequent use as a title preceding feminine names (first noted, I believe, by Heinrich Berlin [1959]). (Lounsbury 1989:83; italics, square-brackets, and T-numbers in the original)

Lounsbury was undoubtedly correct to identify this sign with Thompson’s T1000a, and to recognize its value as syllabic **na**, here employed as a redundant phonetic complement to **CHAN**. Nonetheless, he was incorrect to associate it with the Female portrait for which Berlin (1959) had proposed the **IX** value. The prominent ‘corn curls’ and jewelry in the hair clearly identify this as the

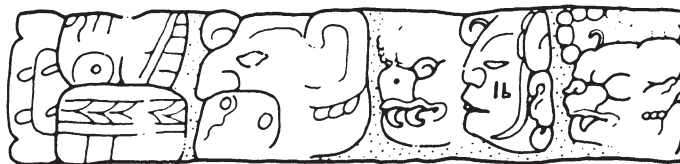


Figure 3. The name of Yax Pasaj Chan Yopaat, Copan Receiving Stand (drawing courtesy of Linda Schele, inked by Mark Van Stone).

Tonsured Maize God.

In order to harmonize the observed **na** syllabic value with the assumed association with a feminine prefix, Lounsbury argued that “[a]s a logogram its reading must have been *na’*, a word whose common meaning was ‘mother,’ but which in the inscriptions was used also as a title for ladies of high status” (1989:83). Lounsbury (1997:35, Table 2) repeated this view again in the 1990s, and it has been remarkably influential (e.g., Johnson 2013:299; Lacadena 1998:42; Zender 1999:38). David Stuart (1998:386, Note 7) still had Lounsbury’s equation in mind when he wrote about the Female portrait glyph that “[t]he head sign is certainly **na** or **NAH** in numerous contexts.” As we have seen, Stuart would later question the equation of the Female and Tonsured Maize God portraits in the context of the Triad Progenitor name at Palenque, but Lounsbury’s proposed connection between the **na** syllabic value and the Female portrait has proven more difficult to disentangle.

Yet in retrospect it must be said that Lounsbury’s argument was a surprisingly weak one. To begin with, consider that the word *na’* specifically means “mother” in Ch’olan-Tzeltalan and Yucatekan languages (Kaufman 2003:91). It is true that the word has undergone some semantic broadening in Mocho, where it also means “older sister” and “aunt”, but even there the focus remains a maternal one, highlighting the care-taking role of older female kin (Kaufman 2003:91). These pan-Mayan glosses account for the remarkably consensual proto-Mayan reconstruction of **na’* “mother” (Brown and Wichmann 2004:174; Kaufman 1964:116, 2003:91). Given these data, it seems unlikely that a word primarily meaning “mother” could have developed into an ascribed title for ladies of high status during the Classic period only to once again take on its original meaning of “mother” in all of the descendant languages.

Furthermore, the actual contexts of the feminine prefix in Classic inscriptions do not provide much support for Lounsbury’s idea that a basic term for “mother” had developed into a general “title for ladies of high status.” For one thing, even very young female children appear with this common prefix—e.g., the three-year-old Ix Juuntahn Ahk of Piedras Negras (see Stela 3, C7-C8 [CMHI 9:26]). A three-year-old girl bearing a widespread word for “mother” as a high, ascribed title for “noble woman” (or the like) seems rather unlikely. Even more damaging, however, is that the element repeats frequently, prefixing each independent constituent of women’s personal names, paternal affiliations, and titles throughout the inscriptions. This is the behavior we would expect from a preclitic, such as the widespread *ix-* “female prefix” (Kaufman and Norman 1984:139), not from a common noun such as *na’* “mother,” or whatever hypothetical high title might have been derived from it. In any case, and all apart from the inherent unlikelihood of a generic female title derived from the specific

noun “mother,” there no longer remain any epigraphic grounds to sustain a connection between the **na** value and the Female portrait.

Given that the Tonsured Maize God can now be seen to carry the syllabic value **na** in addition to the logographic values **JUUN** and **IXIIM**, and that many syllabic signs were derived acrophonically from the opening syllable of earlier logograms (Campbell 1984:12; Houston et al. 2000:328; Zender 1999:38-41), is there perhaps a relevant source lexeme for that sound? The best candidate would appear to be Proto-Mayan **ɣal* “mazorca,” with the descendent form *nal* in most of the Ch’olan and Yucatekan languages (Kaufman 2003:1063; Kaufman and Norman 1984:126). The reference is to a mature ear of corn, plucked after the cornstalks have been doubled over. It seems reasonable to suppose that **NAL** may have been either an earlier or even contemporary logographic value of the Tonsured Maize God sign, and it seems apposite that one and the same sign might conceivably have meant *ixiim* “grain corn” and *nal* “mature ear of corn.” But we should take a lesson from the complex history of decipherment outlined above and not assume this value until such time as clear phonetic evidence presents itself.¹³

This leaves only the Foliated Maize God for us to consider. As noted above, this sign’s role as the head variant numeral eight has been known since the late nineteenth century, and **WAXAK** seems a strong reading given the terms for “eight” in the Ch’olan and Yucatekan languages. Yet the sign also appears in non-numerical contexts, where it takes phonetic complements that suggest still another logographic value. Thus, the sign at least twice takes an optional initial **a-** complement.¹⁴ It also frequently appears with an optional final **-na** complement.¹⁵ On the basis of the phonetic evidence, coupled with the clear maize associations of the sign, I proposed a value of **AJAN** some years ago (Zender 2008; Stone and Zender 2011:21-22). The word descends from Proto-Mayan **ajn* (Kaufman 2003:1159) to Proto-Ch’olan **ajän* (cf. Kaufman and Norman 1984:115) as a term for “elote” or “roasting ear of maize.” This refers to the fresh ear of corn, still on the plant—a particularly satisfying outcome given the iconography of the Foliated Maize God sign.

Considered as a whole, the case for the Foliated

¹³ There are a few contexts where the Tonsured Maize God portrait glyph takes a suffixed **-la**—e.g., the sarcophagus lid of Palenque’s Temple of Inscriptions tomb (see Stuart 2005:Fig. 146a)—though whether this merely represents **na-la** or some slight evidence for the hypothetical **NAL-la** is impossible to say.

¹⁴ The Foliated Maize God portrait appears with an initial T229 **a-** on Chinika Throne 1. It appears with both T12 **a-** and T23 **-na** on Tamarindito Hieroglyphic Stairway 3, Step 6 (C1).

¹⁵ The Foliated Maize God takes clear final **-na** complements on K8017, Copan Stela N (West face), Kuna-Lacanja Lintel 1 (inset caption), and Tikal Temple 1, Lintel 3 (F5), among a few other places.

Maize God as **AJAN** seems reasonably strong. Although speculative, I also wonder whether this entity was termed *Waxak Ajan* at some point in his career. Unfortunately, as Taube (1985:181) long ago noted, “whereas the tonsured lord is one of the principal characters depicted on Late Classic vessels, there is apparently no representation of the foliated character in any of the ceramic scenes.” This makes fresh insights into the role and mythology of this character somewhat difficult to achieve. Nonetheless, we now know that there were at least two Maize Gods present in Classic times, and it is evidently the Foliated Maize God who survives into the Postclassic codices as Schellhas’s God E.

And there are still other interesting implications stemming from the separation of these three portrait signs. For one, while several scholars (Schele et al. 1992:4-5; Saturno et al. 2012) have seen a role for the moon goddess in the Classic lunar series, Zender and Skidmore (2012:9) have pointed out that the young lunar patron is best identified as the Tonsured Maize God in his lunar aspect. On K5166, both the Tonsured Maize God (sporting a lunar crescent) and the Moon Goddess appear, along with other lunar patrons. And in several key Glyph C contexts this lunar patron sports the Tonsured Maize God’s characteristic forehead jewel or ‘corn curl’ (e.g., Tikal Marcador, A7; Copan HS, date 24; Quirigua St F, East, E7). The complexities of the interpenetration of maize and lunar iconography are beyond the scope of this paper, but many previously unproblematic examples of the Moon Goddess will now need to be reassessed. Similarly, while MatthewLooper (2002) has made a case for the existence of a Classic

Maya third gender on the basis of rulers embodying or impersonating supposedly androgynous Maize Gods and masculine Moon Goddesses, the aforementioned reassessment will have an impact on those associations as well. Finally, just as Stuart (2005) was brought to the conclusion that Palenque’s long-accepted “Mother Goddess” was actually an aspect of the Tonsured Maize God, so too will Bassie-Sweet’s (2000) “Goddess of the Number One” and “Na Goddess” require reassessment in light of the deity’s male gender.

The Signs in Context

Now that we have surveyed the literature bearing on the three portrait glyphs and discussed some novel readings and interpretations, it will be helpful to examine several examples in context. It would be ideal if we could find a single lengthy text, the product of a lone scribe, where all three signs occur, and with all of six of their documented reading values. Unfortunately no such text exists. As a pale but hopefully informative substitute, I have selected some roughly contemporary late eighth-century texts: two of them carved/incised, the other painted. Between them, they document all but one of the proposed reading values.

We begin with the Tablet of the 96 Glyphs from Palenque (Figure 4). This masterwork was discovered in rubble at the east base of the Palace tower by Miguel Ángel Fernández in 1935 (see Fernández 1985) and was first studied epigraphically by J. Eric S. Thompson (1950:Fig. 55) and Heinrich Berlin (1968). It opens with a reference to the end of the eleventh katun (in AD 652)

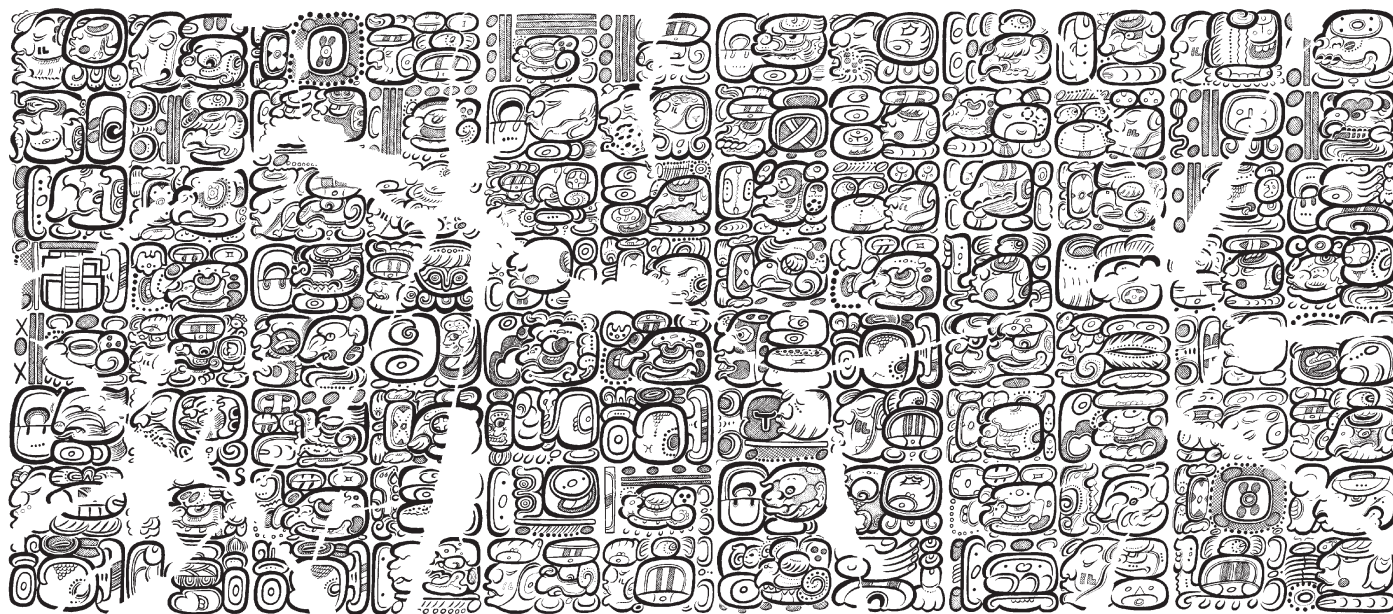


Figure 4. The Tablet of the 96 Glyphs, Palenque (drawing courtesy Simon Martin).

and the dedication of House E of the Palace (654), both by K'inich Janaab Pakal I, before turning to the accessions of his second son K'inich K'an Joy Chitam II (702), his grandson K'inich Ahkal Mo' Nahb III (721), and his great grandson K'inich K'uk' Bahlam II (764), and then concludes with the commemoration of the first katun anniversary of the latter on November 25, AD 783, which occasioned the carving of the text.

As a result of almost eight decades of analysis we now understand this text quite well, and it proves to contain five examples of the three portrait glyphs under study here (Figure 5). Instructively, the first two examples both depict the Foliated Maize God in his role as the head variant of the number eight, **WAXAK** (Figures 5a-b). While both heads display the diagnostic long, foliated cob—this element is unfailingly present—the first example incorporates a forehead ‘corn curl,’ whereas the latter instead infixes the marker of shininess on the cob and sports an earspool assemblage in addition to a long wisp of silken hair. Note especially that neither of these examples includes the ‘IL’ marker on the cheek, even though numerous other examples do so (e.g., Thompson 1950:Fig. 24). This range of variation turns out to be fairly typical of this sign, and this is so regardless of its function as **WAXAK** or **AJAN**. The next example is the Tonsured Maize God in his role as the head variant numeral one, **JUUN** (Figure 5c). Note the prominent ‘IL’ on the cheek, and the long silken hair with incorporated jade tassels. The frequent ‘corn curl’ seen on other examples is not present here (e.g., Thompson 1950:Fig. 24-1), but it is the jade jewelry which is most diagnostic of the sign, either as a single prominent tassel on the brow or (as here) incorporated into the hair. The final two examples both represent the Female portrait glyph **IX** (Figures 5d-e), providing the female prefix of names and titles. The ‘IL’ is again prominent, as is long flowing hair, and there are no corn cobs, ‘corn curls,’ or jade tassels in evidence. For the scribe who composed the Tablet of the 96 Glyphs, there was no doubt about the visual separation of these three portrait glyphs.¹⁶

Nor is this monument unique in that respect. Other carved and incised texts could be cited to demonstrate the consistency of this separation. As one example, consider the carved bench from Copan Str. 9N-82, first studied by Berthold Riese (1989). Dedicated on July 11, AD 781, this monument was closely contemporary with Palenque's Tablet of the 96 Glyphs (Stuart 1992:180; see also Zender 2014:267-269). Here, two full-figure Tonsured Maize Gods provide the syllable **na**: the first in the name **ma-k'a-na-CHAN-la**, Mak'an Chanal (Figure 6a); the other in the possessed title **ya-K'UH-na**, *yajk'uhuun* ‘his priest’ (Figure 6b). Nearby, a full-figure Female (**IX**) appears in a parentage statement, providing the feminine prefix for a royal woman's title (Figure 6c). The Maize Gods both

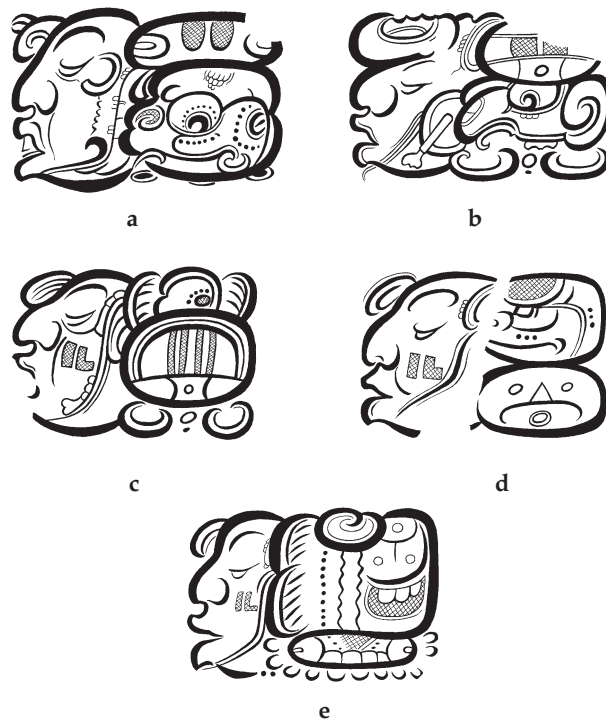


Figure 5. Maize Gods and Female portraits on the Tablet of the 96 Glyphs: (a) Foliated Maize God **WAXAK** in 8 Ceh spelling (**WAXAK-CHAK-SIHOOM-ma**), B1; (b) Foliated Maize God **WAXAK** in 8 Tuns spelling (**WAXAK-HAAB-ya**), C3; (c) Tonsured Maize God **JUUN** in 1 Katun spelling (**JUUN-WINIK-HAAB-ya**), H6; (d) Female portrait **IX** as prefix to Lady Tz'ikin-? (**IX-TZ'IKIN?-?**), J8; (e) Female portrait **IX** as prefix to Lady Salaj Juj (**IX-sa-[la]ja-²ju**), K1 (drawings courtesy of Simon Martin).

have tonsures and wear loincloths, whereas the Female has a long skirt and distinctive hairstyle. Once again, the sculptor of this bench has treated these signs very differently from one another.

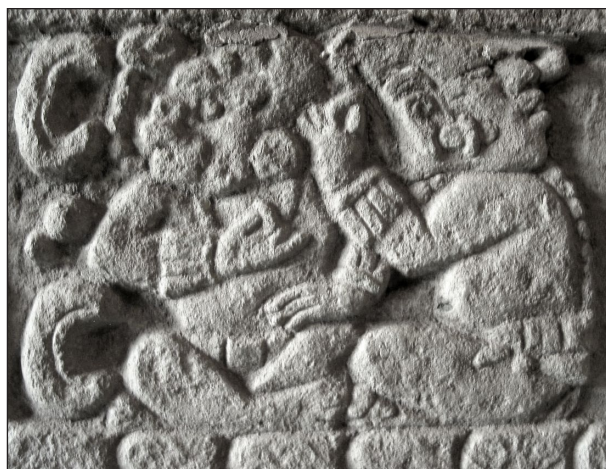
Let us turn now to some examples of these signs from contemporary painted texts. Figure 7 presents Justin Kerr's rollout photograph of K1383, an unprovenanced black-on-white vessel in a private collection. Although damaged and with several missing pieces, the repairs seem to be slight, and there are no obvious indications of repainting.¹⁷ The style of the vase is consistent

¹⁶ Although it may seem conspicuous that only the Tonsured Maize God and Female receive the ‘IL’ marker on the Tablet of the 96 Glyphs, note that it appears with several other head variants, such as the numbers 2 and 12, as well as the Wind God **IK'** and the personified Tamale sign **OHL** (e.g., at A1a, B5a, D3a, F2b, E8a, F8a, H3b, and J2b).

¹⁷ I should note that the rollout of K1383 presented as Figure 7 differs in certain respects from that available online, for I have shifted several sherds into what I think are more promising positions (note especially the wings and tail-feathers of the leftmost quetzal). Several gaps and uncertain placements nonetheless remain.



a



b



c

Figure 6. Maize Gods and Female portraits from the hieroglyphic bench, Copan Str. 9N-82: (a) Tonsured Maize God **na** (**ma-k'a-na-CHAN-la**), Block D; (b) Tonsured Maize God **na** (**ya-K'UH-na**), Block L; (c) Female portrait **IX** (**ya-YAL-la-IX-K'IN?-AJAW**), Block E (photographs by the author).

with the mid- to late-eighth century AD, probably not significantly earlier than either of the two monuments discussed above. The owner or commissioner of the vessel is identified as one Tzakaj K'awiil, a lord of Río Azul, in northeastern Peten, Guatemala.

The text is a rather formulaic Primary Standard Sequence giving way to a deity impersonation phrase and parentage statement, and it contains five examples of two of the portrait glyphs. The first (Figure 8a), is a Tonsured Maize God providing the syllable **na** in the possessed derived noun **u-tz'i-bi na-ja**, *utz'i[h]bnaja[l]*, “(it is) the writing of” (Lacadena 2004:187-189). The second (Figure 8b), is also a Tonsured Maize God, but here he provides the logogram **IXIIM** in the prepositional phrase **ta-IXIIM TE'-le [ka-ka-wa]**, *ta ixiimte'el [kakaw]*, “for [chocolate] of the Maize Tree” (Martin 2006; Stuart 2006). Despite the breakage, it is clear that these two portraits are practically identical. Each has an ‘IL’ marking on the cheek, a ‘corn curl’ at the back of the head, long silken hair, and a large earflare. For the scribe who painted this vessel, there was no question that it was the Tonsured Maize God who carried the values **na** and **IXIIM**. The next three heads (Figures 8c-e) reveal how very differently this scribe rendered the Female portrait glyph, which always has a black tuft of hair on the brow or a tight black bun at the back of the head, from which long thin hairs may or may not tumble down across the face. The only real point of similarity is the widely-shared ‘IL’ cheek symbol.¹⁸ Note also how the first Female portrait (Figure 8c) appears in a modified context and so must be transliterated as the noun *ixik* “woman”: **?-la-K'UH-IX**, ... *k'uh[ul] ix[ik]*, “... holy woman.” By contrast, the other two provide only the female prefix *ix-* of names and titles. This is a common abbreviational convention of Classic Maya writing (Zender 2010:4-5): logograms frequently provide only the root of various derived and inflected lexemes, as when **K'UH** alone is written for *k'uh[ul]* “holy”, **BAJ** for *baj[laj]* “hammering” and **HUL** for *hul[i]* “he arrived” (see Zender 2014 for additional examples).

These three largely contemporary eighth-century texts hardly provide a thorough survey of Maya inscriptions containing examples of these three portrait glyphs. Yet they do hail from geographically diverse regions of Late Classic Maya civilization—Chiapas (Mexico), Copan (Honduras), and Peten (Guatemala)—and it is encouraging to find that the same canons seem to have

¹⁸ Lest it be wondered whether K1383 is unique in the extent to which its painter distinguished the Tonsured Maize God and Female portrait glyphs, I invite the reader to compare the renderings of **IXIIM/na** and **IX** on the following vessels as well: K1941, K2777, K4340, and K5976. In each of these cases (and others besides), Late Classic scribes were consistent in their visual separation of these signs.

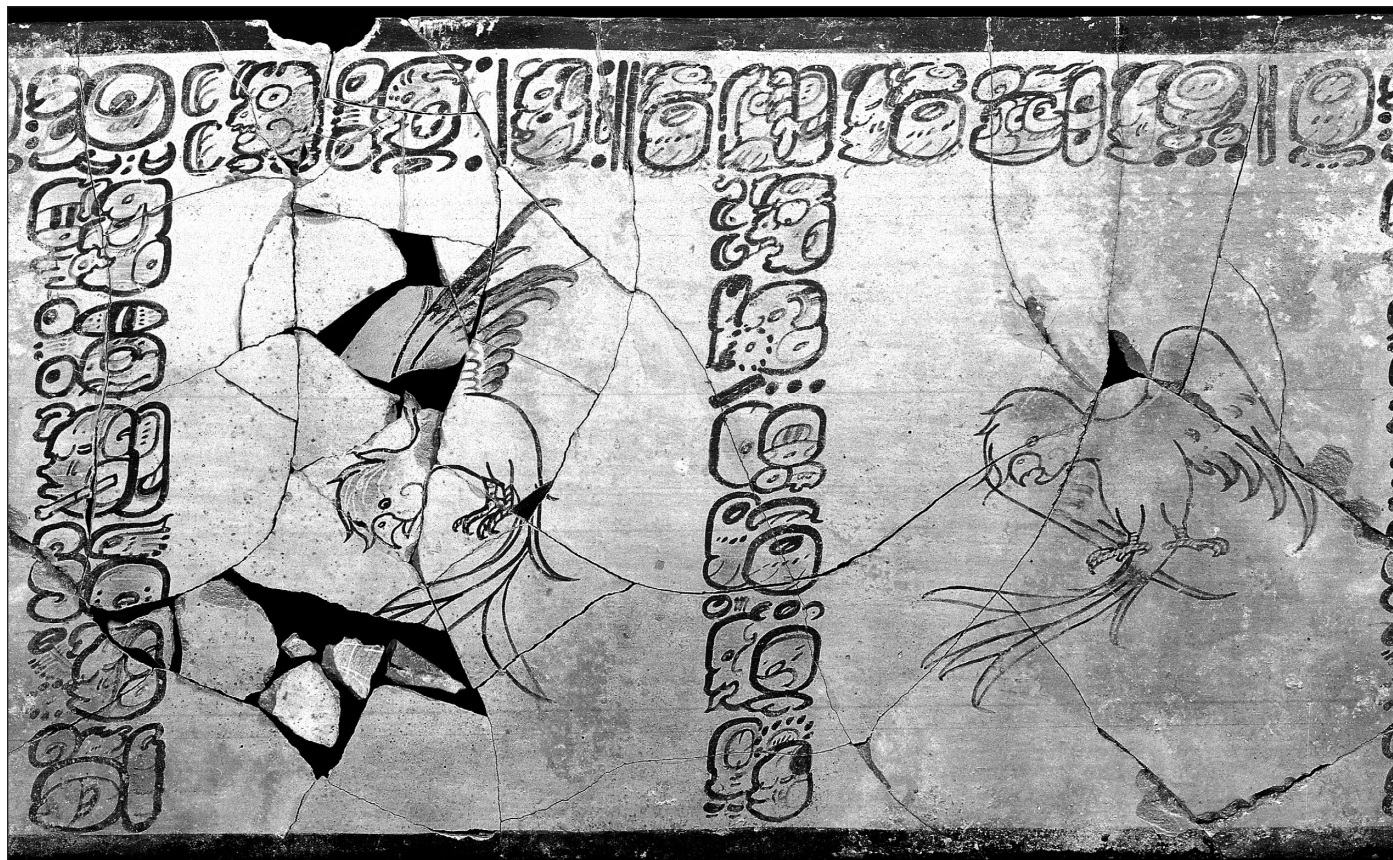


Figure 7. Unprovenanced Late Classic vessel naming a Río Azul lord, K1383 (photograph courtesy of Justin Kerr, with some modifications by the author).

been followed in each of these places. Moreover, numerous other texts from earlier and later time periods have been considered in the preceding historical commentary on the decipherment and separation of these signs, and none of them contradict the observations made here. My own survey of published and unpublished Maya inscriptions finds no additional contradictions, but rather

much to support the distributions, reading values, and significance of these signs proposed at the outset of the paper. Only time and the discovery of new inscriptions can say whether there are additional surprises in store. In the meantime, I hope that my colleagues find these observations useful, and I look forward to their responses and observations.

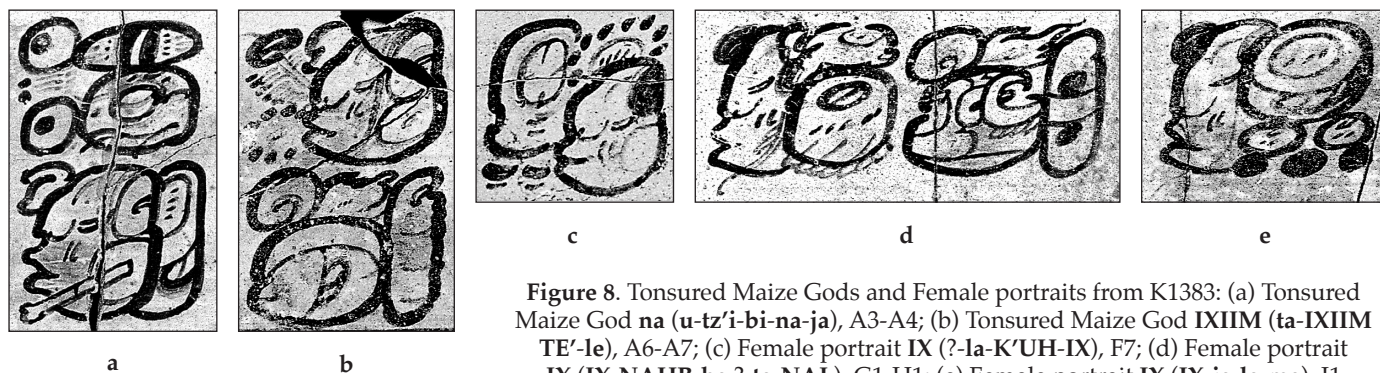


Figure 8. Tonsured Maize Gods and Female portraits from K1383: (a) Tonsured Maize God *na* (*u-tz'i-bi-na-ja*), A3-A4; (b) Tonsured Maize God *IXIIM* (*ta-IXIIM TE'-le*), A6-A7; (c) Female portrait *IX* (*?-la-K'UH-IX*), F7; (d) Female portrait *IX* (*IX-NAHB-ba ?-ta-NAL*), G1-H1; (e) Female portrait *IX* (*IX-ja-la-ma*), I1 (photographs courtesy of Justin Kerr).

References

- Arellano Hernández, Alfonso
1998 Diálogo con los abuelos. In *La pintura mural prehispánica en México. Área maya*. Bonampak. *Estudios* 2(2), edited by Leticia Staines Cicero, pp. 255-297. Universidad Nacional Autónoma de México, Mexico.
- Bassie-Sweet, Karen
2000 Corn Deities and the Complementary Male/Female Principle. Paper presented at the Third Palenque Round Table, July 1999. Version available: www.mesoweb.com/features/bassie/corn/media/corn_deities.pdf.
- Berlin, Heinrich
1959 Glifos nominales en el Sarcófago de Palenque: Un ensayo. *Humanidades* 2(10):1-8. Universidad de San Carlos, Guatemala.
1968 The Tablet of the 96 Glyphs at Palenque, Chiapas, Mexico. Preprint of *Archaeological Studies in Middle America*, pp. 135-159. Publication 26. Middle American Research Institute, Tulane University, New Orleans.
- Bíró, Péter, and Peter Mathews
2005 Classic Maya Names: Female Names. Who's Who in the Classic Maya World. *FAMSI*: research.famsi.org/whos_who/maya_names_female.htm.
- Boot, Erik
2004 The Nominal *Yaxha'(al) Chak* on Classic Maya Ceramics and a Possible Cephalomorphic Variant for YAX. Manuscript.
- Brown, Cecil H., and Søren Wichmann
2004 Proto-Mayan Syllable Nuclei. *International Journal of American Linguistics* 70(2):128-186.
- Campbell, Lyle
1984 The Implications of Maya Historical Linguistics for Glyphic Research. In *Phoneticism in Maya Hieroglyphic Writing*, edited by John S. Justeson and Lyle Campbell, pp. 1-16. Institute for Mesoamerican Studies, State University of New York, Albany.
- Carrasco, Ramón, Verónica A. Vázquez, and Simon Martin
2009 Daily Life of the Ancient Maya Recorded on Murals at Calakmul, Mexico. *Proceedings of the National Academy of Sciences (PNAS)* 106(46):19245-19249.
- Coe, Michael D., and Mark Van Stone
2005 *Reading the Maya Glyphs*. 2nd ed. Thames and Hudson, New York.
- Fernández, Miguel Ángel
1985 Palenque, Chiapas, informe de la temporada de 1935. In *Palenque 1926-1945*, edited by Roberto García Moll, pp. 171-176. Instituto Nacional de Antropología e Historia, Mexico.
- Goodman, Joseph T.
1897 The Archaic Maya Inscriptions. Appendix to *Biologia Centrali-Americana; or Contributions to the Knowledge of the Fauna and Flora of Mexico and Central America*. *Archaeology*, by Alfred P. Maudslay. 5 vols, 1889-1902. R. H. Porter and Dulau, London.
- Houston, Stephen D.
2006 *The Memory of Bones: Body, Being, and Experience among the Classic Maya*. University of Texas Press, Austin.
- Houston, Stephen, John Robertson, and David Stuart
2000 The Language of Classic Maya Inscriptions. *Current Anthropology* 41(3):321-356.
- Houston, Stephen, David Stuart, and John Robertson
2004 Disharmony in Maya Hieroglyphic Writing: Linguistic Change and Continuity in Classic Society. In *The Linguistics of Maya Writing*, edited by Søren Wichmann, pp. 83-101. University of Utah Press, Salt Lake City.
- Johnson, Scott A. J.
2013 *Translating Maya Hieroglyphs*. University of Oklahoma Press, Norman.
- Justeson, John S.
1984 Appendix B: Interpretations of Mayan Hieroglyphs. In *Phoneticism in Maya Hieroglyphic Writing*, edited by John S. Justeson and Lyle Campbell, pp. 315-362. Institute for Mesoamerican Studies, State University of New York, Albany.
- Kaufman, Terrence S.
1964 Materiales lingüísticos para el estudio de las relaciones internas y externas de la familia de idiomas mayanos. In *Desarrollo cultural de los mayas*, edited by Evon Z. Vogt and Alberto Ruz, pp. 81-136. Universidad Nacional Autónoma de México, Mexico.
2003 A Preliminary Mayan Etymological Dictionary. *FAMSI*: www.famsi.org/reports/01051/pmed.pdf.
- Kaufman, Terrence S., and William M. Norman
1984 An Outline of Proto-Cholan Phonology, Morphology and Vocabulary. In *Phoneticism in Maya Hieroglyphic Writing*, edited by John S. Justeson and Lyle Campbell, pp. 77-166. Institute for Mesoamerican Studies, State University of New York, Albany.

- Kettunen, Harri, and Christophe Helmke
2010 *La escritura jeroglífica maya*. Instituto Iberoamericano de Finlandia, Madrid.
- Kettunen, Harri, and Christophe Helmke
2014 Introduction to Maya Hieroglyphic Writing. 14th ed. *Wayeb*: www.wayeb.org/download/resources/wh2014english.pdf.
- Kettunen, Harri, and Alfonso Lacadena
2014 Methods in Maya Hieroglyphic Studies. Workbook for the Advanced Workshop on Maya Hieroglyphic Writing, 19th European Maya Conference, November 17-20, Bratislava, Slovakia.
- Kettunen, Harri, and Marc Zender
2013 The Graphic Origins of Maya Signs. Workshop presented at the 7th Annual Maya at the Playa Conference, Flagler County, Florida, September 26-29, 2013.
- Lacadena, Alfonso
1998 Glifos mayas: procedimientos de composición (I). *Misterios de la arqueología y del pasado* 2(18):42-43. Madrid.
- 2004 Passive Voice in Classic Mayan Texts: CV-*h*-C-*aj* and -*n-aj* Constructions. In *The Linguistics of Maya Writing*, edited by Søren Wichmann, pp. 165-194. University of Utah Press, Salt Lake City.
- Looper, Matthew G.
2002 Ancient Maya Women-Men (and Men-Women): Classic Rulers and the Third Gender. In *Ancient Maya Women*, edited by Traci Ardren, pp. 114-151. Alta Mira Press, Walnut Creek, CA.
- Lounsbury, Floyd G.
1984 Glyphic Substitutions: Homophonic and Synonymic. In *Phoneticism in Maya Hieroglyphic Writing*, edited by John S. Justeson and Lyle Campbell, pp. 167-184. Institute for Mesoamerican Studies, State University of New York, Albany.
- 1989 The Names of a King: Hieroglyphic Variants as a Key to Decipherment. In *Word and Image in Maya Culture: Explorations in Language, Writing, and Representation*, edited by William F. Hanks and Don S. Rice, pp. 73-91. University of Utah Press, Salt Lake City.
- 1997 The Wrong Language. In *The Language of Maya Hieroglyphs*, edited by Martha J. Macri and Anabel Ford, pp. 33-40. Pre-Columbian Art Research Institute, San Francisco.
- Macri, Martha J., and Matthew G. Looper
2003 *The New Catalog of Maya Hieroglyphs, Volume One: The Classic Period Inscriptions*. University of Oklahoma Press, Norman.
- Martin, Simon
2006 Cacao in Ancient Maya Religion: First Fruit from the Maize Tree and Other Tales from the Underworld. In *Chocolate in Mesoamerica: A Cultural History of Cacao*, edited by Cameron L. McNeil, pp. 154-183. University of Florida Press, Gainesville.
- Mathews, Peter
1980 Notes on the Dynastic Sequence of Bonampak, Part 1. In *Third Palenque Round Table, 1978, Part 2*, edited by Merle Greene Robertson, pp. 60-73. University of Texas Press, Austin.
- Mathews, Peter, and John Justeson
1984 Patterns of Sign Substitution in Maya Hieroglyphic Writing: The "Affix Cluster." In *Phoneticism in Maya Hieroglyphic Writing*, edited by John S. Justeson and Lyle Campbell, pp. 185-231. Institute for Mesoamerican Studies, State University of New York, Albany.
- Mora-Marín, David
2008 Full Phonetic Complementation, Semantic Classifiers, and Semantic Determinatives in Ancient Mayan Hieroglyphic Writing. *Ancient Mesoamerica* 19(2):195-213.
- Proskouriakoff, Tatiana
1960 Historical Implications of a Pattern of Dates at Piedras Negras, Guatemala. *American Antiquity* 25(4):454-475.
- 1961 The Lords of the Maya Realm. *Expedition* 4(1):14-21.
- Riese, Berthold
1989 The Inscription on the Sculptured Bench of the House of the Bacabs. In *The House of the Bacabs, Copan, Honduras*, edited by David L. Webster, pp. 82-88. Dumbarton Oaks, Washington, D.C.
- Ringle, William M., and Thomas C. Smith-Stark
1996 *A Concordance to the Inscriptions of Palenque, Chiapas, Mexico*. Publication 62. Middle American Research Institute, Tulane University, New Orleans.
- Saturno, William A., David Stuart, Anthony F. Aveni, and Franco Rossi
2012 Ancient Maya Astronomical Tables from Xultun, Guatemala. *Science* 336(6082):714-717. May 11, 2012.

- Schele, Linda, Nikolai Grube, and Federico Fahsen
1992 The Lunar Series in Classic Maya Inscriptions: New Observation and Interpretations. *Texas Notes on Precolumbian Art, Writing, and Culture* 29.
- Schellhas, Paul
1904 *Representation of Deities of the Maya Manuscripts*. Second edition, revised. Translated by Selma Wesselhoeft and A. M. Parker; translation revised by the author. Papers 4(1). Peabody Museum of American Archaeology and Ethnology, Harvard University, Cambridge, MA.
- Stone, Andrea, and Marc Zender
2011 *Reading Maya Art: A Hieroglyphic Guide to Ancient Maya Painting and Sculpture*. Thames and Hudson, New York.
- Stuart, David
1992 Hieroglyphs and Archaeology at Copan. *Ancient Mesoamerica* 3(1):169-184.
1998 "The Fire Enters His House": Architecture and Ritual in Classic Maya Texts. In *Function and Meaning in Classic Maya Architecture*, edited by Stephen D. Houston, pp. 373-425. Dumbarton Oaks, Washington, D.C.
2005 *The Inscriptions from Temple XIX at Palenque: A Commentary*. The Pre-Columbian Art Research Institute, San Francisco.
2006 The Language of Chocolate: References to Cacao on Classic Maya Drinking Vessels. In *Chocolate in Mesoamerica: A Cultural History of Cacao*, edited by Cameron L. McNeil, pp. 184-201. University of Florida Press, Gainesville.
2008 *Copan Archaeology and History: New Finds and New Research. Sourcebook for the 2008 Maya Meetings at the University of Texas at Austin*. Mesoamerica Center; Department of Art and Art History, University of Texas, Austin.
- Taube, Karl
1985 The Classic Maya Maize God: A Reappraisal. In *Fifth Palenque Round Table, 1983*, edited by Merle Greene Robertson, pp. 171-181. Pre-Columbian Art Research Institute, San Francisco.
- Thompson, J. Eric S.
1950 *Maya Hieroglyphic Writing: Introduction*. Publication 589. Carnegie Institution of Washington, Washington, D.C.
1962 *A Catalog of Maya Hieroglyphs*. University of Oklahoma Press, Norman.
- Tokovinine, Alexandre
2013 *Beginner's Visual Catalog of Maya Hieroglyphs*. Corpus of Maya Hieroglyphic Inscriptions, Peabody Museum of Archaeology and Ethnology, Cambridge, MA.
- Wagner, Elisabeth
2003 The Female Title Prefix. *Wayeb Notes* 5: www.wayeb.org/notes/wayeb_notes0005.pdf.
- Zender, Marc
1999 Diacritical Marks and Underspelling in the Classic Maya Script: Implications for Decipherment. M.A. thesis, Department of Archaeology, University of Calgary.
2004 A Study of Classic Maya Priesthood. Ph.D. thesis, Department of Archaeology, University of Calgary.
2005a 'Flaming Akbal' and the Glyphic Representation of the *aj-* Agentive Prefix. *The PARI Journal* 5(3):8-10.
2005b The Raccoon Glyph in Classic Maya Writing. *The PARI Journal* 5(4):6-16.
2006a [Untitled review of Martha J. Macri and Matthew G. Looper, *The New Catalog of Maya Hieroglyphs, Volume One: The Classic Period Inscriptions*, University of Oklahoma Press, 2003.] *Ethnohistory* 53(2):439-441.
2006b Teasing the Turtle from its Shell: AHK and MAHK in Maya Writing. *The PARI Journal* 6(3):1-14.
2008 Mystery Glyphs. Workshop presented at the 32nd Annual Maya Meetings, Austin, Texas, February 25-29, 2008.
2010 *Baj* "Hammer" and Related Affective Verbs in Classic Mayan. *The PARI Journal* 11(2):1-16.
2014 Abbreviational Conventions of Classic Maya Writing. Paper presented at the conference "Words in Context: Perspectives and Strategies for the Lexicography of Classic Mayan," Nordrhein-Westfälische Akademie der Wissenschaften und der Künste, Düsseldorf, Germany. October 14, 2014.
- Zender, Marc, and Joel Skidmore
2012 Unearthing the Heavens: Classic Maya Murals and Astronomical Tables at Xultun, Guatemala. *Mesoweb*: www.mesoweb.com/reports/Xultun.pdf.