



The PARI Journal

A quarterly publication of the Ancient Cultures Institute
Volume XVII, No. 2, Fall 2016

In This Issue:

Sharper than a Serpent's Tooth: A Tale of the Snake-head Dynasty as Recounted on Xunantunich Panel 4

by
Christophe Helmke and
Jaime J. Awe

PAGES 1–22



Politics and Places: Tracing the Toponyms of the Snake Dynasty

by
Simon Martin and Erik
Velásquez García

PAGES 23–33



The Syllabic Sign we and an Apologia for Delayed Decipherment

by
Marc Zender
Dmitri Beliaev and
Albert Davletshin

PAGES 35–56

Marc Zender
Editor
marc@ancientcultures.org

Joel Skidmore
Associate Editor
joel@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/1702](http://www.precolumbia.org/pari/journal/1702)

ISSN 1531-5398

Sharper than a Serpent's Tooth: A Tale of the Snake-head Dynasty as Recounted on Xunantunich Panel 4

CHRISTOPHE HELMKE

University of Copenhagen

JAIME J. AWE

Northern Arizona University

Good things come in twos or threes, or so the saying goes, and this has certainly been the case with the discoveries made during this past field season at the archaeological site of Xunantunich in Belize. In June of this year, an important hieroglyphic panel was unearthed, which we designated Panel 3. Surprisingly, this panel was not raised by the rulers of Xunantunich themselves but had been hauled from another site in antiquity. Based on the type of stone, the style, and the execution of the glyphs, it clearly once formed part of a much larger hieroglyphic stair raised by K'an II, one of the dominant kings of Caracol in the

seventh century. Considering the importance of the find, we promptly prepared a paper and were fortunate to see it rapidly to press (Helmke and Awe 2016). Just five weeks later, a matching Panel 4 was found as two conjoining fragments at the base of a pyramidal structure that concealed a large vaulted royal tomb within. As if these finds were not significant enough, the glyphs of the new panel convey vital historical information concerning the Snake-head dynasty that dominated the lowland Maya political arena in the seventh century. Here we present an analysis of Panel 4 (Figure 1), building



Figure 1. Detail of the newly discovered Panel 4 at Xunantunich (photo: Robert Mark and Evelyn Billo).

on the earlier study of Panel 3 (Helmke and Awe 2016). We will also review the chronology of the narrative of the hieroglyphic stair as a whole, in order to better situate Panels 3 and 4. The glyphic text of Panel 4 is analyzed, and we discuss syntactical and poetic features in relation to other similar texts in the Maya lowlands, drawing particular parallels with the texts of Calakmul. Before we do so, however, we will delve briefly into the historical background behind the hieroglyphic stair that these panels once formed a part of, the king who raised the monument, and the interactions between the site of Caracol and some of its friends and foes.

On December 7, AD 642, K'an II officiated over the rituals surrounding the half-k'atun period ending of 9.10.10.0.0. It is on this date that he dedicated the great hieroglyphic stair that committed to stone the past twenty years of his rulership. The reign of this Caracol king lasted from 618 to 658 and ushered in a period of greatness and stability for the dynasty and the site as a whole (Martin and Grube 2000:91-92). This king, much as his father before him, maintained close ties to his overlords, the kings of the Snake-head dynasty. In fact, whereas the accession of K'an II in 618 was supervised by the triadic patron deities of Caracol, it would seem that he underwent another investiture the following year, under the auspices of the Snake-head king Yuhkno'm Ti' Chan (Simon Martin, personal communication 2005; Martin 2009). The accession of the successor of the Snake-head dynasty, Tajo'm Uk'ab K'ahk' is also dutifully recorded in 622, as is the receipt of a gift, possibly a headdress or deity effigy, from the same king in 627 (Martin and Grube 2000:92; Grube and Martin 2004:70-71). These diplomatic ties were closely followed by offensive actions against the city of Naranjo in both 626 and 631, her monarch having repudiated fealty to the Snake-head kings. As reprisals to these martial actions, we read of reversals of fortune, with a decisive attack in 680 wherein Caracol suffered a major loss at the hands of Naranjo (Martin and Grube 2000:95; Grube and Martin 2004:107-108). It is probably as part of this attack that monuments at Caracol were splintered and obliterated, including Stela 3, also raised by K'an II, and most of his hieroglyphic stair was also dismantled and carried off (Martin 2000a:57-58, Fig.12). The majority of panels that once comprised the hieroglyphic stair found their way to Naranjo, but one panel has also been found at Ucanal and now two such panels have been discovered at the site of Xunantunich.

That the ancient Maya should dismantle a monument as a result of a successful military engagement and carry it back to the victorious kingdom may be unexpected but is in fact in keeping with practices known for many cultures, both ancient and more contemporary. To cite just a few examples, the Romans extirpated obelisks from Egypt and laboriously transported them back to their capital. In fact, Rome now ranks as the obelisk

capital of the world since more obelisks stand in that great metropolis than in Egypt itself (Sorek 2010; Clayton 1994:114). At least five Egyptian obelisks were transported to Rome in antiquity, starting with those of Seti I and Psammetichus II, shipped to Rome in 10 BC on the command of Augustus (Laistner 1921; Scarre 1995:20). Honoring this tradition, the later Emperor Constantius II had a pair of obelisks of Thuthmosis III transported to Rome and to the new capital Constantinople in AD 357 (Safran 1993; Scarre 1995:224). Interestingly, these obelisks were re-erected to commemorate the *ventennalia*, or twenty-year jubilee, of Constantius on the throne.

A particularly consequential and poignant military action is that which culminated in the despoilment of Herod's great temple in Jerusalem, the ritual objects borne into Rome as part of a triumphal procession celebrated by Titus and his father Vespasian in the summer of AD 71 (Scarre 1995:75). This triumph is celebrated on the Arch of Titus at the Via Sacra, where we can still see Roman soldiers bearing the great golden candelabrum or Menorah (Holloway 1987:Fig. 3). The plunder of Israel was eventually housed in the Temple to Mars Ultor ("Mars the Avenger"), a structure raised by Augustus to accommodate the sacred objects of conquered states, where victorious generals dedicated their spoils to Mars (e.g., Barchiesi 2002).

As is well known, victorious armies frequently resort to looting in addition to the displacement of larger monuments at the behest of their leaders. Thus Rome was not spared by the Vandal looting in the mid-fifth century, nor was Constantinople when it was sacked by the Crusaders in 1204. Moving some centuries forward, we can also cite the monuments removed to Paris during the Napoleonic wars. Prominent among these is the great bronze Quadriga that once graced the top of the triumphal arch known as the Brandenburg Gate in Berlin (ironically, it was originally named the *Friedenstor*, or "Arch of Peace"). This Quadriga represents the personification of victory riding in a chariot drawn by four horses, echoing the Roman triumphal practice. Napoleon having conquered Prussia, it was not deemed apt for the Quadriga to remain in Berlin, and in 1806 his forces dismantled the ten-ton statue and hauled it to Paris (only for it to be re-conquered and returned to Berlin eight years later, where it remained until it was mostly destroyed during the bombardments of the Second World War) (Krenzlin 1991).

Closer both temporally and spatially to Mesoamerica is the temple known as <Coateocalli> (*kōwā-teō-kalli*, lit. "snake-god-house" or 'snake temple') of the central ritual precinct of Tenochtitlan among the Aztec. This temple was raised by Moctecuzoma Xocoyotzin as a shrine that would contain the divinities and statuary acquired from conquered states and cultures (Durán 1964:237). Richard Townsend (1979:36) described it as a temple constructed "to house the captured cult effigies

and ritual paraphernalia brought home by triumphantly returning Mexica armies.” As such it served as a type of Aztec Pantheon, much akin to that built by the Romans. To this we should also add the capturing of deity effigies by the Maya during battles, as first identified by Simon Martin (1996). From both epigraphic and iconographic sources we know that the large palanquins, or litters, upon which kings were carried into battle also bore great deity effigies, serving as protective deities looking over the welfare of both the king and his armies. In humiliating defeats these palanquins were seized by victors and marched triumphantly through the capital, a foreign deity now smiling upon the victorious king. As we can see there are a great many points of equivalence here, and paramount among these is the forceful acquisition of statuary representing deities, as if the victors could accrue more divine protection by accumulating divinities in their midst and even naturalizing conquered deities. With this overview we hope to give a sense of the proclivity of victorious armies to forcibly acquire monuments of conquered states, to better contextualize the Maya instance involving the hieroglyphic stair of K’an II. Establishing this precedent, we surmise that additional instances exist that have yet to be identified.

However, we must also point out that martial action is not the only explanation for the transportation of monuments across the landscape. For instance, Stela 9 at Calakmul is made of dark gray slate, which does not occur geologically in Campeche (Ruppert and Denison 1943:Plate 48; Graham and Williams 1971: 163-165; Marcus 1987: 139) (Figure 2).¹ In contrast, at Caracol, located 165 km to the south, on the margins of the Maya Mountains, slate abounds and monuments made of this material were raised at the site between the sixth and eighth centuries (Beetz and Satterthwaite 1981:56, 74). Considering the close ties between Caracol and Calakmul it seems most likely that the slab of slate from which Stela 9 was carved was gifted to Yuhkno’m Ch’een II around AD 658 by the newly enthroned K’ahk’ Ujo’l K’inich II. Upon its arrival at Calakmul, Yuhkn’om Ch’een used the slate stela to commemorate the period ending of 9.11.10.0.0 (August 24, 662) and to promote the cause of his successor Yuhkn’om Yich’aak K’ahk’, whose image was carved on its front face (Martin 2009). This case makes it clear that monuments, or at least great stone slabs, were transported over large distances and represent favorable diplomatic relations. Panels 3 and 4 at Xunantunich may thus owe their presence at the site to such a gesture of political amity. Assuming their point of origin at Caracol and considering the great size of these panels we can also assume that they were rafted down the Mopan river, which may help to explain the presence of such panels at Ucanal and Xunantunich, since both are situated on



Figure 2. The front face of Stela 9, the slate stela of Calakmul, apparently depicting Yich’aak K’ahk’ in AD 662, well in advance of his accession, which transpired 24 years later (photograph by Harri Kettunen).

¹ Whereas we use the term slate, it may be more accurate to refer to the raw material as semischist with ferrous inclusions. Whereas slate stems from sedimentary stones, such as shales and mudstones, slates are actually metamorphic since they are affected by low-grade regional volcanism. This also helps to explain why the margins of the Maya Mountains—themselves a Paleozoic volcanic intrusion—exhibit several important sources of slate, since all the favorable geological conditions are found there.

the banks of this stream (Figure 3). Moreover, with such a route, the sites of Ucanal and Xunantunich appear as viable stop-off points on the return journey from Caracol to Naranjo. Irrespective of the specific processes at play, these panels speak of a close relationship maintained with Naranjo, be it the result of shared participation in a common war effort against Caracol, or as gifts bestowed on a cherished vassal. These monuments thereby make tangible the vicissitudes of alliances and royal relations in antiquity. That said, we offer these words more to provoke thought than to provide definitive answers, and we now turn to consider the context in which Panel 4 was discovered.

Context and Circumstances of Discovery

We discovered Panel 3 at Xunantunich to the south of the axial stairway of Structure A9 on June 3, 2016. The monument was found lying on its side, leaning on the stair-side outset, abutting the terminal construction phase of Structure A9. The northern stair-side outset was partially cleared and no matching monument was encountered there. As a result, and considering the secondary context of Panel 3, we moved quickly to see that first monument to press (Helmke and Awe 2016). Recognizing that other fragments of the Naranjo hieroglyphic stairway were missing, we decided to explore the north flank of Structure A9 to continue exposing the architecture and look for a matching monument. Our efforts paid off, and on July 11 of the same year we discovered Panel 4 as two conjoining fragments at the northeastern base of Structure A9 (Figure 4). Unlike Panel 3, however, the two fragments of Panel 4 were discovered lying facedown above the plaza floor. Also in contrast to Panel 3, the fragments of Panel 4 were not located in front of the stair-side outset of Structure A9, but just to the north. The first fragment (Frag. A) was actually found lying 2.7 m north of the axial stair, or 60 cm north of the northeastern corner of the stair-side outset (Figure 5), and the second fragment (Frag. B) was located 40 cm north of the first fragment. This location suggests that Panel 4 could originally have been placed in the same manner as Panel 3 to the south, leaning against the basal terrace of Structure A9, but that it was subsequently knocked over and fragmented by a combination of taphonomic disturbances, including tree fall and architectural collapse. While it remains possible that the monument was intentionally terminated by the Maya in antiquity and displaced to the context in which we discovered it, at present this hypothesis appears less likely without additional supportive evidence. Much like the previously discovered monument, Panel 4 was not associated with any artifactual materials that can be used to assist in dating its re-deposition at Xunantunich, nor inform us as to the types of activities that these monuments may have attracted. That said, monument

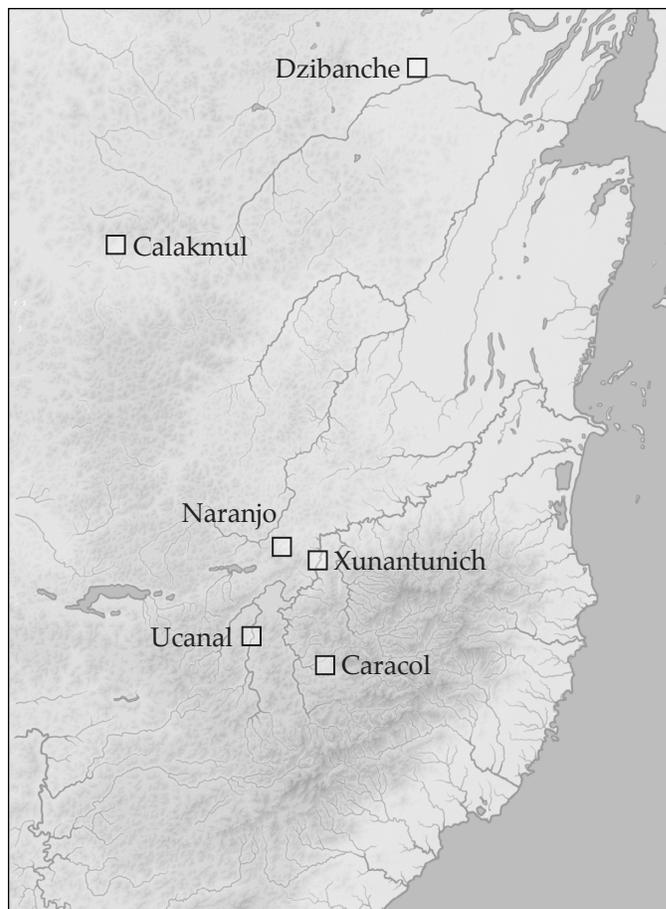


Figure 3. Location of salient archaeological sites mentioned in the text (Precolumbia Mesoweb Maps).

termination may account for the condition of the left-most portion of glyphs in the first medallion on Panel 4 that show damage and pitting. In addition, a large section of a glyph is missing from Panel 3, and it either broke off during transport of the monument or it may have been purposely spalled off in antiquity as part of a termination ritual.

During the axial trenching of Structure A9, the steps of the terminal stair were uncovered and around halfway up it was apparent that the core was collapsing inwards along with some of the steps. This was a clear indication that a tomb might be located within the structure. The capstones of the tomb were subsequently uncovered and the chamber was opened, revealing a large rectangular space measuring 4.5 m north-south and 2.4 m east-west, making it one of the largest tombs discovered in Belize to date (Figure 6). Significantly, this is also the very first royal tomb discovered at Xunantunich, a fact that created quite a stir in the international media (e.g., Forssmann 2016; Surugue 2016). The tomb and its contents will be the subject of another more detailed study and publication, but we can relate some of the more salient features. The tomb was found to

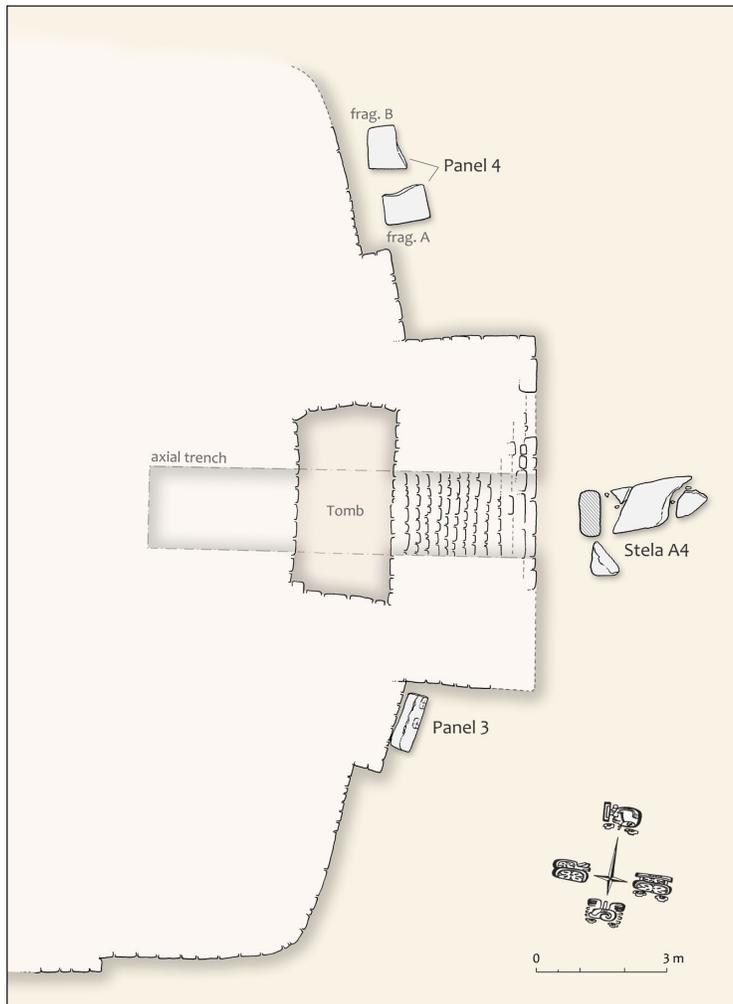


Figure 4. Plan of the terminal-phase architecture of Structure A9, showing the location of the axial tomb as well as the contexts in which the glyphic panels were found. Plan is aligned to terminal architecture with magnetic north indicated. Survey and plan by Merle Alfaro, Raúl Noralez, and Christophe Helmke.



Figure 5. The upper fragment of Panel 4 as it was being exposed (photo: Doug Tilden).



Figure 6. General overview of the Structure A9 tomb during excavation (photo: Jaime Awe).

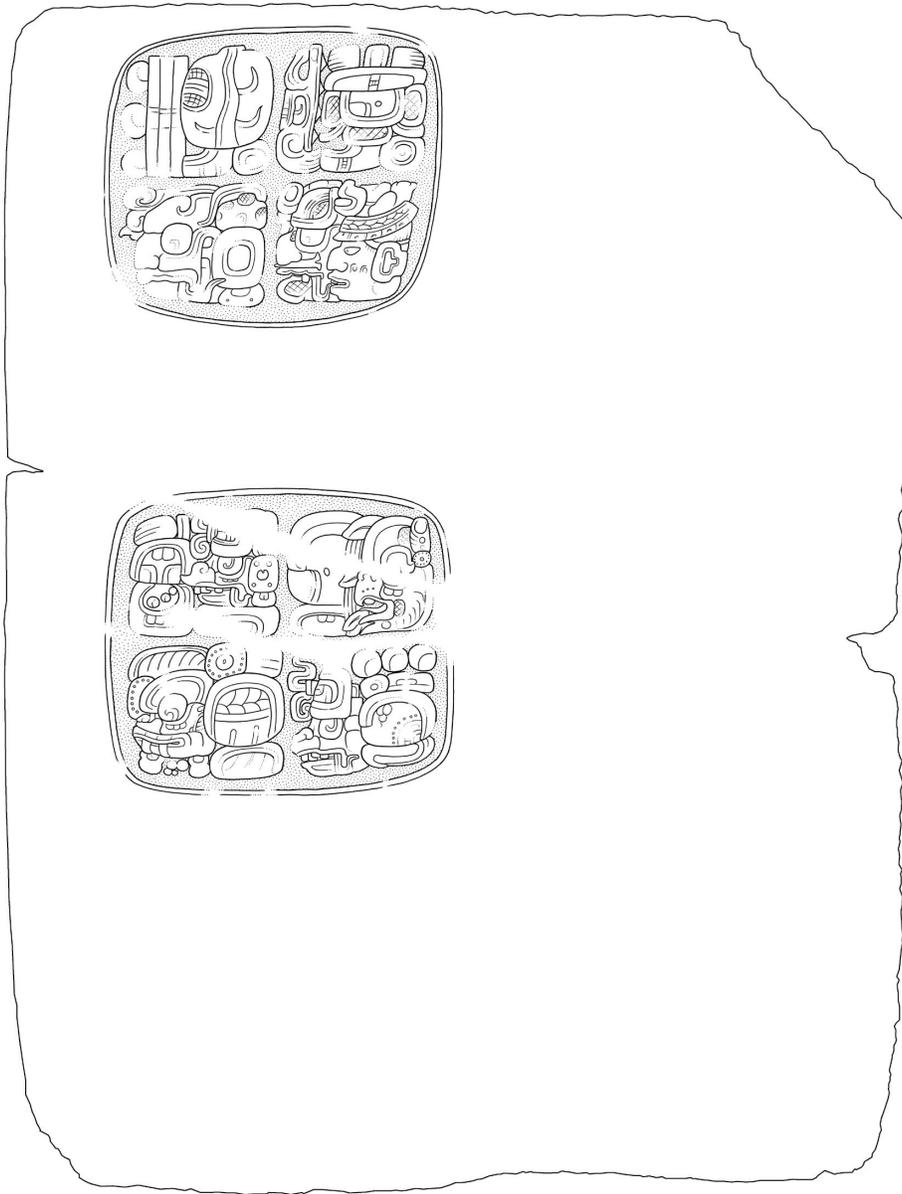


Figure 7. The newly discovered Panel 4 at Xunantunich (drawing by Christophe Helmke).

contain the remains of an adult male, estimated to have been 20–30 years of age at death. He was lying in an extended and supine position with his head to the south as is typical for the area. Funerary offerings included an impressive array of 36 ceramic vessels, six pieces of jadeite that together may have formed a necklace, 13 obsidian blades, and what may be the remains of jaguar or deer at the northern end of the tomb. Together these objects, in combination with the size and location of the tomb, all point to the importance of the interred and strongly suggest that this is a royal individual. Why this should be the first royal tomb discovered to date is a matter of continued discussion, not least considering the number of archaeological investigations that have

been conducted at the site since the late nineteenth century. One intriguing feature is that the tomb is not intrusive into the core of Structure A9 but instead appears to have been constructed concurrently with the bulk of the structure. As such, all of Structure A9 may have been raised as part of a single major construction effort, built with the explicit purpose of housing the exalted deceased, as a type of funerary temple. The juxtaposition of the hieroglyphic panels with this structure is therefore all the more remarkable, although we need to emphasize that the panels were set in front of Structure A9 secondarily. As a result, once the tomb and Structure A9 have been conclusively dated we will be better equipped to assess the relationship, if any, that

these panels might have had with the deceased.

Upon joining the two fragments, we were able to determine that the total height of Panel 4 is approximately 1.41 m, whereas its maximal width is 1.07 m (Figure 7). The top and left edges are linear and formally dressed whereas the other two edges are less neatly so, with the lower base tapering to a width of 98.5 cm. This suggests that the right and bottom portions were concealed under architecture, undoubtedly below the actual steps. This duplicates in mirror image what we have observed for Panel 3, since it is the left edge and bottom that are less formally prepared, indicating that the two panels served as end pieces for the greater hieroglyphic stair. These characteristics have important implications for understanding how the entirety of the narrative on the hieroglyphic stair once started and ended, something that we will return to below. The medallions measure on average 40 cm wide and 36.5 cm high. The space between them is 25 cm from edge to edge whereas the upper edge of the monolith is only 3.5 cm above the top of the upper medallions and the left edge is on average 11.2 cm to the left of the medallions. The thickness of Panel 4 ranges between 25 and 27 cm, making it slightly thicker than Panel 3, which was 22 cm thick on average. In terms of height both monuments are quite comparable since Panel 3 also measures 1.41 m high but only 0.87 m wide. Therefore, more of the blank portion of Panel 4 must have been integrated into the architecture, but we can expect that the margin between the edge of the medallions and the steps would have been comparable on both. Based on these measurements, Panel 3 can be estimated at 0.270 m³ and Panel 4 at 0.374 m³. Using an average weight for limestone (1 m³ = 2,611 kg) we can convert these volumes to mass estimates, with Panel 3 weighing in at around 705 kg (1,554 lbs) and Panel 4 at 976 kg (2,152 lbs). Thus Panel 4 weighed a little under a metric ton, which may also explain why it fractured into two. The breakage undoubtedly followed an original fracture, since similar defects and hairline fractures are also perceptible in the stone of Panel 3. Alternatively, Panel 4 may have been fractured during transport, which in turn may have eased its move from Caracol to Xunantunich, not least considering that this is the single largest monolith of the hieroglyphic stair discovered to date.

The Hieroglyphic Stair of K'an II

Whereas it remains outside the scope of this paper, we remain hopeful that a collaborative team will eventually be convened to conduct petrographic analyses and chemical assays on the various panels in order to ascertain their geological profile and to properly tie these to their place of origin, as a single hieroglyphic stair raised by K'an II. In addition, we hope that sufficient data can be gathered from the archaeological contexts in which

the various panels were eventually encountered, including Str. B5 at Caracol, Str. B18 at Naranjo, Str. A9 at Xunantunich, and the ballcourt at Ucanal, so that we can begin to define the time periods when these panels were re-erected in their secondary settings. This will help to flesh out the events surrounding their production, displacement, and eventual re-deposition. Until that time, we will content ourselves with commenting on metric attributes, as well as paleographic and calendrical features that help to establish the unity and coherence of the panels as a single monument.

To start, some comments can be made concerning the physical properties of the medallions that establish the coherence of their design and thereby confirm that the panels all originally formed part of the same monument, even though they were scattered between at least four different archaeological sites. Considering just basic metrics such as the maximal width and height of the more squared medallions, we can see that these were not laid out according to a fixed template since the widths range between 37.5 and 40.6 cm, whereas their heights range between 34.1 and 37.3 cm (Table 1). These divergences may seem significant, but if we compute their variance in terms of standard deviation we can see that the differences are quite minor, since that for widths amounts to ± 0.62 and heights to only ± 0.90 cm,

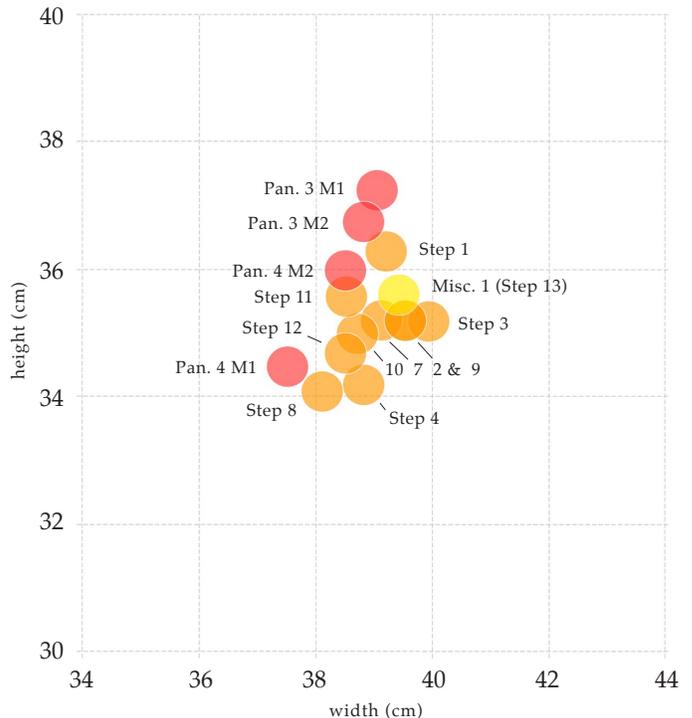


Table 1. Graph showing the width vs. height of the squared glyphic medallions that together comprise the hieroglyphic stair (excluding Steps 5 and 6; all are interior measurements omitting the incised outline). The width of Step 8 is reconstructed as is the height of Medallion 1 of Panel 3. Data points are color-coded by site.

on either side of their respective means. In addition, we can see that width and height are also highly proportionate since a linear correlation coefficient (a Pearson Product-Moment Correlation) for all panels has yielded $\rho = 0.995513$, indicating that the two variables are nearly perfectly and positively correlated.

Another study that would be interesting to conduct would take into account the shape and surface areas of the medallions to determine their degree of co-variance and establish whether these are comparable to the simple linear computations presented here. We suspect that such a study would yield positive results and complement the cursory study that we have made of the width-to-height ratios of the medallions of the Xunantunich panels. Clearly the widths are larger than the heights, forming medallions that mostly conform to the shape of a rounded square, or superellipse ($n > 2$) (see Gardner 1977), and from our computations we can see that these are generally disposed according to a 10:8 or 10:9 ratio. These give us a sense of how the outline or frame of the medallions was drawn.

In addition to the physical properties, there are also elements of style that are relevant to paleographic analyses, confirming the integrity of the hieroglyphic stair. In particular, the choice of signs and the specific allographs used are highly instructive. As found on Panel 4, there are several clear points of correspondence, in paleographic terms, that compare to glyphs on previously discovered panels. These include the spelling of the fourteenth month in the haab calendar, written **UN-wa**, with precisely the same type of circular mirror-like element at the top of the logogram as that seen on Step 10 (V1), both with relatively slender tree-like markings and the same short stem tip at the top, albeit pointing in different directions (Figure 8a–b). We can also look at the spelling of the toponym *Uxte'tuun* “three stones” that is tied to Calakmul. The same toponym is also recorded on Step 6 (L3a) with the same numeral, each embellished with semicircular lines and the same allograph of the **TUN** logogram (T528) that is used throughout the hieroglyphic stair, with the dashed lines within the concentric semicircles at the base (Figure 8c–d). The profile of an aged male deity on Panel 4 (pB2a) exhibits a small circular area on the chin, marked with crosshatching, presumably

representing stubble. The same feature is found on the profile of the aged deity known as G9, a Lord of the Night, represented on Step 5 (J3) (Figure 8e–f). In addition, the owl head-variant with the distinctive trilobate eye on Panel 4 (pB3b) is also found in two other instances on the hieroglyphic stair, although neither is particularly well preserved. These include an instance on Step 6 (L2a) where it also functions as the logogram **CH'EN?** and another on Step 2 (D1) where it serves as the syllabogram **ki**, as part of the sequence **K'UH-K'AN?-tu-ma-ki**, the dynastic title of Caracol kings (Grube 1994:85). These shared features as well as those found on Panel 3 (Helmke and Awe 2016:5–6, Fig. 6) all conclusively speak of a single monument exhibiting the same degree of internal stylistic variance to be expected in any long text. As a result, based on physical and paleographic properties alone it seems clear that Panels 3 and 4 formed part of the same hieroglyphic stair. To this we can add the calendrical references that these panels exhibit, since they dovetail perfectly with former gaps, precisely filling these lacunae and weaving together a more complete narrative.

Calendrics

All that remains of calendrical information on Panel 4 is the latter half of a Calendar Round that initiates the text. The date in question (pA1) is clearly written **18-UN-wa** for *waxaklajuun uniiw*, or “18 K'ank'in,” providing a record of the haab calendar. This date occurs among the panels that have been found at Naranjo, most notably on Step 5 that records the complete Long Count 9.10.10.0.0 (Figure 9). This date corresponds to December 7, AD 642 and closes the k'atun, or twenty-year period, that concludes the entire narrative recorded on the hieroglyphic stair. Interestingly, rather than commemorating an “even” k'atun spanning from a period ending wherein the last three digits are set to zero, both the start and end of the narrative presented on the hieroglyphic stair are marked by lahuntun period endings. This means that both the start and end dates of the narrative provide half-k'atun dates, wherein the coefficient for “years” is set to ten, which is to say half of the vigesimal unit represented by a k'atun of twenty years (Thompson 1950:30, 32, 192–193).

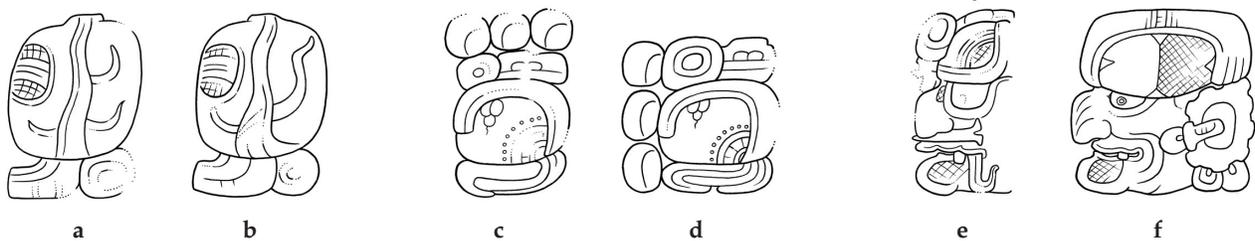


Figure 8. Shared paleographic features in the hieroglyphic stair of K'an II: (a) Xunantunich Panel 4 (pA1); (b) Naranjo Step 10 (V1); (c) Xunantunich Panel 4 (pB4b); (d) Naranjo Step 6 (L3a); (e) Xunantunich Panel 4 (pB2a); (f) Naranjo Step 5 (J3).

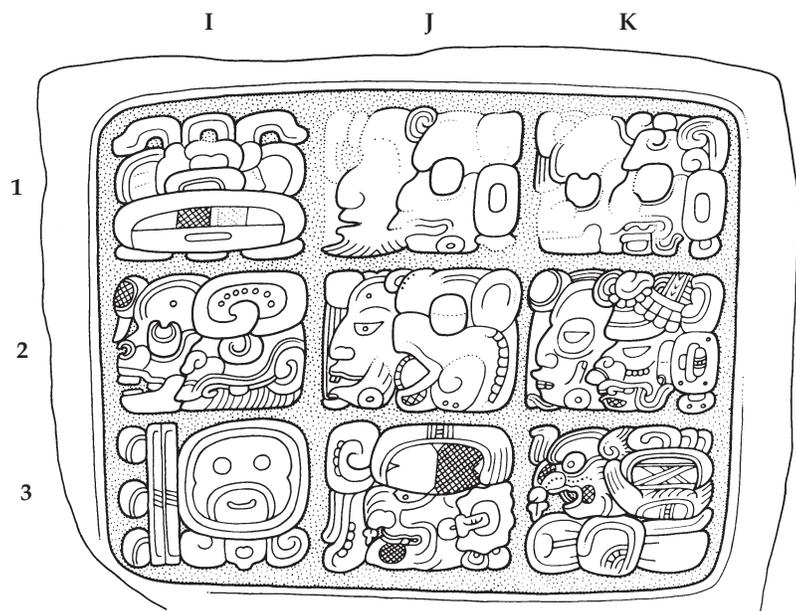


Figure 9. Step 5 of the hieroglyphic stair found at Naranjo (after Graham 1978:108; drawing by Ian Graham © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology, PM# 2004.15.6.3.29).

The 9.10.10.0.0 date, as both a period ending and the latest date recorded on the hieroglyphic stair, has long been assumed to serve as the dedicatory date for the entirety of the monument (see Morley 1909:550-554; Graham 1978:111; Closs 1984:78, Table 1; Proskouriakoff 1993:40-41). Thus the date on Panel 4 appears to record the very end of the narrative, which is all the more surprising given that this panel must have been mounted on the very left end of the hieroglyphic stair, at the place where one expects the narrative to begin. Based on this evidence, it now seems clear that Panel 4 does indeed record part of the 642 date and that the 9.10.10.0.0 Long Count served as the dedicatory date for the whole narrative. Whereas in previous reconstructions the place of Step 5 has been assumed to be at the very end of the narrative (see Helmke and Awe 2016:Table 1), it now seems more probable that this would have initiated the entire hieroglyphic text.

In fact, the presence of an Initial Series Introductory Glyph at the onset of Step 5, the record of the entire Long Count date, and the fact that the text on this step closes with a record of the Lord of the Night² (Glyph G and an idiosyncratic Glyph F), all suggest that the entire hieroglyphic stair may once have begun on this step. Interestingly, the last glyph in the text of Step 5 is a peculiar Glyph F, which provides the title of the foregoing Glyph G9 of the Lord of the Night series. While we cannot know how much additional calendrical information was originally recorded on the hieroglyphic stair, we can expect the remainder of the Calendar Round to have appeared on the subsequent panel, and this is precisely what we see on Panel 4: the date 18 K'ank'in. Therefore, it is possible that Step 5 and Panel 4 together formed a linked set when the stairway was originally raised, with Step 5 adorning the stair-side outset of the second terrace and Panel 4 facing the stair-side outset of the first terrace (Figure 10). This

arrangement would undoubtedly have been duplicated at the extremity of the text, at the right edge of the stair, with Panel 3 occupying an analogous position to Panel 4 (Helmke and Awe 2016:7). This configuration is likely, since both are large monolithic panels bearing two superimposed medallions, and presumably another quadrangular panel once decorated the second terrace above (similar to Steps 5 and 6). Based on these observations, we have been able to integrate Step 5 and Panel 4 at the very start of the narrative and have incorporated the dates recorded on Panel 3 with those found on the steps recovered at Naranjo, allowing us to present a complete and updated chronology for the entire narrative (Table 2). The monuments discovered at Xunantunich are thus evidently helping us to close important gaps in the chronology and narrative of the stair. Although we are now more certain about the opening and closing of the narrative as a whole, the reconstruction presented below makes it clear that a series of gaps persist, including events in 626 and 638, as well as lacunae between 627–630 and 633–636.

A Reading of the Glyphic Text

It is clear from the chronological overview presented above that some panels continue to elude us, constituting salient gaps in the narrative. Despite these lacunae, it is interesting to note that the ancient scribes made some attempts to define clauses according to the format of the hieroglyphic stair as a whole, which

² The Lords of the Night form a cycle of nine days, each presided over by different supernatural entities that are sequentially designated as G1 through G9 (see Thompson 1950:208-212). These are typically accompanied by the so-called Glyph F that provides their title. The latter is usually read *ti'-huun*, lit. "mouth-paper"; however, by extension this can be understood as "spokesperson for the crown," since certain regal headdresses were made of paper and the qualifying *ti'* "mouth" serves here by means of synecdoche to designate the office (see Zender 2004:215-221). Interestingly, on Step 5, the logogram **HUN** is surmounted not by **TI'** as might be expected, but by a rabbit bearing the logogram **SA'** in one of its paws. Together the rabbit and the logogram that it cradles spell the toponym *Pek Sa'uul*, which names the small elevation at the north of Naranjo, where a causeway terminus complex was built in the Early Classic (Helmke in press:20; cf. Tokovinine and Fialko 2007:8). Why this toponym was written here instead of the customary *ti'*, we cannot readily explain at present.

is to say to fit them within the boundaries imposed by the medallions. As such, clauses recorded on both Panels 3 and 4 can be said to be end-stopped on each monolith, implying syntactical pauses at the close of each pair of medallions. Thus, the three clauses of Panel 3 may be contained within the two medallions of the monolith, with the final subclause potentially representing the end of the entire narrative, however succinct and even anticlimactic (see Helmke and Awe 2016:11). Likewise, on Panel 4 the two major subclauses are framed within the paired medallions of the monolith. This implies that the following medallion, on another panel, must have provided a distance number or a statement of an earlier period ending, which we surmise presented a count back in time by a score of years, or a k'atun, in order for the narrative to ensue in chronological order from earliest to latest event (see Table 2). Naturally, future discoveries will make it possible to corroborate

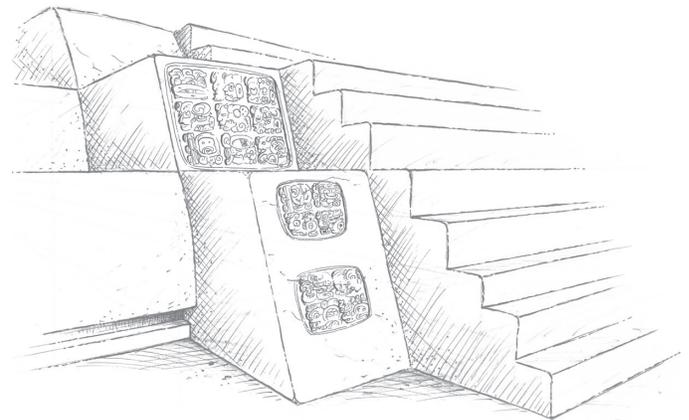


Figure 10. Isometric sketch of the possible articulation of Panel 4 and Step 5 in the original hieroglyphic stairway. Together these would have formed the very beginning of the glyphic narrative presented on the stairway. Drawing by Christophe Helmke.

Long Count/DN	Day	Month	Gregorian Date	Monument
9.10.10.0.0	13 Ajaw	18 K'ank'in	7 December 642	NAR Step 5 & XUN Panel 4
- 1.0.0.0				Mon. ?
9.9.10.0.0	2 Ajaw	13 Pop	22 March 623	Mon. ?
+ 3.4.4				NAR Step 8
9.9.13.4.4	9 K'an	2 Sek	29 May 626	NAR Step 8
+ 4.0				Mon. ?
9.9.13.8.4	11 K'an	2 Ch'en	17 August 626	Mon. ?
+ 13.1				NAR Step 7
9.9.14.3.5	12 Chikchan	18 Sip	5 May 627	NAR Step 7
9.9.???.?				Mon. ?
+ 3.???				UCN Misc. 1
9.9.17.11.14	13 Hix	12 Sak	5 October 630	UCN Misc. 1
+ 1.4.9				NAR Step 6
9.9.18.16.3	7 Ak'bal	16 Muwan	28 December 631	NAR Step 6
+ 1.1.17				NAR Step 6
9.10.0.0.0	1 Ajaw	8 K'ayab	28 January 633	NAR Step 6 & ?
9.10.3.2.12	2 Eb	0 Pop	5 March 636	NAR Step 1
+ 1.13.10				NAR Step 10
9.10.4.16.2	8 Ik'	5 K'ank'in	25 November 637	NAR Step 10
+ 14.2				NAR Step 10 & ?
9.10.5.12.4	4 K'an	2 Yax	3 September 638	Mon. ?
+ 1.0				Mon. ?
9.10.5.13.4	11 K'an	2 Sak	23 September 638	XUN Panel 3
+ 1.14.13				XUN Panel 3
9.10.7.9.17	1 Kaban	5 Yaxk'in	7 July 640	XUN Panel 3
+ 2.8.3				XUN Panel 3
9.10.10.0.0	13 Ajaw	18 K'ank'in	7 December 642	[Date Implied]

Table 2. Chronological summary of the narrative preserved in the panels that together comprise the hieroglyphic stair discovered at Naranjo, Ucanal, and Xunantunich (using the 584286 GMT+1 correlation coefficient). Portions in gray have not been recovered and are conjectural. Note that the panel from Ucanal has also been designated as Step 13 (see Graham 1978:110).

or refute these speculations, but they provide some additional observations that may help us to understand the original sequencing of the panels that comprised the hieroglyphic stair.

Unlike the previously discovered Panel 3, where the glyphic text was divided between two medallions but bore three separate clauses each headed by a Calendar Round, the text of Panel 4 records but one lengthy clause even though it spans two medallions. That being said, the lengthy clause can be divided into two principal sentences or clauses, the latter a subordinate phrase consisting of paired secondary clauses, elaborating on the event of the initial primary clause. Thus the syntactical structure of the text presented on Panel 4 exhibits a high degree of structurality, bespeaking the use of poetic language. We will explore each of these clauses in turn.

Primary Clause

If the 18 K'ank'in date that initiates the first medallion (pA1) was not enough to anchor its place in the larger Long Count, the second glyph block (pB1) confirms that the date is a lahuntun period ending (Figure 11). As we have already touched upon above, a lahuntun period ending means that the turning point of a particular Long Count date exhibits a major fraction at the level of the "years," representing half of a k'atun. This glyph block immediately follows the Calendar Round and is, as is to be expected by syntax, verbal in function. This expression is written *u*-[TAN]LAM-*wa* for *u-tahn-lam-aw*, involving the locative term *tahn* "middle, center," which is adverbial to the transitive verbal root *lam* that has a broad semantic domain. Reflexes in modern Mayan languages include *läm* in Ch'ol, which is glossed as "diminish," describing among other things the way in which candles burn, while the cognate *lam* in Yukatek is the verb "sink" (Wichmann 2004:329). From these entries we propose that the Classic Maya semantic domain was akin to "diminish, elapse." As such, the expression refers to a period of time that is "half-elapsed," and this is used especially for half-k'atun intervals as is the case here (although half-bak'tun intervals and relative time spans are also known; see Thompson 1950:192-193). The derivation of the verbal expression here deserves some additional comments, since the use of a third person pronoun prefix is rather rare. This implies that we may be looking at the active voice, wherein the *u*- pronoun marks the subject and the *-aw* suffix represents the active transitive inflection (see Lacadena 2010a:37). The direct object is suppressed since the remainder of the clause that follows names the subject, the agent of the action, who is responsible for the event.

The remainder of the medallion is given over to three separate head variant or portrait glyphs, split over two

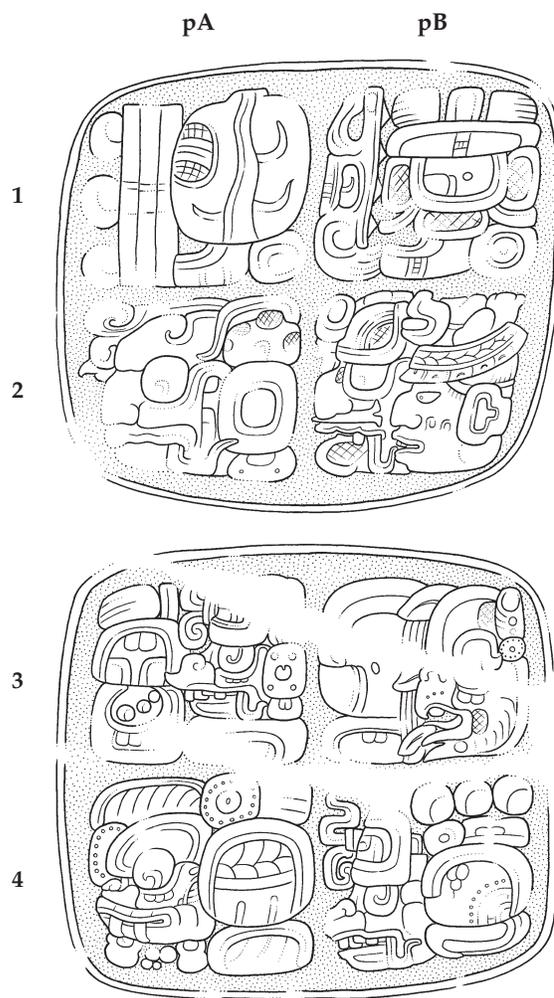


Figure 11. The glyphic medallions of Panel 4 discovered at Xunantunich (drawing by Christophe Helmke).

glyph blocks (pA2-pB2). The first (pA2) represents the profile of an aged male, as is made clear by the sunken gums and the wavy mouth. His profile with prominent Roman nose, swoop of hair at the scalloped brow, as well as the ear of the spotted feline, imply that this an anthropomorphic figure with jaguar traits. It is the pairing of this profile with the one that follows (pB2a) that clarifies their identity. This second figure is once more that of an aged male, his sunken gums, solitary molar, and wavy lips betraying his advanced age. As we have remarked concerning the paleography above, the chin is also embellished with a crosshatched patch (a feature shared with G9 the Lord of Night on Step 5; see Figure 8f). On Panel 4 this aged figure appears to have a mirror or shining element embedded in his forehead, but it is the stingray spine that perforates the septum of his hooked nose that secures his identity. Together it is clear that the aged deities are the so-called Paddler Deities, and other examples in the glyphic corpus confirm that

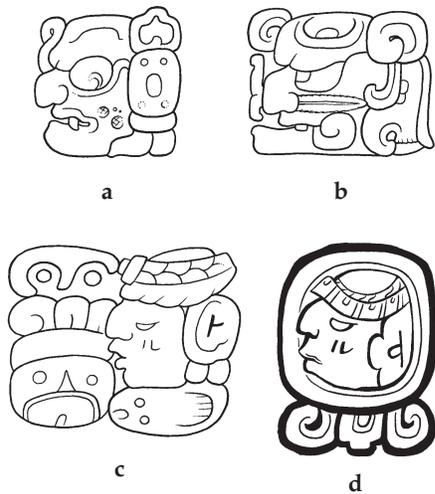


Figure 12. Examples of the aged deities known as the Paddlers: (a) Jaguar Paddler and (b) Stingray Paddler; Quirigua Stela C. (c) Use of the head-variant of the youthful deity as the logogram **IK'** in a death expression; fallen stucco, Temple 18 at Palenque. (d) The same deity as the head-variant of the day sign **Ik'** in the Tzolk'in calendar; south panel, Temple 19 Platform, Palenque. Drawings by Christophe Helmke.

the order in which they appear is consistent and duplicates that of Panel 4, with the Jaguar Paddler appearing first and the Stingray Paddler appearing last (Helmke 2012a:89-95) (Figure 12a-b).

It is from iconographic depictions that the order is made evident, since the Jaguar Paddler is always depicted at the bow of a large dugout canoe, whereas the Stingray Paddler is shown as the stern of the same vessel (Mathews [1981]2001:Fig. 40.4; Schele and Miller 1986:52, 270-271; Freidel et al. 1993:89-92; Stone and Zender 2011:50-51). From these scenes we can see that the paddlers ferried the deceased Maize god, their canoe eventually sinking into the watery underworld, bringing about the “water-entry” that is at the heart of a euphemism for death in Classic Maya language (Lounsbury 1974; Schele 1980:116-117, 350; Stuart 1998:388). In the glyphic texts of the Classic period, however, the paddlers do not appear in their legendary capacity, but as the patrons or as the deities that are responsible for a particular set of ritual events (Stuart 2016). These deities are said to be present and to watch over certain rituals, such as the accession referred to on Stela 8 at Dos Pilas, as well as the period endings recorded on Monument 110 at Tonina and Altar 1 at Ixlu (Mathews [1981]2001:399, Fig. 40.4; Stuart 2016). It is precisely in the same capacity that these two deities appear in the text of Panel 4, as the patrons of the lahuntun period ending and, remembering the syntax of the clause, as the subjects of the verb, the ones that

ensure that the *k'atun* is half-elapsed.

However, in addition to the Paddlers, there is one further figure. This third entity is represented by yet another profile (pB2b) and has a very distinctive aquiline nose and a prominent headdress partially made of woven material, surmounted by what may be a waft of hair wrapped in cloth. The Tau-shaped ear adornment represents what can be called a “wind jewel” and is known from archaeological counterparts as a type of adornment made of greenstone (e.g., Borrero et al. 2016) and as a type of earflare worn by a youthful deity sometimes referred to as God H (Taube 1992:57-58, 2004:73-74). Based on the studies of Karl Taube, we can see that this supernatural entity has connotations of wind but is mostly tied to notions of fragrance and music in mythological events involving aqueous environments. In one important case, the head of this divinity is used as the logogram **IK'**, “wind,” amid the fallen stuccos of Temple 18 at Palenque (Schele and Mathews 1979:Note 398; Zender 2007), in a poorly understood euphemistic expression for death, perhaps describing one’s final breath (see Kettunen 2005; Lacadena 2010b:75-76) (Figure 12c). In addition, the head variant of the day sign **Ik'** in the Tzolk'in calendar is the profile of precisely this divinity (Figure 12d). As such this deity was perhaps an analogous Maya entity to the better known Xochipilli of

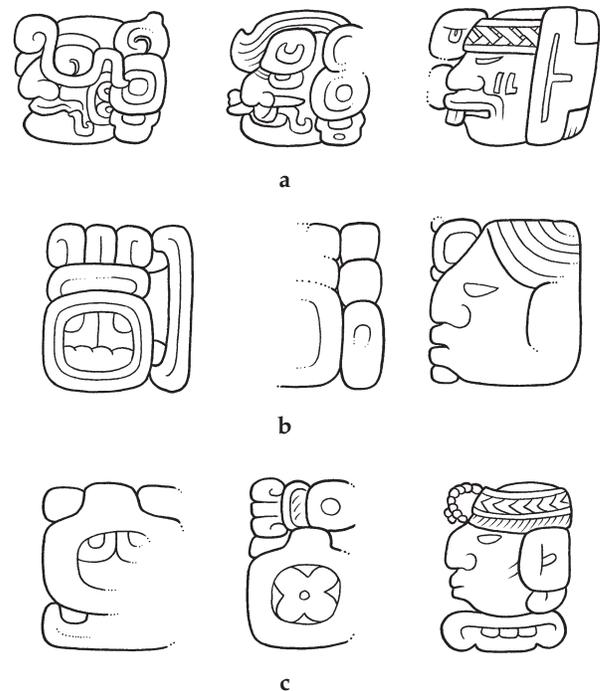


Figure 13. The grouping of the Paddler Deities with the young wind deity in Classic Maya texts: (a) Tikal Stela 31; (b) Piedras Negras Stela 3; (c) Piedras Negras Stela 12 (drawings by Christophe Helmke, after Stuart 2016:Fig. 6).

Transliteration:	ma-cha-ja (pA3a) K'AWIL-{li} (pA3b) TAN-na (pB3a) CH'EN? (pB3b) ka-KAN-la (pA4a) PAT-{li} (pA4b) K'AWIL (pB4a) 3-TE'-TUN-ni (pB4b)
Transcription:	<i>machaj k'awil[i]l ta[h]n ch'e[en] kan[u']l pa[h]t[aa]l k'awi[i]l [ta] uxte'tuun</i>

Table 3. Transcription and translation of second medalion.

the Postclassic Aztec, a divinity of music, song, poetry, and flowers, celebrated somewhat paradoxically by wearing the skin of flayed victims (Miller and Taube 1993:190). Importantly, despite the “wind jewel” worn by the Maya deity and the clear associations with wind and breath, the name of this deity appears to have been something other than “wind” since there are clear examples wherein his name seems to be phonetically complemented by **-na**, as seen for instance on Piedras Negras Stela 12 (Stuart 2016). As such, whereas we have some ideas pertaining to this divinity, the particulars of his identity elude us at present.³

What this youthful deity is doing on Panel 4 is unclear, but other examples are attested where the more common paddler pair are accompanied by the same youthful deity. Salient examples include Tikal Stela 31 (dated to AD 445), as well as Piedras Negras Stela 3 (dated to AD 711) and Stela 12 (dated to AD 795) (Stuart 2016) (Figure 13). In these examples, the three deities are present at important period-ending rituals, including the k'atun period ending of 9.14.0.0.0 (Piedras Negras Stela 3), the lahuntun of 9.0.10.0.0 (Tikal Stela 31), as well as the hotun of 9.18.5.0.0 (Piedras Negras Stela 12). It is therefore evident that the particular type of period ending does not condition their presence, but the types of rituals commemorated at such period endings in general. As such, the same type of supernatural agency is also commemorated on Panel 4. Conjecturally, although it may be tempting to regard these three deities as a type of triad of patron deities—as are known for other sites (see Stuart et al. 1999:57-61; Helmke 2012a:85-89)—it may be that the youthful deity was thought to oppose and contrast to the aged paddlers, these latter perhaps conceived of more as a unified dualistic set (see Velásquez García 2010) rather than as a dyad per se. If this is the case, then a set of aged deities tied to dark and watery environments and a youthful deity associated with the pleasant aspects of fragrant and melodic air may serve as complementary oppositions known to have a privileged place in

Maya ritual language and theological reasoning (see Hull 2003; Stuart 2003). Thus, more than just the divine agents of temporal events, perhaps these represent the proper perdurance of time.

Secondary Clause

With the close of the primary clause in the first medalion, we are provided with another phrase in the second medallion (Figure 11). This secondary clause is divided into two subclauses, and since these are best understood as a set we present them together. The transliteration and transcription of the second medallion is seen in Table 3.

Together this segment can be analyzed in couplet fashion as a paired set of appositions, wherein each can be divided into three segments, a head, medial segment, and closure:

Head	Medial	Closure
<i>machaj</i>	<i>k'awilil</i>	<i>tahn ch'een kanu'l</i>
<i>pahtaal</i>	<i>k'awiil</i>	<i>ta uxte'tuun</i>

In this pair of noun phrases the medial segment is repeated and therefore serves as the syntactical pivot, the subject of these clauses. The head consists of two qualifiers to the subject, which involve derived verbal roots. Together the head and medial segments constitute the predicate of each clause. Thus we can see that these subclauses together exhibit some degree of parallelism as a rhetorical device. The closing segments in both cases are essentially prepositional subclauses involving toponyms or place names, although the first involves a spatial term (*tahn*) rather than a more typical preposition (*ti* or *ta*) and the second does not provide a preposition, requiring the reader to reconstruct it (probably *ta*). The suppression of prepositions in Maya writing is something that has been recognized for some time and is an integral part of both the writing system and the language, since these can be elided by the speaker if the context is deemed sufficiently clear (Stuart and Houston 1994:13-17; see also Soledad López Oliva 2012).

The first head is *machaj* (pA3a), which can be segmented as *mach-aj*. In some earlier studies the sequence **ma-cha-ja** was thought to record the passive inflection of a transitive verb *mach* “to take, remove with the hand,”

³ In this connection it may be relevant to remark that this divinity also serves as the patron of the number three, since there are at times partial correspondences between such head variants and the numbers that they personify (see Thompson 1950:Fig. 24; Taube 1992:Fig.26c-d).

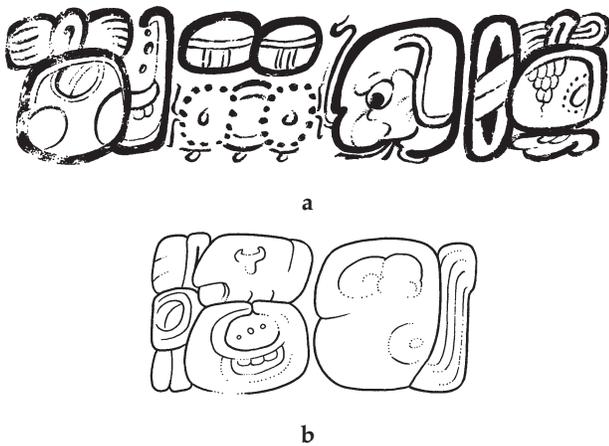


Figure 14. Examples of the expression *ma-cha-ja* in Classic Maya texts: (a) detail of K1389, providing part of the caption of the Sun God; (b) detail of a clause of the East Tablet (M3-N3), Temple of the Inscriptions, Palenque (drawings by Christophe Helmke).

such as in the mythic tale recounted on the so-called Regal Rabbit Vase (K1398) (see Stuart 1993; Helmke 2012b:179-184). On this vase—originally belonging to K’ahk’ Tiliw Chan Chaahk, thirty-eighth king of Naranjo (r. AD 693-728+)—we see a rabbit stealing the regalia of the underworld deity God L. Humiliated, the near-naked God L pleads his case to the Sun God (God G) and inquires as to the location of his regalia and the rabbit. It is in the Sun God’s reply that we see *ma-cha-ja* ... *T’UL ta-hi-na*—involving a segment that qualifies the rabbit in a derogatory manner (Figure 14a)—which could mean that “the ... rabbit has been taken from me” (Beliaev and Davletshin 2006:25-26, 39 n. 38), although an alternate interpretation would see the initial segment as part of a negation, as in “there is no ... rabbit with me” (e.g., Hull et al. 2009:39, Fig. 4). In another example, in the East Panel of the Temple of the Inscriptions at Palenque, we see the lament of a calendrical station that has gone uncelebrated by Ajen Yohl Mat in AD 606 as a result of wars and the turbulent times of his reign (Guenter 2007:17; Skidmore 2010:61). Thus, in this context we read *machaj chum-tuun* (Figure 14b), and here the most cogent and literal translation is “there is no stone-seating” in the sense that this date was not celebrated by a calendrical observance. Based on these examples we can see that it is best to analyze *machaj* as a negation, although as one that supplements the more common negative particle *ma’*, which is widespread in lowland Maya languages (Kaufman 2003:1531). Whereas the function of *machaj* as a negation is now clear, its etymology is perhaps less apparent. It is evidently polymorphemic, and it could still be that it involves *mach*, possibly the transitive verbal root “to take, remove,” or the adverb “not,” here suffixed by *-aj* as an archaic nominalizer. Relevant to this analysis is the

proto-Ch’olan reconstruction of **mach* ‘negative particle’ (Kaufman and Norman 1984:139), as well as Ch’ol *mach* ‘negation’ (Aulie and Aulie 1978:77), Chontal *mach* “no” (Keller and Luciano 1997:153), and the significant studies of negation constructions in Chontal (Knowles-Berry 1987 and Tandet 2013).⁴

Returning to Panel 4, we can thus see that the initial subclause is headed by a negation, meaning that the subject named in the medial portion is not present at the location indicated in the closure. The subject here is written with the profile of the deity K’awiil (God K), which interestingly is followed by a weathered syllabogram *li* (pA3b). The latter is undoubtedly a derivational suffix *-il* that marks abstractivization (see Houston et al. 2001:7-9; Lacadena and Wichmann n.d.:15), duplicating the example seen on Lintel 25 at Yaxchilan, where we see *K’AWIL[wi]-la-li*. The spellings on Panel 4 as well as at Yaxchilan probably provide a means of broadening the semantic domain and speaking of a wider concept tied to this lexeme. As such, the term here does not function as a theonym although it is introduced in writing by means of rebus, since the profile represents the head of a deity by that name. In some of the original discussions pertaining to the meaning of the term *k’awiil*, Linda Schele and her colleagues (Freidel et al. 1993:444, n. 45) remarked also on the Poqom entry *<ih cam cavil>* “one who carries the figures of the gods,” which implies that the lexeme can also refer to a tangible “idol, statue, deity effigy.” Based on this interpretation one could understand the first subclause to relate that “there is no god effigy” at the location mentioned in the closure. However, in addition to the more tangible definition of *k’awiil*, we can entertain the more abstract meaning of “authority” as in political power, as suggested by David Stuart (personal communication 2016), which may also explain the abstractivization suffix. Indeed, so-called Manikin scepters depicting this deity in diminutive form and the bicephalic ceremonial bars portraying this supernatural entity serve as the very instruments of power, marking those who wield them as kings and incumbents of authority (Valencia Rivera 2015:399-415). This may also help to explain the many examples of rituals wherein *k’awiil* is said to be conjured, perhaps as a means of reifying royal authority (see Stuart et al. 1999:51-52; Valencia Rivera and García Barrios 2010; Valencia Rivera 2015:160-189), and also why certain investiture ceremonies were called *ch’am-k’awiil*, or “*k’awiil*-grasping.” In a very literal sense this evidently refers to the taking of the Manikin scepter as part of the royal accession ceremony, but on a more intangible level

⁴ The latter studies also report on forms that may be reflexes of Classic Mayan, such as *mach-a* for NEG-PRFV, wherein the *-a* suffix marks the perfective (Knowles-Berry 1987:338, 344-345; Tandet 2013:36, 43).

it can thus be best understood as the acquisition or the taking of authority (see Stuart 2005:277-278). Although this verb is seen elsewhere in the glyphic corpus (see Schele 1980:196, 307), this particular type of accession ceremony was of paramount importance to the Snake-head dynasty, to judge from the Dynastic King lists represented on a series of elegant Codex-style vases, where they unfailingly make use of this one verb (Martin 1997:855-856) (Figure 15). Accordingly, the first subclause informs us that there is no political authority at the location mentioned in the closure.

The toponym that together comprises the closure can be read as *tahn ch'een kanu'l* (pB3-pA4a), or literally "the middle of the Kanu'l cave." As we touched upon above, *tahn* functions as the spatial term, or locative expression "middle" specifying that we are talking about the very heart of a particular location. The term *ch'een* "cave" is here written with its owl head variant, including its distinctive feathered ear and the diagnostic trilobate eye (see Helmke 2009:544-552). The reading of this glyph was first proposed by David Stuart (see Vogt and Stuart 2005) although its logographic value remains hypothetical in the absence of clear phonetic substitution sets. In addition, the exact meaning of the term remains a matter of discussion since it both literally refers to cavernous sites but also to "settlement" or even "polity capital" by means of simile (Grube and Martin 2004:122-123), based in part on the Mesoamerican practice of ascribing caves to the sacred landscape of urban centers (see Brady 1997) and the use of metaphors for higher order sociopolitical units.

The final term is here written *ka-KAN-la*, and whereas there has been some uncertainty concerning the reading of this sequence, based on a substitution set providing the spelling *ka-nu-la* (on ceramic vessel K1901) it seems clear that the whole should be read *kanu'l*, involving the suffix *-u'l* marking a place where something abounds (see Lacadena and Wichmann n.d.:21-27; Helmke and Kupprat 2016:41-43). Thus *kan-u'l*, with its inclusion of the archaic term *kan* "snake," can be translated as "place where snakes abound." Although clearly a toponym, it served as the basis for and was eventually absorbed into the emblem glyph, or dynastic title (see Figure 15), of the royal house that eventually took Calakmul as its capital during the Late Classic (Velásquez García 2004, 2008a, 2008b; Martin 2005). It is because of the uncertainties in the reading of the toponym involved in this emblem glyph that researchers have also opted for the more descriptive designation of Snake-head dynasty (Marcus 1973:912, 1987:173-176; Martin 1997:856). However, on Panel 4 we do not have an emblem glyph, but a plain reference to the toponym, tied to the place of origin of the Snake-head or Kanu'l dynasty.⁵ This is all the more noteworthy since the reference on Panel 4 may be the first example wherein Kanu'l is used as a place name of historic significance that is framed by contemporary events. This is all the more significant considering that all other examples of Kanu'l as a toponym refer to this locality as a supernatural place (Helmke and Kupprat 2016:43-44).

Regardless of the degree of literalness or figurativeness adopted in any given translation, we can see a great deal of overlap in emic thinking concerning both settlements and caves (Stone and Zender 2011:132-133), meaning that the term *ch'een* may embrace all these concepts within its semantic domain. There is in fact supportive evidence for both interpretations. For one, we now know that Kanu'l was the name ascribed to a mythic cave where the Maize god is said to have been decapitated and eventually resurrected, a sacred

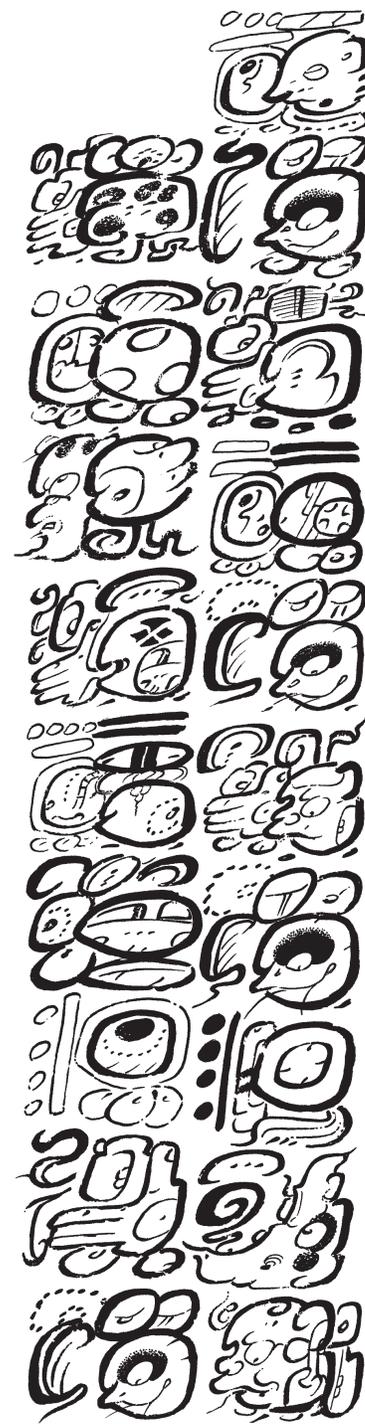


Figure 15. Excerpt of the king list presented on the longest known Dynastic Vase (K6751), showing extensive use of the verb *ch'am-k'awiil* as the accession statement for a series of different monarchs, including ones named Yuhkno'm Yich'aak K'ahk', Tajo'm UK'ab K'ahk', 'Sky Witness,' Yuhkno'm Ti' Chan, and 'Scroll Serpent' (drawing by Christophe Helmke).

⁵ The Classic Maya term *Kanu'l* also has clear echoes with the Postclassic group known as the <Canul> that dominated the northwestern part of the Yucatan peninsula (Roys 1957:12; Barrera Vásquez 1980:299). While it is unclear if there is any relation between the Postclassic group and the dynasty of the Classic, tellingly both appear to have the /u/ vowel in the suffix.

site of paramount importance to the dynasty bearing this same name (Helmke and Kupprat 2016:57-63). In effect, the dynasty that bore the name may even have regarded such a cave as their primordial place of origin and emergence, considering the many Mesoamerican and Native American precedents for such ethnogenesis mythology (see Helmke and Kupprat 2016:57). For another, Kanu'l may well have been the original toponym of Dzibanche, the erstwhile capital of the Snake-head dynasty (Simon Martin personal communication 2009; Martin and Velásquez García 2016, see pp. 23–33 in this issue). Whether the name of the latter was derived from the mythic precedent, or whether there was an actual cave in the area that was deemed to be this place of origin and ultimately gave the settlement its name, is unknown. Irrespective of the ambiguities, this first subclause makes it clear that Kanu'l, the place of origin of the Snake-head dynasty, was entirely devoid of political authority in AD 642, when the lahuntun period ending was celebrated.

This leads us to the second subclause of the couplet, which is headed by the logogram **PAT** and subfixed by a very eroded **li** syllabogram (pA4b).⁶ This glyphic compound provides the head of the second subclause and involves the verbal root *pat* “to shape, fashion, form, make, build” (Stuart 1998:381-384). This verbal root is used especially with regard to the production of objects made of clay and other plastic substances, but also refers to the construction of masonry buildings. The use of this verb, in connection with *k'awiil* as the second subject (pB4a), does suggest the possibility that both appositions speak of the absence of ritual statuary at one location and its production at another. It may well be that these clauses are functioning on both literal and abstract levels, on the one hand conveying the pivotal role of god effigies as a means of imbuing and sanctifying royal power in a given location; on the other it is clear that the presence or absence of political authority is the thrust of these clauses. On Panel 4, however, the verbal root **PAT** is followed by the syllabogram **li**, indicating that we are not just looking at a verbal form but a derived one. The final syllabogram **li** may prompt the derivational suffix *-aal*, which derives nouns as an instantiation of the former noun (Lacadena 2010a:37). Thus, a possible analysis is *paht-aal*, wherein the postvocalic /h/ serves to nominalize the verbal root *pat* as the noun *paht* “something that is formed, shaped, made.” Together *paht-aal* forms a specific referent that is made, shaped, or formed, thereby narrowing the original semantic domain of the root, although without any clear reflexes in Colonial or modern Mayan languages it is difficult to pin down the intended meaning.⁷ In any case, it is clear that the second subclause refers to *k'awiil*, be it an effigy that is very much tangible or political authority that is decidedly manifest.⁸ The second subclause may not provide

a direct antithesis of the former subclause, but certainly sets it in contrast, pointing out the divergence of states in the two places. Thus, the elegant couplet recorded in the second medallion can be said to reflect antithetical parallelism, wherein the two initial segments are reversed to more effectively convey the core meaning framed by two semantic margins (see O'Connor 1980:50; Jakobson 1987:126, 220). A more narrow definition of parallelism sees it as a rhetorical device wherein the initial segment of each clause is resolutely repeated to create the desired effect (Lacadena 2010b; Lacadena and Hull 2012:19-22). Using this definition, the paired phrases in Medallion 2 can better be said to form neatly contrasting couplets (Bright 1990:438) but do not exhibit parallelism as such.

The details of these literary devices aside, the second locality, which closes the text of Panel 4, can be read without difficulty as *Uxte'tuun* (pB4b). This place name can be translated as “three stones,” involving the numeral classifier *-te'* after the numeral *ux*, “three” and preceding the noun *tuun*, “stone.” This place name was first identified as one associated with Calakmul by David Stuart and Stephen Houston (1994:28-29) in their seminal work on Classic Maya toponyms. Based on subsequent work it is now clear that this place name is one that designates the site of Calakmul and its immediate environs (Martin 1997:852; see also Martin and Grube 2000:104). As such, in stark contrast to the first, the second subclause informs us that political authority is well established at Calakmul in AD 642. Together these two subclauses, although embedded in ritual language and poetic constructions, convey bold statements of the waning and waxing of power at two different locations. Thus these clauses provide, in emic terms, an articulate description of the dynastic re-establishment of the Snake-head dynasty from its original seat of power to Calakmul, a process that was evidently thought to be completed by the lahuntun period ending of 9.10.10.0.0.

⁶ Despite the erosion, detailed inspection of the monument under raking light, coupled with examinations of the 3D scans, makes it clear that the final sign below **PAT** is the syllabogram **li** (T24). The form of this sign also agrees with similar allographs on Step 1 (B2b) and Step 5 (N2a).

⁷ An alternate analysis would see **PAT-li** realized as *pat-aal*, wherein we see a *-VV,l* suffix that marks attributive adverbial derivation, also seen on other verbs (Alfonso Lacadena, personal communication 2016). A possible translation would be “it is formed/made the *k'awiil*.”

⁸ Fascinatingly, almost the same type of construction is seen in the stucco text adorning Str. 5D-141 at Tikal (David Stuart, personal communication 2016; see Schele and Mathews 1998:79, Fig. 2.20). Part of this text can be transliterated as **PAT-li-ya K'AWIL-la** and transcribed as *paht-aal-iiy k'awiil*, duplicating the head and the medial segment of this clause. Interestingly, the place that closes the segment is none other than Chatahn, a toponym that is closely connected with early history of Calakmul. Thus, the event cited on the stucco at Tikal may also refer to a type of dynastic founding.

Discussion and Concluding Remarks

The text recorded on Panel 4 is remarkable for filling in the start of the narrative that graced the hieroglyphic stair of K'an II, but especially also for the poetic and ritual language that is employed to convey what we might call historical information. The overall construction of Panel 4 has some broad similarities to texts from other sites, and the use of the term *k'awiil* and the concepts that it embodies are of particular significance when compared to the language employed in the texts of the Snake-head dynasty.

The use of the term *k'awiil* in the appositions of Panel 4 is remarkable since it anticipates a phraseology that is seen in later monuments at Calakmul. As observed by Simon Martin (2005:8), the term is seen in dynastic counts, especially in the texts of Stelae 52, 89, and 115. In these passages the names of Calakmul kings are closed with dynastic count titles, specifying their place in the dynastic sequence. From these texts we can see that Yuhkno'm Yich'aak K'ahk' (r. AD 686–697⁶) is listed as the successor of Yuhkno'm Ch'een II (r. AD 636–686) (Stela 115) (Figure 16a) and that Yuhkno'm Took' K'awiil (r. c. AD 702–731+) is listed as the third successor (on both Stelae 52 and 89). From this it follows that Yuhkno'm Yich'aak K'ahk' must have been considered the second successor and that Yuhkno'm Ch'een II was deemed the dynastic founder of the Late Classic Snake-head dynasty. Significantly, the term *k'awiil* follows each of the dynastic counts, although a clear explanation for this appearance has been wanting. Thus, for instance, Yuhkno'm Took' K'awiil is said to be *u-ux tz'akbuil k'awiil*, or “the third successor [of/in] *k'awiil*” (see Martin 2005:Fig. 4b-c; Stuart 2011:Fig. 2) (Figure 16b). Now, with the text of Xunantunich Panel 4 we are in a better position to tackle the wording presented in the decades to follow in the monuments at Calakmul. As we have seen, possible interpretations of the term *k'awiil* include both a literal sense of “effigy” but also a more figurative meaning of “authority” as in political power. As such, the dynastic counts are probably best understood as monarchs that are successors of the original political authority, established and reified in the reign of Yuhkno'm Ch'een II. The use of the term *k'awiil* in these texts therefore has very little to do with a theonym but quite to the contrary with more abstract conceptions of political ideology, interwoven with conceptions of divinities as personifications of natural forces (see Helmke 2012b:75-79; Valencia Rivera 2015).

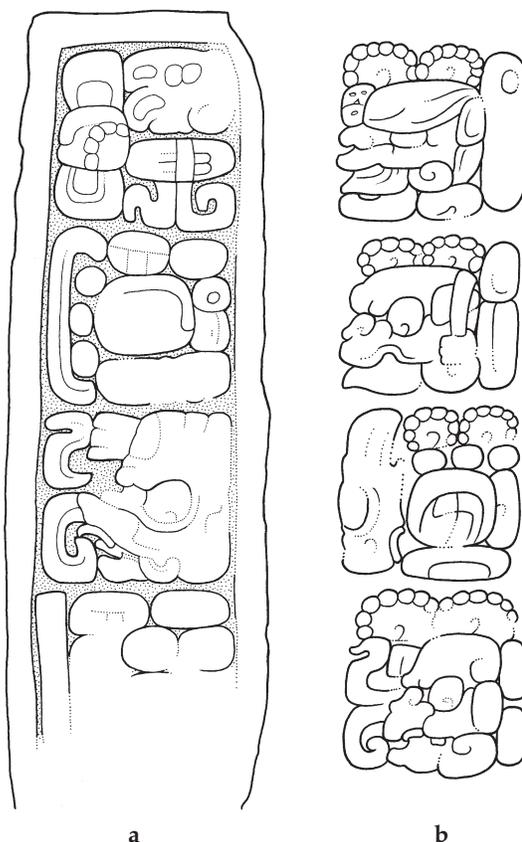


Figure 16. Examples of dynastic counts at Calakmul involving the term *k'awiil*: (a) detail of Stela 115, side (drawing by Simon Martin, after Martin 2005:Fig. 4a); (b) detail of Stela 52, front (drawing by Christophe Helmke).

With the reign of Yuhkno'm Ch'een II we might wonder why he was considered as the starting point for the new Snake-head dynasty established at Calakmul. One possibility may be that he was the first Snake-head king to accede to power at Calakmul proper, although at present this remains conjectural. This also has to be considered in light of his predecessor, Yuhkno'm 'Head'—who reigned from AD 630 to 636 (Martin and Grube 2008:105, 106)—especially since Step 6 of the hieroglyphic stair found at Naranjo names him as *kanu'l ajaw ta uxt'e'tuun*, “the Kanu'l king, at Uxt'e'tuun” (Figure 17). The use of the toponym Uxt'e'tuun is important here since he is clearly signaled out as being a Snake-head king, but one established at an alternate location, namely Calakmul (Tokovinine 2007:19-21). What remains clear though unspoken is that Snake-head kings were originally established elsewhere. The text of Xunantunich Panel 4 makes it plain that this locality was named Kanu'l and presumably served also to designate the original capital, ostensibly the site of Dzibanche, based on current evidence (see Velásquez García 2004, 2008a,

⁶ The 697 date presented here refers to the death of this ruler, as recorded on a recently discovered block (Element 32) of Hieroglyphic Stair 2 at La Corona (see Stuart et al. 2015). The date in question is 9.13.5.15.0 2 Ajaw 3 Pax, or December 18, 697 (using 584286 GMT+1).

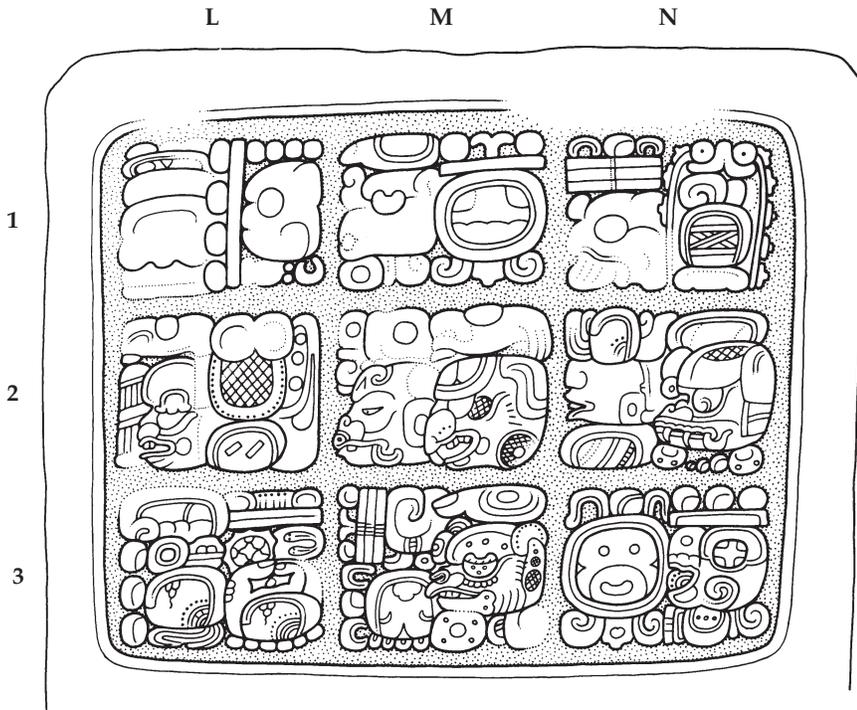


Figure 17. Step 6 of the hieroglyphic stair found at Naranjo (after Graham 1978:109; drawing by Ian Graham © President and Fellows of Harvard College, Peabody Museum of Archaeology and Ethnology, PM# 2004.15.6.3.30).

2008b; Martin 2005; Martin and Velásquez García 2016).

Relevant to this issue is a passage recorded on Element 33 (Block 5) of Hieroglyphic Stair 2, uncovered at La Corona in 2012, which makes reference to Kanu'1 in April 635 (9.10.2.4.4) (Stuart 2012). Although the subject of the passage is clearly written as **ka-KAN-la** (Figure 18), the remainder is murky at best since it is only partially preserved. For instance, only the latter part of its Calendar Round date is preserved, but it can be reconstructed on the basis of independent texts and later distance numbers (Stuart 2012). In addition, the verb that heads the clause involves an undeciphered logogram (T550) that can be described as representing a stylized drum sign emerging from a cleft. The logogram is followed by a syllabogram **yi**, marking the $-VV_1y$ suffix that is characteristic of intransitive change-of-state verbs, such as *k'a'-aay*, "expire, wilt," *pul-uuy* "burn," and verbs of motion such as *lok'-ooy* "flee," or *t'ab-aay* "go up, ascend" (Lacadena 2010a:49). As such, whereas we cannot be certain of the meaning of the clause on Element 33, it in all likelihood relates a change-of-state pertaining to, or affecting, Kanu'1, as subject of the sentence. Considering the contexts in which the same verb is found in other texts, frequently coupled with toponyms, David Stuart (2012) has suggested that this serves as a verb referring to the 'foundation' of particular places as dynastic centers. In light of the phrasing of Panel 4 it may be more apt to understand this verb as the establishment of a particular named dynasty at a given location—as Kanu'1 serves both to name the place of origin and the dynasty. As such, the now-missing remainder of the clause on Element 33 may have recorded the name of the place where the dynasty relocated to. These interpretations are in line with the proposal that the Kanu'1 dynasty shifted to Calakmul from Dzibanche during the reign of Yuhkno'm Ch'een II or that of his predecessor (Martin 2005:11-13). The

key passage on Element 33 therefore echoes forcefully that on Panel 4, in relating the refounding of the Snake-head dynasty in the first half of the seventh century.

At first sight the accession of Yuhkno'm Ch'een II, which took place on May 1, 636 (9.10.3.5.10), seems innocuous enough, an ordinary transition from Yuhkno'm 'Head,' whose last mention, just two months earlier the same year, recounts the decisive defeat of Waxaklajuun Ubaah Kan (Helmke and Awe 2016:9-11). Interestingly, this defeat took place less than a year after the apparent 'foundation' event cited in the text of Hieroglyphic Stair 2 at La Corona. As such, upon greater reflection, the timing of the accession may well have been prompted precisely by the defeat of Waxaklajuun Ubaah Kan on March 4, 636 (9.10.3.2.12). The defeat of Waxaklajuun Ubaah Kan is recorded on Step 1 of the hieroglyphic stair, and his eventual demise just four years later is likewise recorded on Xunantunich Panel 3 at the close of the entire narrative (Helmke and Awe 2016:10). This nemesis, this anti-king, thereby loomed large in the narrative recounting the dynastic struggles of the Snake-head kings, and it seems likely that the relocation to Calakmul was caused by conflicting claimants to the throne, each side asserting their rights of succession (Helmke and Awe 2016:11-12). As we have already

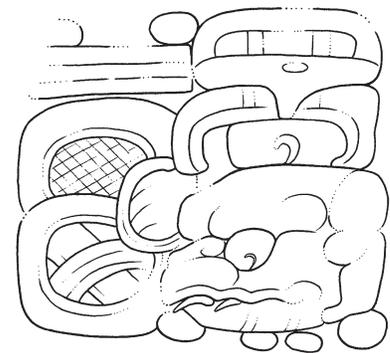


Figure 18. Detail of Element 33 (Block 5) of La Corona Hieroglyphic Stair 2, referring to a possible "foundation" of Kanu'1 in AD 635 (drawing by Christophe Helmke, after Stuart et al. 2015:Fig. 4).

suggested in connection with Xunantunich Panel 3, from the data at hand it seems that the Snake-head dynasty fissioned sometime after the reign of Tajo'm Uk'ab K'ahk' (r. AD 622–630), with the accession of Waxaklajuun Ubaah Kan contended by Yuhkno'm 'Head.' That the former was the more established, legitimate heir, or at least the first to accede to the throne, is implied by the use of the qualifier *k'uhul*, "godly, divine," in his emblem glyph on Panel 3, whereas Yuhkno'm 'Head' is designated as plain *kanu'l ajaw* on Step 6, without the exalted prefix. While the relationship between these two contenders remains unknown, a likely scenario would see them as agnatic or paternal half-siblings, of the same father, with different mothers. Such a model would see their strife anticipating the lengthier and more dire civil war involving the half-brothers of the Mutu'l dynasty, just two decades later (see Houston 1993; Martin and Grube 2000:42-43, 56-58).

While many queries still remain concerning the fascinating monument of K'an II, the panels discovered at Xunantunich contribute greatly to our understanding of the tumultuous decades of the Snake-head dynasty, shedding light on the pivotal role that they played in the affairs of Caracol and Maya polities generally. Panel 4, which appears to open the entire narrative that once graced the hieroglyphic stair makes a surprising statement right from the onset, clarifying that political authority had once and for all been established at Calakmul. This is a very bold statement and appears as a type of synoptic précis for the entire hieroglyphic stair, perhaps setting the stage and thereby explaining the amount of attention lavished on the Snake-head kings as overlords of Caracol. As such, the deeds of K'an II are recounted, but only to the extent that these could be interwoven with the actions of the Snake-head kings. This is why the hieroglyphic stair is such an important source pertaining to the dynastic affairs of Snake-head kings, since it tracks the rulers of the dynasty from the vantage of a vassal, as if waiting with bated breath to see who would prevail in the final outcome. Thanks to the recent discoveries made at Xunantunich many gaps have now been closed, with Panels 3 and 4 standing as substantive bookends of this great narrative. These monuments bear witness to the fissioning of the Snake-head dynasty and its eventual re-establishment at Calakmul, whence it would go on to control much of Classic Maya politics for the remainder of the seventh century.

Acknowledgements

The 2015–2018 Xunantunich Archaeology and Conservation Project is a collaborative effort between the Belize Institute of Archaeology and the Belize Valley Archaeological Reconnaissance project of Northern Arizona University, under the direction of Jaime Awe. Funding for the conservation component of the

project is generously provided by the Tilden Family Foundation of San Francisco, California. Thanks also to the Internationalization Committee of the Institute of Cross-Cultural and Regional Studies, University of Copenhagen for additional funding. We are particularly grateful for the assistance provided by Doug Tilden, Diane Slocum, Hannah Zannotto, Kelsey Sullivan, and Julie Hoggarth. Special gratitude is owed to Jorge Can for supervising the conservation of the monumental architecture and for assisting in all aspects of our project, and to Merle Alfaro for the architectural plans of Structure A9. Many thanks also to Robert Mark and Evelyn Billo of Rupestrian CyberServices, for securing photographs and producing outstanding 3D models of the glyphic medallions in Agisoft PhotoScan. For their comments on Panels 3 and 4 we would like to thank Arlen Chase, Nikolai Grube, Simon Martin, and in particular Alfonso Lacadena and David Stuart for their astute insights. Many thanks also to the anonymous reviewers for their comments on an earlier draft of this paper. Our appreciation to Dmitri Beliaev for sharing with us the measurements of Step 13 (Misc. 1 of Ucanal) secured by the Atlas Epigráfico de Petén project. To Jago Cooper and Kate Jarvis many sincere thanks for facilitating access to the collections of the British Museum and to Eva Jobbová for helping to secure the measurement of the panels. Our thanks to the President and Fellows of Harvard College, as well as the Peabody Museum of Archaeology and Ethnology, for permission to reproduce images herein and to Katherine Meyers for her help in scanning these images from the archives of the Corpus of Maya Hieroglyphic Inscriptions. Last, and certainly not least, we extend our appreciation for the great work conducted by all the workers from the village of San José Succotz.

References

- Aulie, H. Wilbur, and Evelyn W. de Aulie
1978 *Diccionario ch'ol-español, español-ch'ol*. Instituto Lingüístico de Verano, Mexico.
- Barchiesi, Alessandro
2002 Mars Ultor in the Forum Augustum: A Verbal Monument with a Vengeance. In *Ovid's Fasti: Historical Readings at Its Bimillennium*, edited by Geraldine Herbert-Brown, pp. 1-22. Oxford University Press, Oxford.
- Barrera Vásquez, Alfredo
1980 *Diccionario maya Cordemex: maya-español, español-maya*. Ediciones Cordemex, Merida.
- Beetz, Carl P., and Linton Satterthwaite Jr.
1981 *The Monuments and Inscriptions of Caracol, Belize*. University Museum, University of Pennsylvania, Philadelphia.
- Beliaev, Dimitri, and Albert Davletshin
2006 Los sujetos novelísticos y las palabras obscenas: los mitos, los cuentos y las anécdotas en los textos mayas sobre la cerámica del período clásico. In *Sacred Books, Sacred Languages: Two Thousand Years of Religious and Ritual Mayan Literature*, edited by Rogelio Valencia Rivera and Geneviève Le Fort, pp. 21-44. Verlag Anton Saurwein, Markt Schwaben.

- Borrero, Mario, Maya Azarova, and Geoffrey E. Braswell
2016 In the Place of the Wind God: The Discovery of the Nim Li Punit Wind Jewel. *Research Reports in Belizean Archaeology* 13:193-206.
- Brady, James E.
1997 Settlement Configuration and Cosmology: The Role of Caves at Dos Pilas. *American Anthropologist* 99(3):602-618.
- Bright, William
1990 "With One Lip, With Two Lips": Parallelism in Nahuatl. *Language* 66(3):437-452.
- Clayton, Peter A.
1994 *Chronicle of the Pharaohs: The Reign-by-Reign Record of the Rulers and Dynasties of Ancient Egypt*. Thames and Hudson, New York.
- Closs, Michael P.
1984 The Dynastic History of Naranjo: The Early Period. *Estudios de Cultura Maya* 15:77-96.
- Durán, Fray Diego
1964 *The Aztecs: The History of the Indies of New Spain*. Doris Heyden and Fernando Horcasitas, tr. and ed. Orion Press, New York.
- Forssmann, Alec
2016 Descubren una gran tumba maya en Belice y unos paneles con información muy relevante. *National Geographic – España*: www.nationalgeographic.com.es/historia/actualidad/descubren-mayor-tumba-maya-belice-unos-paneles-informacion-relevante_10587.
- Freidel, David A., Linda Schele, and Joy Parker
1993 *Maya Cosmos: Three Thousand Years on the Shaman's Path*. William Morrow, New York.
- Gardner, Martin
1977 Piet Hein's Superellipse. In *Mathematical Carnival: A New Round-Up of Tantalizers and Puzzles from Scientific American*, edited by Martin Gardner, pp. 240-254. Vintage, New York.
- Graham, Ian
1978 *Corpus of Maya Hieroglyphic Inscriptions, Volume 2, Part 2: Naranjo, Chunhuitz, Xunantunich*. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge.
- Graham, John A., and Howel Williams
1971 Two Unusual Maya Stelae. *Contributions of the University of California Archaeological Research Facility* 13:161-166.
- Grube, Nikolai
1994 Epigraphic Research at Caracol, Belize. In *Studies in the Archaeology of Caracol, Belize*, edited by Arlen F. Chase and Diane Z. Chase, pp. 83-122. Monograph 4. Pre-Columbian Art Research Institute, San Francisco.
- Grube, Nikolai, and Simon Martin
2004 *The Proceedings of the Maya Hieroglyphic Workshop: Patronage, Betrayal, and Revenge: Diplomacy and Politics in the Eastern Maya Lowlands*. Transcribed by Phil Wanyerka. University of Texas at Austin, Cleveland State University, Austin and Cleveland.
- Guenter, Stanley
2007 The Tomb of K'inich Janaab Pakal: The Temple of the Inscriptions at Palenque. *Mesoweb*: <http://www.mesoweb.com/articles/guenter/TL.pdf>
- Helmke, Christophe
2009 Ancient Maya Cave Usage as Attested in the Glyphic Corpus of the Maya Lowlands and the Caves of the Roaring Creek Valley, Belize. Ph.D. thesis, University of London, London.
2012a The Maya Pantheon. In *Maya III: Life, Death, Time*, edited by Maria Didrichsen and Harri Kettunen, pp. 62-103. Didrichsen Museum of Art and Culture, Helsinki.
2012b Mythology and mythic time. In *Maya III: Life, Death, Time*, edited by Maria Didrichsen and Harri Kettunen, pp. 160-185. Didrichsen Museum of Art and Culture, Helsinki.
in press "The Heart and Stomach of a King": A Study of the Regency of Lady Six Sky at Naranjo, Guatemala. *Contributions in New World Archaeology*.
- Helmke, Christophe, and Jaime J. Awe
2016 Death Becomes Her: An Analysis of Panel 3, Xunantunich, Belize. *The PARI Journal* 16(4):1-14.
- Helmke, Christophe, and Felix A. Kupprat
2016 Where Snakes Abound: Supernatural Places of Origin and Founding Myths in the Titles of Classic Maya Kings. In *Places of Power and Memory in Mesoamerica's Past and Present: How Sites, Toponyms and Landscapes Shape History and Remembrance*, edited by Daniel Graña-Behrens, pp. 33-83. Estudios Indiana 9. Gebrüder Mann Verlag, Berlin.
- Holloway, R. Ross
1987 Some Remarks on the Arch of Titus. *L'antiquité Classique* 56: 183-191.
- Houston, Stephen
1993 *Hieroglyphs and History at Dos Pilas: Dynastic Politics of the Classic Maya*. University of Texas Press, Austin.
- Houston, Stephen, John Robertson, and David Stuart
2001 Quality and Quantity in Glyphic Nouns and Adjectives. *Research Reports on Ancient Maya Writing* 47:1-56.
- Hull, Kerry M.
2003 Verbal Art and Performance in Ch'orti' and Maya Hieroglyphic Writing. Ph.D. thesis, University of Texas, Austin.
- Hull, Kerry, Michael D. Carrasco, and Robert Wald
2009 The First-person Singular Independent Pronoun in Classic Ch'olan. *Mexicon* 31:36-43.
- Jakobson, Roman
1987 *Language in Literature*. Krystyna Pomorska and Stephen Rudy, eds. Belnap Press of Harvard University, Cambridge.
- Kaufman, Terrence
2003 A Preliminary Mayan Etymological Dictionary. *FAMSI*: www.famsi.org/reports/01051/pmed.pdf
- Kaufman, Terrence, 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. State University of New York, Albany.
- Keller, Kathryn C. and Plácido Luciano G.
1997 *Diccionario Chontal de Tabasco (Mayense)*. Instituto Lingüístico de Verano, Mexico, D.F.
- Kettunen, Harri
2005 An Old Euphemism in New Clothes: Observations on a Possible Death Difrasis in Maya Hieroglyphic Writing. *Wayeb Notes* 16:1-31.

Sharper than a Serpent's Tooth

- Knowles-Berry, Susan M.
1987 Negation in Chontal Mayan. *International Journal of American Linguistics* 53(3):327-347.
- Krenzlin, Ulrike
1991 *Johann Gottfried Schadow: Die Quadriga*. Fischer, Frankfurt am Main.
- Lacadena, Alfonso
2010a Gramática maya jeroglífica básica. In *Introducción a la escritura jeroglífica maya*, edited by Alfonso Lacadena, pp. 34-54. 15th European Maya Conference; Sociedad Española de Estudios Mayas; Universidad Complutense de Madrid; Wayeb, Madrid.
2010b Naturaleza, tipología y usos del paralelismo en la literatura jeroglífica. In *Figuras mayas de la diversidad*, edited by Aurore Monod Becquelin, Alain Breton, and Mario Humberto Ruz, pp. 55-85. Universidad Autónoma de México; Centro Peninsular en Humanidades y Ciencias Sociales, Mérida.
- Lacadena, Alfonso, and Kerry Hull
2012 *Ancient Maya Poetics*. 17th European Maya Conference; University of Helsinki; Wayeb, Helsinki.
- Lacadena, Alfonso, and Søren Wichmann
n.d. Harmony Rules and the Suffix Domain: A Study of Maya Scribal Conventions. Manuscript.
- Laistner, M. L. W.
1921 The Obelisks of Augustus at Rome. *The Journal of Roman Studies* 11:265-266.
- Lounsbury, Floyd G.
1974 The Inscription on the Sarcophagus Lid at Palenque. In *Primera Mesa Redonda de Palenque, Part 2*, edited by Merle Greene Robertson, pp. 5-19. Robert Louis Stevenson School, Pebble Beach.
- Marcus, Joyce
1973 Territorial Organization of the Lowland Classic Maya. *Science* 180(4089):911-916.
1987 *The Inscriptions of Calakmul: Royal Marriage at a Maya City in Campeche, Mexico*. University of Michigan, Museum of Anthropology, Ann Arbor.
- Martin, Simon
1996 Tikal's "Star War" Against Naranjo. In *Eighth Palenque Round Table, 1993*, edited by Martha J. Macri and Jan McHargue, pp. 223-236. Pre-Columbian Art Research Institute, San Francisco.
1997 The Painted King List: A Commentary on Codex-Style Dynastic Vases. In *The Maya Vase Book, Volume 5*, edited by Justin Kerr and Barbara Kerr, pp. 847-867. Kerr Associates, New York.
2000a At the Periphery: The Movement, Modification and Re-use of Early Monuments in the Environs of Tikal. In *The Sacred and the Profane: Architecture and Identity in the Southern Maya Lowlands*, edited by Pierre Robert Colas, Kai Delvendahl, Marcus Kuhnert, and Annette Schubart, pp. 51-62. Anton Saurwein, Markt Schwaben.
2000b Los Señores de Calakmul. *Arqueología Mexicana* 7(42):40-45.
2005 Of Snakes and Bats: Shifting Identities at Calakmul. *The PARI Journal* 6(2):5-15.
2009 On the Trail of the Serpent State: The Unusual History of the Kan Polity. Paper presented at "The Snake Kingdom: History and Politics at Calakmul and Related Courts," University of Texas at Austin, Austin.
- Martin, Simon, and Nikolai Grube
2000 *Chronicle of the Maya Kings and Queens: Deciphering the Dynasties of the Ancient Maya*. Thames and Hudson, London.
2008 *Chronicle of the Maya Kings and Queens: Deciphering the Dynasties of the Ancient Maya*. Rev. ed. Thames and Hudson, London.
- Martin, Simon, and Érik Velásquez García
2016 Politics and Places: Tracing the Toponyms of the Snake Dynasty. *The PARI Journal* 17(2):23-33.
- Mathews, Peter
[1981]2001 Notes on the Inscriptions on the Back of Dos Pilas Stela 8. In *The Decipherment of Ancient Maya Writing*, edited by Stephen Houston, David Stuart and Oswaldo Chinchilla Mazariegos, pp. 394-415. University of Oklahoma Press, Norman.
- Morley, Sylvanus G.
1909 The Inscriptions of Naranjo, Northern Guatemala. *American Anthropologist* 11(4):543-562.
- Miller, Mary Ellen, and Karl Taube
1993 *The Gods and Symbols of Mexico and the Maya*. Thames and Hudson, New York.
- O'Connor, Michael P.
1980 *Hebrew Verse Structure*. Eisenbrauns, Winona Lake.
- Proskoriakoff, Tatiana
1993 *Maya History*. University of Texas Press, Austin.
- Roys, Ralph L.
1957 *The Political Geography of the Yucatan Maya*. Publication 613. Carnegie Institution of Washington, Washington, D.C.
- Ruppert, Karl, and John H. Denison, Jr.
1943 *Archaeological Reconnaissance in Campeche, Quintana Roo and Peten*. Publication 543. Carnegie Institution of Washington, Washington, D.C.
- Safran, Linda
1993 Points of View: The Theodosian Obelisk Base in Context. *Greek, Roman, and Byzantine Studies* 34(4):409-435.
- Scarre, Chris
1995 *Chronicle of the Roman Emperors: The Reign-by-Reign Record of the Rulers of Imperial Rome*. Thames and Hudson, London.
- Schele, Linda
1980 *Maya Glyphs: The Verbs*. University of Texas Press, Austin.
- Schele, Linda, and Peter Mathews
1979 *The Bodega of Palenque, Chiapas, Mexico*. Dumbarton Oaks, Washington, D.C.
- Schele, Linda, and Mary E. Miller
1986 *The Blood of Kings: Dynasty and Ritual in Maya Art*. Kimbell Art Museum, Fort Worth.
- Skidmore, Joel
2010 The Rulers of Palenque. *Mesoweb*: www.mesoweb.com/palenque/resources/rulers/PalenqueRulers-05.pdf

- Soledad López Oliva, Macarena
2012 El uso de las preposiciones ta y ti en los códices jeroglíficos mayas del período posclásico. Master's thesis, Universidad Complutense, Madrid.
- Sorek, Susan
2010 *The Emperors' Needles: Egyptian Obelisks and Rome*. Phoenix Press, Bristol.
- Stone, Andrea, and Marc Zender
2011 *Reading Maya Art*. Thames and Hudson, London.
- Stuart, David
1993 Breaking the Code: Rabbit Story. In *Lost Kingdoms of the Maya*, edited by George E. Stuart and Gene S. Stuart, pp. 170-171. National Geographic Society, Washington, D.C.
1998 "The Fire Enters His House": Architecture and Ritual in Classic Maya Texts. In *Function and Meaning in Classic Maya Architecture*, edited by Stephen Houston, pp. 373-425. Dumbarton Oaks Research Library and Collection, Washington, D.C.
2003 On the Paired Variants of TZ'AK. *Mesoweb*: www.mesoweb.com/stuart/notes/tzak.pdf
2005 Ideology and Classic Maya Kingship. In *A Catalyst for Ideas: Anthropological Archaeology and the Legacy of Douglas W. Schwartz*, edited by Vernon L. Scarborough, pp. 257-285. School of American Research, Santa Fe.
2011 The Unusual Glyphs of Calakmul's Stela 52. *Maya Decipherment*: decipherment.wordpress.com/2011/11/09/the-unusual-glyphs-of-calakmuls-stela-52/.
2012 Notes on a New Text from La Corona. *Maya Decipherment*: decipherment.wordpress.com/2012/06/30/notes-on-a-new-text-from-la-corona/.
2016 More on the Paddler Gods. *Maya Decipherment*: decipherment.wordpress.com/2016/07/28/more-on-the-paddler-gods/.
- Stuart, David, Marcello A. Canuto, Tomás Barrientos Q., Jocelyne Ponce, and Joanne Baron
2015 Death of the Defeated: New Historical Data on Block 4 of La Corona's Hieroglyphic Stairway 2. *La Corona Notes* 1(3):1-7.
- Stuart, David, and Stephen D. Houston
1994 *Classic Maya Place Names*. Dumbarton Oaks Research Library and Collection, Washington, D.C.
- Stuart, David, Stephen Houston, and John Robertson
1999 Recovering the Past: Classic Maya Language and Classic Maya Gods. In *Notebook for the XXIII Maya Hieroglyphic Forum at Texas*, edited by Nikolai Grube, pp. II.1-80. University of Texas, Austin.
- Surugue, Léa
2016 First Maya Tomb and Hieroglyph Panels Found in Belize Tell Story of Iconic Civilisation. *International Business Times*: www.ibtimes.co.uk/largest-mayan-tomb-hieroglyph-panels-found-belize-tell-story-iconic-civilisation-1574082.
- Tandet, Gabrielle
2013 Negation and Negative Pronouns in Chontal Maya. Honor's thesis, Harvard College, Cambridge.
- Taube, Karl A.
1992 *The Major Gods of Ancient Yucatan*. Dumbarton Oaks Research Library and Collection, Washington, D.C.
2004 Flower Mountain: Concepts of Life, Beauty, and Paradise among the Classic Maya. *RES: Anthropology and Aesthetics* 45:69-98.
- Thompson, J. Eric S.
1950 *Maya Hieroglyphic Writing: Introduction*. Publication 589. Carnegie Institution of Washington, Washington D.C.
- Tokovinine, Alexandre
2007 Of Snake Kings and Cannibals: A Fresh Look at the Naranjo Hieroglyphic Stairway. *The PARI Journal* 7(4):15-22.
- Tokovinine, Alexandre, and Vilma Fialko
2007 Stela 45 of Naranjo and the Early Classic Lords of Sa'aal. *The PARI Journal* 7(4):1-14.
- Townsend, Richard F.
1979 *State and Cosmos in the Art of Tenochtitlan*. Dumbarton Oaks, Washington, D.C.
- Valencia Rivera, Rogelio
2015 El rayo, la abundancia y la realeza. Análisis de la naturaleza del dios K'awiil en la cultura y la religión mayas. Ph.D. thesis, Universidad Complutense, Madrid.
- Valencia, Rogelio, and Ana García Barrios
2010 Rituales de invocación al dios k'awiil. In *El ritual en el mundo Maya. De lo privado a lo público*, edited by Andrés Ciudad Ruiz, María Josefa Iglesias Ponce de León, and Miguel Sorroche Cuerva, pp. 235-261. Sociedad Española de Estudios Mayas, Madrid.
- Velásquez García, Érik
2004 Los posibles alcances territoriales de la influencia política de Dzibanché durante el Clásico temprano: nuevas alternativas para interpretar las menciones epigráficas tempranas sobre Kaan. Paper presented at the V Mesa Redonda de Palenque, Palenque, Mexico.
2008a Los posibles alcances territoriales de la influencia política de Dzibanché durante el clásico temprano: nuevas alternativas para interpretar menciones históricas sobre la entidad política de Kan. In *El territorio maya: Memoria de la Quinta Mesa Redonda de Palenque*, edited by Rodrigo Liendo Stuardo, pp. 323-352. Instituto Nacional de Antropología e Historia, Mexico D.F.
2008b En busca de Testigo Cielo (ca. 561-572 d.C.): el punzón de hueso del Edificio de los Cormoranes de Dzibanché. Paper presented at the VI Mesa Redonda de Palenque: Arqueología, imagen y texto – homenaje a Ian Graham, Instituto Nacional de Antropología e Historia, Palenque.
2010 Los Dioses Remeros mayas y sus posibles contrapartes nahuas. In *The Maya and their Neighbors: Internal and External Contacts Through Time*, edited by Laura van Broekhoven, Rogelio Valencia Rivera, Benjamin Vis, and Frauke Sachse, pp. 115-131. Anton Saurwein, Markt Schwaben.
- Vogt, Evon Z., and David Stuart
2005 Some Notes on Ritual Caves among the Ancient and Modern Maya. In *In the Maw of the Earth Monster: Mesoamerican Ritual Cave Use*, edited by James E. Brady and Keith M. Prufer, pp. 155-222. University of Texas Press, Austin.
- Wichmann, Søren
2004 The Grammar of the Half-Period Glyph. In *The Linguistics of Maya Writing*, edited by Søren Wichmann, pp. 327-337. University of Salt Lake Press, Utah.
- Zender, Marc
2004 A Study of Classic Maya Priesthood. Ph.D. thesis, University of Calgary, Calgary.
2007 A Concordance of the Palenque Temple 18 Stucco Glyphs. *Mesoweb*: www.mesoweb.com/palenque/monuments/T18S/Palenque-T18S-Concordance.pdf.