The murals progressively uncovered at Calakmul over recent years supply a wealth of new data on the life of a major Classic Maya capital. Their subject matter has no precedent in Maya art and offers an opportunity to explore hitherto unknown social activities and practices. Crucially, the rich iconographic material from the paintings is joined by a substantial body of hieroglyphic inscriptions, producing an invaluable interaction between text and image in which each supports and illuminates the other.

The present study remains in many respects an interim effort. Eight seasons of work by the Proyecto Arqueológico Calakmul (PAC) have revealed much about the “painted pyramid” of Chiik Nahb Structure Sub 1-4 (see Carrasco Vargas and Cordeiro Baqueiro, this volume; Carrasco Vargas et al. 2009; Cordeiro Baqueiro 2012), but the work continues and a final report must await a range of analyses that are still in process—especially the full conservation and study of the uppermost third tier. Even so, this is an appropriate moment to report on the progress made thus far, and to give some idea of the significance of what has been uncovered from an epigraphic point of view.

Some 86 glyph-blocks have been identified on the murals, the great majority interspersed between the human figures in a manner characteristic of captions (Figure 1). Their state of preservation ranges from almost pristine to the faintest of traces. The glyphs in all phases of the paintings were originally outlined in black or dark brown, although in many cases this has decayed to a red-brown or pinkish hue. Some have plain interior spaces or are decorated with light brown highlights, but most are filled with solid areas of yellow tan, blue, or green. Each phase mixes styles and colors, making it difficult to assign particular glyphs to particular layers by appearances alone, although it is clear that those from the third and final phase are predominantly filled with yellow tan. The full technical analysis of the pigments and paint stratigraphy will ultimately refine and clarify the sequence as currently understood (see Carrasco Vargas and Cordeiro Baqueiro, this volume). Assorted glyph fragments with blue and tan infilling were recovered from the construction fill around Structure Sub 1-4 (Figure 2). Their original locations are unknown, but an associated figural fragment bears a close resemblance to the final phase of painting, suggesting that all may be remnants from the same program, probably from anciently dismantled portions of stairway.

Photographs and pencil drawings were produced on-site and later compared to the multi-spectral images produced by Gene Ware (2008). The line drawings reproduced here were traced from photographs and are not intended to replace measured tracings of the paintings themselves. The restricted space underground during excavation made technical photography difficult, and a number of drawings are composites made from two or more photographs in order to minimize distortion.

An evaluation of the third tier and other newly emerged texts has recently been completed and will appear in Martin (n.d.c), a study to accompany the complete publication of the murals in the series La pintura mural prehispánica en México.
middle of the seventh century. This is consistent with the chronology derived from ceramic evidence, both in terms of types recovered from sealed deposits within the building and those depicted in the paintings. Together these data suggest a placement between 620 and 700 (Boucher and Quiñones 2007:47).

The captions differ from those we normally see in Maya art in that they identify people by means of generic titles rather than by personal names. In most cases they follow a consistent formula and begin with Aj in one of two logographic versions. In an inversion of the normal pattern, it is the rare form—the “Flaming A’l’bat”—in which the sign aj’ “darkness” sprouts fiery voloes (Zender 2000:54)—which is the more common on the murals. In modern Mayan languages aj is a male agentive suffix that can be translated as “He of ...” but in the Classic period it was gender-neutral and applicable to both men and women (see Jackson and Stuart 2001:222). “Person” is therefore a suitable translation for us. Following aj in the formula comes the word lu’ k’u, which most likely renders "atole," from K4387 (Kerr and Kerr 1991:487) (drawing: Simon Martin); (b) SE-S1 caption 1 (photo: Juan Ignacio Cases Martín/PAC); (c) SE-S1 caption 2 (photo: Juan Ignacio Cases Martín/PAC).
archaeol

portrait form of the syllable dotted motif on his temple, very similar (but not identical) to the sign is an unknown glyph that has the head of an old man with a

passage is also opaque, although it is probably a personal if the Classic-era development of (e.g., Hull 2005:79; Kaufman 2003:420, 1318). Since the possible

"to leave" that is attested in several Western Mayan languages

spirit of the aforementioned inuk- es u-luk-ch statement. However, lok- may simply be a variant of the intransitive verb root luk-

The last of these is reflected in the causative forms luk'- s

and suffixed by ti, the main part is an unusual formulation by an uncommon and still-

of the previous scene, describing another "atole person" (Figure 7). At right we see a different formula, consisting of the female classifier IX—translated as "Lady" or sometimes "She of"—followed by an uncommon and still-

undeciphered hieroglyph (Figure 9). We will turn to a discussion of this important sign where it recurs elsewhere in the murals.

There is, in fact, one more text on SE-E1—a minutely incised inscription on the rim of the

the taking of the heavy pot from the bearer's head—echoing the

verbal and the suffix has that role here, our passage could refer to ones with a terminal imperative marker. If the phrase is indeed

combines a suffix that derives positional roots into transitive

communication 2008) notes that in Ch'orti' a

in the script but most likely a verbal suffix. Kerry Hull (personal communication 2008) notes that in CÓ or its - ihus ending

having. This high hip-cloth is the kind worn by males, but this

large pot and pours liquid from a spoon into a dish set atop a basket. The high hip-cloth is the kind worn by males, but this

First character in a fine woven hat embraces a large pot and pours liquid from a spoon into a dish set atop a basket. The high hip-cloth is the kind worn by males, but this

'sharp' is a tempting interpretation. However, the caption is on the opposite

elsewhere in the murals.

Given the general theme of consumption, the sense of "to swallow, gulp" is a tempting interpretation. However, the caption is on the opposite

no firm resolution yet in sight.

As we turn the corner of the building we come to SE-E1, a scene with three participants (Figure 6); for photos see pages 15 and 44-49). The first character in a fine woven hat embraces a large pot and pours liquid from a spoon into a dish set atop a basket. The high hip-cloth is the kind worn by males, but this

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caption, but the narrow-necked pot is similar to those in the

surrounding this is a hat in the form of a long, snouted mammal, possibly an opossum. There is no surviving caption, but the narrow-necked pot is similar to those in the

Crossing to SE-S2, we encounter a woman in the same broad hat seen on SE-E1 and a basket containing large hieroglyphs for WAAJ "tamales" (Figure 10). This iconographic representation of maize bread is familiar from the Postclassic Maya codices, where we find such glyphs set in plates with various meat fillings—fish, iguana, or turkey—sometimes protruding from their tops (Figure 11). On SE-S2 the woman offers a platter of small breads to a

little survives of the last scene on the bottom tier of the southeast corner, EsE-LSL1. We can make out the figure of an old man, with what seems to be a thin cigar in his mouth. To the right we see the remains of a taller individual. There is an accompanying caption, but beyond the outlines of the by-now-familiar AJ introduction, it is too ruined to read (Figure 9).

We return to the sidewall of the south stairway as we move up to the second tier and come to the scene designated EsE-

LIE2. This carries a detailed image of a bearer carrying a large pot using a tumpline drawn over his forehead (for photo see page 22). Tied to the neck of the vessel is a net bag containing round objects of an unknown nature, but possibly small gourd containers. Surmounting this is a hat in the form of a long, snouted mammal, possibly an opossum. There is no surviving caption, but the narrow-necked pot is similar to those in the

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man who takes one and brings it to his mouth. The caption reads AJ wa-WAAJ-ji (Figure 12).2 Food is an important topic in the murals, and well represented in the surviving captions, but at least as many scenes refer to other kinds of material. SE-E2 shows a male holding a short stick or spatula in one hand, a small pot in the other (Figure 13; for photos see pages 40-43). A second male faces him, leaning forward by taking his weight on his arms, his head down and his teeth bared. A series of painted splashes fall from his open mouth. It is noteworthy that his profile was first outlined by a short stick or spatula in one hand, a small pot in the other (Figure 15). The form of the caption is typical of those given its Proto-Cholan reconstruction and the complexity of the word in many modern Mayan languages (Alfonso Lacadena, personal communication 2007). The reaction of the man on SE-E2, who seems to be spitting or vomiting after taking mighty from the spatula, suggests a powerful effect whether it was recreational or curative in purpose.3 The next painting, on EsE-L1S2, appears on the south side of the east stairway. It shows a woman holding a banded object in her right hand, with two or three more of the same visible in the basket in front of her (Figure 16; for photo see page 15). The accompanying text, legible with the aid of multi-spectral imaging, reads AJ ya-yi, making ya-yi the object in question (Figure 17b). This word is familiar from dedicatory phrases on ceramic vessels. Many texts on Chochola-style incised cylinder vases, for example, use the possessed form usaj “his/her ya-yi” to introduce the names of their owners (Grube 1990:322) (Figure 17a). Ya-yi has been lost from most Mayan languages but survives in Mopan (Ulrich and Ulrich 1976) and in Tzotzil (Delgaty 1984) as “clay vessel, tecomate” (Hull 2003:419; Lacadena 1997). The woman’s caption can therefore be read as aj ya-yi “clay vessel person.” EsE-L1S2 occupies a rather narrow space constrained by the slope of the stairway (established by the corner of a small red-painted step to the right of the caption) and could not have accommodated a second figure. This is significant because it establishes that the captions refer to the providers of the materials in the scenes, as well as confirming that the aj term can be applied to women as well as men. An initial investigation of the third tier of the southeast stairway shows a woman holding a banded object in her right hand, with two or three more of the same visible in the basket in front of her (Figure 16; for photo see page 15). The accompanying text, legible with the aid of multi-spectral imaging, reads AJ ya-yi, making ya-yi the object in question (Figure 17b). This word is familiar from dedicatory phrases on ceramic vessels. Many texts on Chochola-style incised cylinder vases, for example, use the possessed form usaj “his/her ya-yi” to introduce the names of their owners (Grube 1990:322) (Figure 17a). Ya-yi has been lost from most Mayan languages but survives in Mopan (Ulrich and Ulrich 1976) and in Tzotzil (Delgaty 1984) as “clay vessel, tecomate” (Hull 2003:419; Lacadena 1997). The woman’s caption can therefore be read as aj ya-yi “clay vessel person.” EsE-L1S2 occupies a rather narrow space constrained by the slope of the stairway (established

2 In his ethnography of southern Belize, Thompson (1930:96) describes ya-yi as “a drinking cup” and illustrates it as a walled bowl (on Plate 16, although captioned there as an “eating dish”). In Tzotzil the entries for yaj include: “coccie grande para kottila” (Delgaty 1984) and “gondol, kotolila gonzol” (Lauttum 1970). The modern-day Mopan of Guatemala translate yaj as “plum.” Although these vessels are usually used for drinking and sometimes referred to as a taza (cup), I am indebted to Kerry hull (personal communication 2008) for describing the wider context of this term and its contemporary use among communities in Belize and Guatemala—compiled as part of his dissertation research in the 1990s.

3 The double complementation of wa and ji is unusual but far from unprecedented. It is seen, for example, in spellings of wa-WAAJ-ji only “co-essence” (Houston and Stuart 1989:3, Figure 1h, i). It might be motivated in part by the bivalency of the T506 sign (see Thompson 1962) as not only “co-essence” but also OHL “heart.” The iconic relationship between these values suggests some kind of conceptual tie, possibly a ritual connection to bread as an offering in place of human hearts.
corner from above revealed three scenes in good to moderate preservation (see photo page 11). The restricted space available for EsS-LtE3 is filled with a seated bearer carrying a bound pot on his tumpline—in much the same manner as EsS-LtE2, which lies directly below it on the eastern flank of the south stairway. No identifying captions were exposed. SE-S3 is more informative. Its image features a seated woman in a decorated huipil that closely parallels the colors and designs of that on SE-S1 (for which see Figure 1), here with the addition of a broad-brimmed hat slung over her back. Equipped with the spoon, dish, basket, and drinking cups of the “atole person” we saw on SE-E1 (Figure 6), she serves a male drinker.

The text confirms that atole is indeed the beverage in question. The first compound, u-BAAH, provides the standard introduction for illustrative captions, reading “(it is) the image of” (Figure 18a). Its appearance here on the eastern flank of the south stairway. No identifying captions was exposed. SE-S3 is more informative. Its image features a seated woman in a decorated huipil that closely parallels the colors and designs of that on SE-S1 (for which see Figure 1), here with the addition of a broad-brimmed hat slung over her back. Equipped with the spoon, dish, basket, and drinking cups of the “atole person” we saw on SE-E1 (Figure 6), she serves a male drinker.

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and completed by a suffixed II. It is strange to see the God C head in this context and we might interpret it in one of two ways. Firstly, it could be joined to the curl as part of a single compound sign. The full-form of mu combines the curl with a toad-like head, and it is possible that God C replaces it in a rare or idiosyncratic variant. The poorly understood overlap between mu and bu in the script might tempt us to entertain bu as another possible value. While mu-II is not meaningful in this context, bu-ll would yield bu’u “bean,” of potential relevance to the bean-shaped object in the man’s hand. However, another Phase 3 text, from SO-O1 (Figure 38), shows bu in its more conventional form—casting the “bean” reading into the realm of wishful thinking.10 This leads us to the second option, a spelling strategy in which logograms lose their semantic function and are used for their sound value alone. Although the God C portrait works as logographic K’U “god” in Postclassic Yukatek (Ringle 1988), this is only because this is a language in which terminal aspiants have been lost. In Classic times it always carries the glottal aspiant and was read as K’UH (Stuart et al. 1999:41). No viable contender for the sequence as written, mu-K’UH-II ma’-cil, emerges from Mayan lexicons, but if superimposition is at work then the order could easily be K’UH-mu-ll, setting up a possible tie to k’ih’um (“nixtamal” (Barrera Vásquez et al. 1998:82; Bricker et al. 1998:159; Holling and Tosiucin 1997:401; Ulrich and Ulrich 1976:64)). In this scenario K’UH-mu-II would produce k’ih’um or k’ih’um. Whatever material is involved here, it is the same as that mentioned on NE-E2 (see below).

10 In their full, digraphic forms both mu and bu consist of curls attached to a toad-like head. The bu version is distinguished by the addition of two or three lobes attached to the curl. Although this is fairly consistently applied during the Late Classic period, in earlier times the same lobed form can represent mu (for an example at Calakmul see Martin n.d.b), while bu appears without lobes when space was limited.

11 A supplemental entry for K’U-mu-II mentions how this dought could be tinted with annatto, a red seed pulp used to color food (Hull 2005:76)—reminiscent of the red substance in the woman’s dish.

too damaged to read. The second consists of the female classifier IX, which has been painted so as to half-obscure the same unknown hieroglyph we encountered on NE-E1 (Figure 8). We will again defer discussion of this sign to a little later in this study.

The next image not only follows the same lower ground-line we saw on NE-E2 by expanding into the inset molding, but it also continues onto the adjacent sidewall of the north stairway—making NE-N2 and EsN-LtE1 another continuous scene (Figure 27). The former shows a man, woman, and child,
each holding a vessel, with the child seated on a bound sack (for photos see page 31). The caption follows the recurring AJ with three syllabic signs (Figure 29a). The first and last are i and ma, and between them is a human skull distinguished by a string of dots running down its forehead and cheeks. This sign has a logographic function in several contexts, where it represents a place-name linked to the Underworld, perhaps reading XI' or XIXI. However, we also see it in its free substitution with the very similar-looking xi syllable—a skull with a ring of dots around its eye—and it is sure to have that function here (Figure 29b, c). The full spelling is thus AJ i-xi- ma for aj xiim “maize-kernel person.” The head of the Maize God has recently been read as logographic IXIM (Stuart 2000a:197), but this would be both the first syllabic rendition and the first reference to maize grains as a foodstuff. Additionally, the mural text makes clear that it has vowel complexity, probably producing the long vowel IXIM.

The adjoining En-Li2z supplies the image of an adolescent male who is intermediate in height between the adults and infant of NE-N2 (see Figure 3). His age is confirmed by his caption of ke-le-ma for k’el we “young man” (Figure 29). The fact that he shares the same ground-line and looks into the other scene—and that he is not involved in any activity of his own—all indicate that he is part of the “maize family.”

Northwest Corner

The fine preservation that distinguishes much of the eastern side of the building disappears when we cross to the western. Here the outer layer of stucco and its Phase 3 painting have often decayed to a powdery residue, leading to the exposure of underlying phases. In places this produces mixed, barely coherent images in which it is hard to discern which element belongs to which program. Few captions survive in legible condition and the epigraphic record is correspondingly meager.

Since no readable texts survive on the first tier we can pass over its scenes with brief descriptions. The image of En-Li01, on the northwest wall of the stair-well, supplies a standing male with a large parcel or sack, together with a partially preserved seated female. NO-N1 presents two men, a woman in a drinking scene, with traces of a Phase 1 image to the extreme right. The dress worn by the woman, her dish with its basket base, the large pot, the use of a spoon (whose outline is deeply incised in the stucco), and what may be a tied package set between them (Figure 31), suggest a Phase 3 scene with two seated males that have a tied package set between them (Figure 31). There is some wrapped object on top of the package and the figure on the right holds a matching one, perhaps examining or receiving it from his companion. The “receiver” wears a patterned headdress that seems to represent an armadillo—although an oversized olive shell with a green-headed snake looking out would be another possibility. He is mostly obscured by two overlying Phase 3 figures. One is seated and possibly female, the other a male who adopts a strange crouching pose while holding two unknown objects. The oversized design behind him, a MAN hieroglyph, is a caption belonging to the earlier phase. The blue-green-filled caption above the “supplier” is difficult to make out in normal light, but rather clearer in a multi-spectral image (Figure 22; for multi-spectral image see page 22). The first of two compounds is the “Flaming Ak’bal” version of AJ, but the next glyph is unfamiliar, consisting of a humanoid head with an extended mouth area and three large spots in its upper portion—resembling, but not matching, the rare portrait form of ni (David Stuart, personal communication 2006). The final sign, marked by a simple diagonal line, is also hard to tie to a known counterpart. The remains of an illegible Phase 3 caption appear below it.

NO-O2 presents an even more overt mixture of painting...
The poor preservation of the northwest corner continues on the southwest, although more in the way of epigraphic data survives. Much of the west stairway was torn down in the construction of later versions of Structure 1 and little of the sidewall carrying the EsO-LiS1 scene is now in place. We can make out a standing male, although closer inspection reveals that there are in fact two overlapping figures from different phases of painting. No caption survives. SO-O1 is another scene in which the Phase 3 painting was badly damaged, and what we see today is the Phase 1 image uncovered beneath. In Phase 3 there were once as many as three seated figures, a bowl or dish loaded with small, rounded objects painted red, and a glyphic caption. The Phase 1 scene shows three standing figures, two of them facing a large pot set on a cloth ring support, still wrapped in the bindings used to transport it (Figure 37). One of the facing pair, wearing a domed hat, looks over his shoulder toward the third figure.

The caption from Phase 3 was found in only moderate condition (Figure 38). The first sign was plainly AJ in its affix form, and the internal details of the next resemble syllabic chi in normal light but

layers (Figure 33). A Phase 1 image consists of a standing male with one vessel cradled in his left arm and a rather larger one in front of him. The held vessel contains two unidentified objects (one may be an ear ornament), while the lip of the large pot features a tied object of cloth or palm and a miniature figure, seemingly a rabbit (see photo, see page 34). As fellow project members have noted, this is reminiscent of the “rabbit scribe” seated in front of an open codex on a vase now in the Princeton Art Gallery (Coe 1973:91) and presumably a figure made from clay or wood. Above the pot we see a hand that is all that remains of a second Phase 1 figure—although it is easily mistaken for that of a seated female who, along with the male seated on a mat behind her, belongs to Phase 3. The woman wears her hat over her back, but the activity she was once engaged in is now lost.

The Phase 1 caption shows the remains of four glyphs, of which the first two are almost completely erased (Figure 34). The third shows internal details consistent with the at‘al sign and shows a volute beneath it that could be flames (conceivably this is a variant composition of the “Flaming Ak’bal” sign AJ, although only if the four-glyph block we see is in fact two closely spaced captions). The final sign is the head of a supernatural character, not unlike some divine monkeys. The remains of a Phase 3 caption, noticeably larger in size, appear just above the woman’s hat (Figure 35). The second of the two signs seems to be a head of some kind, but no other details can be discerned.

The second tier of the northwest corner concludes with EsO-LiN2. This features a seated woman in a dramatic blue huipil decorated with groups of triple spots. She holds her arms out in front of her, reaching over what seems to be a pot set on a coil of cloth; unidentifiable objects appear on top of it. A two-glyph caption is visible to the upper right (Figure 36). From its tan fill we can associate it with Phase 3, but although the first sign is clearly yet another “Flaming Ak’bal” form of AJ, the referent is too damaged to recognise.
the flames and its position at the head of a caption we might wonder if this is some alternative version of AJ. Reason to believe so emerges on SO-O2 and the identification will be examined when we reach that text. The second glyph on SO-O1 consists of a bird-head with a second, now-damaged sign in its mouth. The most common glyph of this kind has a small “person” sign in this infixed position, but there is currently no reading for this combination. The preponderance of syllabic spellings on these murals could suggest that it is employed as a syllabogram here. The final compound is spelled na-ba or just possibly ni-ba. Whatever the sense of this caption, it presumably relates to the contents of the large vessel depicted in the Phase 1 scene.

On SO-S1 we find three figures, two men and a woman, with two baskets set between them (Figure 40). The woman at right handles a thin stick with a splayed end, and 13 similar objects are seen projecting from the baskets, as if set into some pliable material as a deliberate display. Some look rather like paintbrushes but others have decorated ends in different styles (see photo, page 55). One, the leftmost in the basket to the right, looks like a crudely rendered head of the deity K’awiil. Bloodletters carved from bone are often embellished in this way, but the size of these objects suggests that they are larger pins for the hair, or possibly weaving picks. Even today, weaving picks have decorative carvings at their ends (Karl Taube, personal communication 2006). Some portions of Phase 1 painting are visible in the inset area below the panel, specifically the leg of a standing figure (not shown in the drawing). Some portions of the central male character seem to include a different layer, while the “ghosting” of his outstretched arm could be a trial underpainting or the remains of a separate phase.

The extant caption has blue-green-filled hieroglyphs which it shares with those on NO-N2 (for which see Figure 32) but no others on the still-surviving portions of the paintings (Figure 41). After the affix form of AJ we get logographic $\text{IHK’}$ “black,” before a mostly effaced second sign. Multi-spectral imaging helped to define its internal details but could not identify it. This could be a reference to the pins/picks depicted in the scene, which were originally painted a black-brown color. However, further analysis of the phase sequence is required before the scene and caption can be positively linked.

Despite the very poor condition of the next scene, EsS-LtO1, it is possible to make out a seated male. As with EsO-LtS1, first impressions are a little deceptive, however, since the image is actually composed of two different phases that align only in part. The rest of the scene was destroyed when most of the south stairway was anciently demolished and there is no surviving caption.
outlines characteristic of this phase. The first, identifying the left-hand figure, starts with a pair of signs that closely resemble those beginning the Phase 1 caption on SO-O1 (Figure 43a; for the SO-O1 caption see Figure 39). They differ only to the extent that the dark inking at the top of the second sign is more characteristic of logographic HA “water” than the ba syllabogram. A major pointer to its meaning comes from the companion caption identifying the right-hand figure (Figure 43b). Although damaged, it is clearly a version of the ‘Flaming Ak’bal’ form of Aj-4-na-ba-ki (Figure 45). The Inset Moldings

The Inset Moldings: This survey of the epigraphic material of the surviving portions of Structure Sub-1-4 has left one text unmentioned. A number of the inset moldings that form the base of each tier also carry hieroglyphs. Those beneath SO-S1, SO-S2, SE-S1, SE-S2, SE-S3, and SE-E3 show the same three-glyph passage in varied states of preservation while, apparently for lack of space, the narrow

moldings under NO-N3 and NO-O3 show only the central of the three signs. All can be assigned to Phase 3 on the basis of their tan fill. The example below SE-S2 is in the best condition and will be used to illustrate the whole set (Figure 46a).

The sequence begins with IX, the female classifier, followed by the same undeciphered logogram that we saw on captions from SE-E3 (Figure 41) and ES-F1 (Figure 44). The third and final compound reads S-TUUN-mi ba’ah/bakaux “nine stones.” It is clear that we have a female name or title here, but its meaning and significance are open to question.

The unknown glyph is rare and restricted to just a few contexts. In a text on page 68 of the Dresden Codex a form of the same sign is introduced by the preposition ta’ “at,” while in the corresponding scene it serves as an iconic throne for the rain god Chak (Figure 46b).14 Here it plainly represents a location, joining others in this section of the codes where Chak is shown on a “road,” a “cave,” and a “mountain.” On Cancuen Panel 1 it appears as the subject of the positional root pat “to make,” for example, “from it, to make it.” It is something that can be fastened, constructed, or assembled in some way (for see Stuart 1998:301–304) (Figure 46c). The unknown glyph also appears at the sites of Piedras Negras, Yaxchilan, and Zacpeten, in a sequence that closely resembles the “count of captives” formula (Figure 46d, e). On these occasions it is normally filled by a numerical unit, suggesting that it may serve the same or similar function. No instance supplies a phonetic clue to the reading of what is clearly a logographic sign.

The repeated names/titles appear to “label” the building in some manner, although their rather ad hoc placement, strongly favoring the south sides, remains unexplained. Who could this woman be? Much depends on whether the structure is predominately sacred or secular in character. If the former, she might be an otherwise unknown goddess, a priestess, or some other type of religious functionary. If the building had a more pragmatic purpose, the name/title could conceivably refer to the particular official/officeholder it housed. The ancient destruction of the building once supported by the painted platform (assuming there was one) makes further architectural understanding of this formula too poor to draw any conclusions. The sign’s two variants are designated as T29:563b and T563b:563b respectively in the Thompson (1962) system. For ‘nine’ as the term for “nine” during the Classic period see Miller and Martin (2014:281).

The seven sign-invariant designations are designated as T29-563b and T563b-563b respectively in the Thompson (1962) system.

14 For ba’ah as the term for “nine” during the Classic period see Miller and Martin (2014:281).

15 A typical case of correlations would be Aj-10-20-BAAK as jinט invinc.”

16 “He of Twenty-One Chichome,” a title borne by two different rulers or by one ruler on many occasions. The mystery sign appears in a similar-looking title carried by his father Shield Jaguar the Great—as on Yaxchilan Stela 19 at E2, where it is also prefixed by Aj and appears as an anthropomorphic deity shown smoking a cigar (see Valdés 1992:313). The unknown sign (Figure 46d, e) is in the best condition and

If it were once modified by the “doubler” diacritic marker—a mark of elite status (Figure 46c, d). One of these instances is normally filled by a numerical unit, suggesting that it may serve the same or similar function. No instance supplies a phonetic clue to the reading of what is clearly a logographic sign.

The repeated names/titles appear to “label” the building in some manner, although their rather ad hoc placement, strongly favoring the south sides, remains unexplained. Who could this woman be? Much depends on whether the structure is predominately sacred or secular in character. If the former, she might be an otherwise unknown goddess, a priestess, or some other type of religious functionary. If the building had a more pragmatic purpose, the name/title could conceivably refer to the particular official/officeholder it housed. The ancient destruction of the building once supported by the painted platform (assuming there was one) makes further architectural understanding of this formula too poor to draw any conclusions.
It is noteworthy that among the contemporary Ch’orti’ Maya a maize-
In response to my proposal of a market temple Stephen Houston
uncertainty given the profound changes that separate Postclassic
Spanish invasion, their projection into earlier periods is rife with
skewed. Equally, although we have fairly reliable historical
the archaeological data are impoverished and necessarily
most imperishable of materials survive in the tropical lowlands,
data—each emphasized to differing degrees. Since only the
theory, ethnographic or historical comparison, and excavation
social mechanisms by which goods and services were distributed
into the Maya economy, we lack a clear understanding of the
importance.

The images portray the transport, manipulation, transfer,
and consumption of various materials. Most show interactions
between providers and recipients, although a number depict
derriers or those engaged in display. In a few cases the materials
in question can be recognized, but for the most part they can only
be identified with the aid of their accompanying glyphic texts.
Most are practical or subsistence items, in several cases processed
in question can be recognized, but for the most part they can only
be identified with the aid of their accompanying glyphic texts.
Most are practical or subsistence items, in several cases processed
mazate. The depictions are schematic and the interactions open to
more than one interpretation, yet the profoundly social character
of these activities is clear and—given the prominent setting of
the paintings—we can take it that they were once of considerable
importance.

Despite a generation or more of serious scholarly inquiry
into the Maya economy, we lack a clear understanding of the
social mechanisms by which goods and services were distributed
in ancient times. Existing approaches commonly combine social
type, ethnographic, or historical comparison, and excavation
data—each emphasized to differing degrees. Since only the most
imperishable of materials survive in the tropical lowlands,
the archaeological data are impoverished and necessarily
skewed. Equally, although we have fairly reliable historical information on the economic systems in use at the time of the Spanish invasion, their projection into earlier periods is rife with
uncertainty given the profound changes that separate Postclassic
and Classic societies. Significantly, the hieroglyphic texts do more than identify
particular materials since, as we have seen, they consistently fix
them within titles denoting the affiliations or specializations of
individuals. These generic associations indicate some formal or
habitual character to the activities in the scenes. I have argued
elsewhere that this and other features are consistent with a
market scenario, with Structure 1 comprehensible as the focus of a religious-administrative compound at its heart (Martin
2007; Martin in Boucher and Quinones 2007:48). That position is
favored here again. 1 Yet even if this is a reasonable hypothesis,
we should remain alert to the possibility of systems of supply and
exchange that blur or sidestep the contemporary dichotomy
between capitalist and non-capitalistic economies (McAnany
1993). The “pilgrimage fair” (Freidel 1981) and similar festival-
based systems are examples of distributive networks in which
material consumption interacts with wider issues of socio-
religious performance and engagement (Boucher and Quinones
2007; Garcia Barrios and Cárceles Vargas 2008; Vázquez López
2006).

Precisely what the unique murals of Chilk Naab Structure
Sub 1-4 portray will continue to be debated, but there is no
question that they offer tantalizing glimpses into a once-hidden
domain. When their message is better understood we will
know substantially more about how the ancient inhabitants of
Calakmul went about their daily affairs, obtained the necessities
of life, and interacted as a communal whole.

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Marc Zender for their helpful comments and suggestions on this material.

1 In response to my proposal of a market temple, Stephen Houston
(personal communication 2007) suggested that the mystery glyph could be
Aj b’u’r/k’iu’ or djalol/Ishkilol/market. In this scenario other possibilities
include ch’al/otn, ch’iik/otn, or man’bal/ch’iik/otn or man’bal/’market.’ In this scenario other possibilities
include ch’al/otn, ch’iik/otn, or man’bal/ch’iik/otn or man’bal/’market.’

2 It is noteworthy that among the contemporary Chi’ort’ Maya a maul-
seller can be called simply aj/otn and a bean-seller aj/otn or
Barry Hull,
personal communication 2009).
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References Cited

Adams, Richard E. W., ed.
1986
Rio Azul Reports, No. 2. The 1984 Season. Center for Archaeological Research, University of Texas at San Antonio.

Aguirre Tanús, Mariana, and María Cordeiro Baqueiro
2007

Aulie, H. Wilbur, and Evelyn W. de Aulie
1978
Diccionario ch'ol–español, español–ch'ol. Instituto Lingüístico de Verano, Mexico.

Bagliani, Pierre, and Rodrigo Giorgi
2006

Barrera-Vásquez, Alfredo, Juan Ramón Bastarrachea Manzano, William Brito Samore, Refugio Vermont Salas, David Dzul Góngora, and Domingo Dzul Pot
1980

Bassie-Sweet, Karen
1996

Bassie-Sweet, Karen, Nicholas A. Hopkins, and J. Kathryn Josserand
2008
A Classic Maya Headdress. Manuscript.

Baudez, Claude François
1994

Becquelin, Pierre
2001[1969]
Arqueología de la región de Nebaj. Cuadernos de Estudios Guatemaltecos S. Centro Frances de Estudios Mexicanos y Centroamericanos, Guatemala.

Bernal Romero, Guillermo
2002a
El Pakal K'inch Janahb' Pakal, el nuevo gobernante de Palenque. Lakamha': Boletín Informativo del Museo de Sitio y Zona Arqueológica de Palenque 4(4-5).

2002b
Análisis epigráfico del Tablero de K'an Tek, Palenque, Chiapas. In La organización social entre los zapotecos, olmecos y mayasenes. Memoria de la Tercera Mesa Redonda de Palenque, edited by Vera Escobar Bilo, Rafael Cobos, and Merle Greene Robertson, v. 1, pp. 401-423, Conseulte, INAH, Mexico.

2006
El trono de K'inich Akbal Mo' Nahb': una inscripción glífica del Templo XXI de Palenque. MA thesis, Universidad Nacional Autónoma de México, Mexico.

Bongiovanni, Greg
2004

Borgers, Stefan F. de
1997

Boucher, Sylviane, and Lucia Quiñones
2007