



GLYPHS G AND F: IDENTIFIED AS ASPECTS OF THE MAIZE GOD¹

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Introduction

Being the first person to identify the cycle of the nine G-Glyphs, Thompson (1929: 224) noted that these hieroglyphs may represent an introductory glyph for the lunar series and may, according to Sylvanus G. Morley, name deities connected with the moon. Andrews (1936: 306) however, realized that Glyph G is outside of the Lunar Series as there is evidence for some of them standing isolated only with a Calendar Round. Thompson associated the nine G-Glyphs with the nine "Lords of the Night" known from the Mixtec Codex Borbonicus. In his basic publication about Maya writing, he stated that this cycle "... clearly corresponded in function to the nine lords of the night of central Mexico ..." (1950: 208). In the 1970s, Kelley tried to correlate the series with the Aztec and a Zapotec cycle of nine days. By comparing this cycle with a "series of nine planets" (Kelley 1972: 58) he attempted to correlate each glyph with a planet with the aid of the ancient Indian *Vishnu-dharma*. For example, he connected G7 with Saturn.

With the idea of the G-Glyphs as the "Nine Lords" established, all subsequent works focused on gathering more supporting evidence, and after the breakthrough in deciphering the system of Maya writing, in finding a phonetic rendering. Schele and Miller (1983: 90) read Glyph F as the "being in office" of the appropriate "G-God", based on the identification of the sign T128 as "tying" by Schele (1991b: 2) and T60 and its allographs as "headband" by Grube (Schele 1991a: 40, see also the discussion further below), an identification that has stood until the present paper. But, however, most epigraphers only felt comfortable labelling these glyphs as "G_x" and "F" and acknowledging that this cycle consists of nine different entities. Consequently, though many single signs of each G-Glyph have been deciphered in the last decades in other contexts, no attempt was undertaken to re-apply these readings to the G-Glyphs and to make a critical review of the previous interpretations. Since

¹ This paper was originally written in 2002 and has been presented at the 6th German Mesoamericanists Symposium in Berlin in 2003. It is only slightly revised here to cite another *Wayeb Note* (Gronemeyer 2003) that has been derived from this original work. Though some interpretations may not be up to date any more, I think that the general idea still may be a base of discussion.

most previous discussions on Glyphs G and F focused on “night gods” and “headbands”, I can ignore most of the results and questions from this hypothesis and concentrate on the evidence for my proposal as a maize-related cycle.

For the purpose of this paper, records of G- and F-Glyphs were collected from the corpus of inscriptions. Only those that are easily accessible and published in an appropriate manner were selected. Although not all inscriptions were taken into consideration, this selection created nevertheless a representative set of samples with more than 200 entries. The presence and specific characteristics of Glyph F, such as the type of main sign, were linked to each entry. The database was used to create statistical data, as is seen in Table 1. By displaying these features, patterns should become visible and some of them are described in the discussion below. It is also important to mention that the actual form that was written in the inscription was valid for the database entry since some G-Glyphs do not match the Long Count date. An investigation of those cases was conducted by Frumker (1999).

Regarding the identification of Glyph F and its main signs, the so-called “accession events” represented in iconography and epigraphy using T713a, the “binding of the headband”, were analyzed in seeking further hints for the presented proposal. A short exemplification of this will also be part of this paper. The results of this procedure were then applied to other uses of these main signs in order to test the hypothesis. However, these results will only be granted marginal notice in the following discussion since there is no direct association to Glyphs G and F.

In all cases of citation from dictionaries the original orthography was kept where possible. For the transliteration of hieroglyphic phrases, a further developed model of the original theory on complex vowels (Houston, Stuart and Robertson 1998) by Lacadena and Wichmann was used. All drawings are by the author.

The G-Glyphs as Aspects of the Maize God

The idea that the G-Glyphs could be manifestations of the Maize God arose primarily after the observation of several occurrences of the superfix T86 /**NAL**/ meaning “maize” (Stuart 1989). Also, G1 has a similar structure as the verb expressing the action of taking the divine *K’awil* sceptre, assuming a divine nature of the content (see below). With this working hypothesis, each G-Glyph and its variants were studied to find further evidence for the initial proposal. This of course creates a methodological problem since the hypothesis bases on an assumption and differs in principal in no way how Thompson established his idea of the “Lords of the Night”. That is also why the argumentation applied here differs somewhat from the normal way of stringency and an interpretation of each glyph is given directly after the examination of its respective variants to create a subsequent basis for the further understanding. Before going into the details of each glyph, some results and implications of the investigation will be presented to give a background for the following discussion.

Within this part of the article, I describe each hieroglyph² and its variants in brief overview and will attempt to present, wherever possible, a tentative reading for each hieroglyph and an examination of the meaning and the connection to God E as proposed in the introduction. These readings and interpretations are far away from being a complete account but should give a general idea and a start for further investigation. It must be kept in mind that not all variants and substitutions have a

² Though Glyphs G and F are really a collocation or a glyph block, respectively, the common term “hieroglyph” for such calendrical units will be kept here.

contributational value for the hypothesis. This is solely a matter of fact since the ancient knowledge and concepts were lost or at least diminished and changed with the transition of Maya Culture especially after the Spanish Conquest and are not always reconstructable for us.

The cycle can be divided into three parts. It starts with the origin and the preparation of maize, continues with a phase of transition and ends with the developed maize. This cycle reflects actual agrarian practices and is therefore more concrete than the mythological retelling of the death and rebirth of God E (for a recent summary cf. Quenon and Le Fort 1997), though at least concepts of this myth appear within the G-Series which can be seen very clearly in the second stage. The concept of different stages in the development of the maize plant can be recognized above all in the iconography where a "Young Maize" with a foliated head and a "Mature Maize" god with a tonsured head can be distinguished (cf. Taube 1992: 41-50).

Another clue on the three principal stages comes from the K'ichee'an *Poopol Wuuj*. Although it was written more than 500 years after the end of Classic Maya civilization in a different region, it is nevertheless of use because it encompasses a pan-Mesoamerican concept. Through the story it becomes clear that the Hero Twins are the maize when they place *elotes (ah)* in the house of their grandmother³ (Schultze Jena 1944: 71) before entering *Xib'alb'a*. When they die in the aftermath of the trials of the Lords of the Underworld, one can observe how the corn ears at first diminish, but then rejuvenate and refresh when the Twins are reborn⁴. Although there are some differences, this cycle is reflected in the sequence of the G-Series.



Figure 1: Pages 33a-34a from Codex Fejérváry-Mayer. From <http://www.famsi.org>.

The Mesoamerican parallel comes from the Mixtec Codex Fejérváry-Mayer (Figure 1), where on pages 33a-34a this trifold development is explicitly depicted. Another detail to be acknowledged is the concept of a *rite de passage* as developed by van Gennep ([1909] 1981), or, more specifically, the transition of a youth into an adult. As the following discussion will show, the second stage described by the G-Series illustrates the three staged model of shift whereas the first and second ones rather describe the state of being as the young and the mature plant.

Maize has long had supernatural connotations for the Maya. Even today, many Maya believe that maize is inhabited by a spirit, *Santo Ixim* (Thompson 1930: 48f.), which

³ Tedlock (1985: 293f., Note 331) already proposed this identification due to the connection with corn ears.

⁴ This may also be of importance for Glyph C of the Supplementary Series. Here, three heads alternate that are assigned to one trimester of six months (Linden 1996: 350): a skull, the young Maize God and the Jaguar God of the Underworld. If one takes a look at the time span prescribed by one trimester, it can be seen that these are 177 days, roughly the time maize needs to grow and ripe. It may be possible that we deal here with a greater maize related cycle than the G-Series is. For the connection of the Hero Twins as maize deities also cf. Tedlock (1985: 294, Note 331).

above all dwells in the last ears harvested. Kernels from these ears are used during the sowing of the next year to ensure that this spirit is again present in the *milpa*, and that the crop will not fail. Judging by these examples, one can see that the maize plant in all phases of growth bears some supernatural power, this is of special importance in the further discussion concerning the connection with Glyph F.

Since the G-Series is a running cycle of nine hieroglyphs, it is hard to speak of a beginning or an end, and therefore the labelling as G1 and so on is rather arbitrary, arising only from practical considerations. However, in other calendrical cycles, even our own, specific positions in such a cycle are marked as the "beginning" and the "end". My hypothesis argues that, purely by coincidence, the long ago established designation of G1 as the beginning and G9 as the end of the cycle is correct. And since a period-end always coincides with G9 this also points at this glyph being the end of the cycle.

The last remaining question to answer is why the cycle consists of nine glyphs. Considering the proposed agrarian nature a more elongated sequence matching the time of growth of the maize plant should be expected. But we have to keep in mind that in Mayan languages "nine" has also the supplementary meanings of "many, multiple" and "innumerable". The use of nine glyphs representing the different phases of growth very elegantly creates in fact a short summary implying multiplicity, despite the fact that some kind of "real-time" cycle may have existed as I already stated.

Origin and Preparation

This part of the series, after an introduction given by G1, deals with the corn in its pre-developmental stages before it shows signs of growth and fruit.

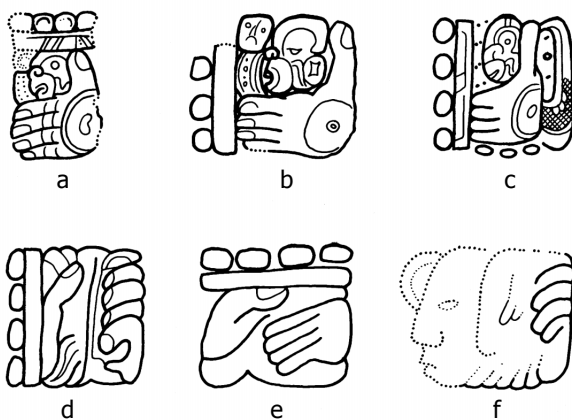


Figure 2: Examples of G1. Not to scale. (a) CPN St. I Back, A6a; (b) PAL T. XVIII Stucco; (c) PAL T. XIX HBh. South, B4; (d) PNG St. 36, A5; (e) "Pop Panel", A5 (Mayer 1987: Pl. 39); (f) TNA Mon. 113, B.

G1 (Figure 2) always has the numeral prefix nine (either in bar and dot system or with the head variant T1003) and one of two main compounds. The first of these compounds consists of the T670 hand /**CH'AM**/ translating as "grasp, take, receive" (Schele and Newsome 1991: 4), sometimes with T142 /**ma**/ as a phonetic complement. The God C head T1016 /**K'UH**/ (Barthel 1952: 94) and various "water group" affixes (T32, T36, etc.) are also infixed in the T670 sign. In one case, in the text from the south side of the bench in PAL T. XIX, B4, the expression is put into passive voice by a T181 /**ja**/-suffix. The second compound is the "Fish-in-hand"-glyph T714 /**TZAK**/ to "conjure" (Schele 1991a: 86). Together with the numeral prefix the whole phrase translates as "nine times grasping the deity" or "nine times conjuring". Both variants form a kind of explanatory "introductory glyph" for the cycle that tells the concrete range (rather than meaning "many") and what content will appear, already

pointing out to the divine nature of the individuals being named. Kelley (1972: 57) tried to read the glyph as *bolon tzacab* for "nine generations". In the light of the new interpretation presented here a pretty good thought. However, he attempted to link G1 to God K due to the similarity of his name in Colonial sources but omitting the different phonetics.

G2 (Figure 3) is composed of three single glyphs, a prefix resembling T45 and T46 reading **/HUL/** for "arrive" (Grube 2002), the T86 superfix **/NAL/** with its usual

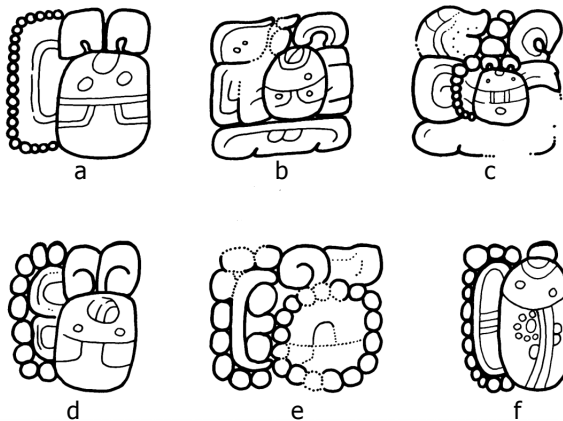


Figure 3: Examples of G2. Not to scale. (a) DPL St. 16, A4; (b) PAL PT, M17, with Glyph F; (c) PAL T. XVII P., B4, with Glyph F; (d) "Saint Louis Panel", B4; (e) TNA Mon. 30, A2; (f) XLM P. 2, A9a.

allographs and a main sign resembling T709 (note the differences in the lower part) for which Grube proposed a reading **/ABAK/** for "ink, soot" (Grube, pers. communication, 2002, also Boot 2002: 12). As we know from the *Calepino de Motul* (Ciudad Real [1577] 1995: f. 91v), ash was used to produce ink, the entry for *çabak* gives: "tinta negra de humo de cierto arbol ...". For the T86 superfix, I prefer its use as a locative suffix, forming with T709 a possible reading of "soot-place" which may actually name the ash-covered *milpa* directly after the burning in preparation to plant corn. Thus the whole collocation can be translated literally as "it arrives (at) the *milpa*". The "it" in this translation is obviously the seed being planted into the earth.

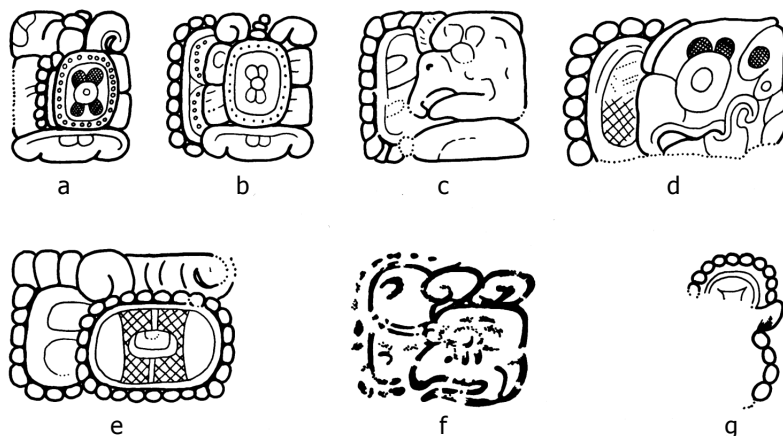


Figure 4: Examples of G3. Not to scale. (a) PAL TFC West J., B1, with Glyph F; (b) PAL ST, A9, with Glyph F; (c) PAL Stucco Glyph; (d) Site Q P. 4, A4 (Mayer 1987: Pl. 27-28); (e) TNA 9.17.16.10.1 Base, B1; (f) Yalxtepe Cave, A2; (g) YAX Lnt. 46, B3a.

G3 (Figure 4) consists mostly of two main elements: again the T45 and T46 prefix **/HUL/**, one time supported by a T24 **/li/** and the main sign T583 **/JAN(AB)/** or its head variant for the denomination of the (maize) blossom, forming a rough translation as "the maize flower arrives". In some rare instances, T583 is subfixed by T23 **/na/** or superfixed by T86 **/NAL/**. The root *jan* is known from several Maya languages (Aulie and Aulie 1978: 49) and I propose the *-aab* suffix assigned due to the syllabic composition of the name *K'inich Janaab Pakal* and documented in Western Maya languages, transforms this word into an instrumental. So G3 speaks of the first flowering of the young maize plant after the planting of the corn seeds. Since the

maize plant contains blossoms of both sexes, I believe only one type is intended here. In view of the fact that only the female flower cluster, or cob, produces kernels after pollination and what becomes the ear for harvest, I propose that T583 refers only to the female blossom.

Transition and Maturation

As proposed in the introduction, this stage describes the *rite de passage* from a juvenile to the adult maize plant. Growth is in all Mesoamerican cultures considered a difficult and dangerous stage and all G-Glyphs within this section are prefixed by numerals with a negative meaning and deal somehow with the underworld and are rather cryptic, a confirmation of van Gennep's observation of the existence of secret languages during such transitions.

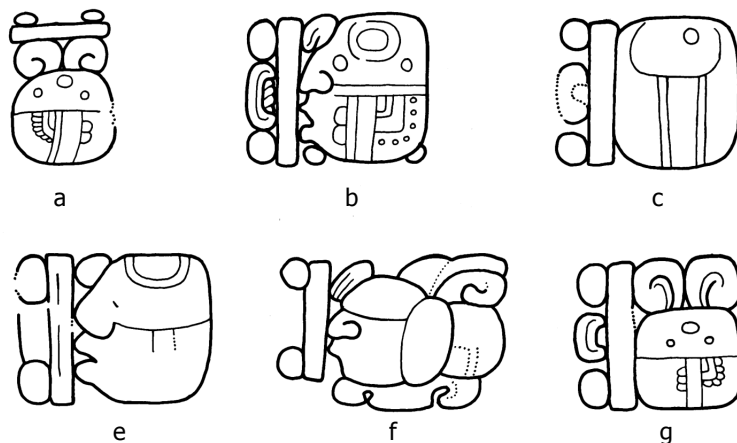


Figure 5: Examples of G4. Not to scale. (a) CPN St. A, A5; (b) DPL St. 8, A6; (c) IXK St. 2, A6; (d) NAR St. 24, C4; (e) TIK St. 4, B3; (f) TNA Mon. 175, B1.

G4 (Figure 5) consists of the numeral coefficient seven, followed most frequently by T506 and its head variant, likely the logogram **/WAJ/** which is usually translated as "bread, *tamale*, *tortilla*" (Taube 1989: 42) or T709, a conflation (including head variants) of T506 in the upper part and T518, the main sign of the complete form of **/'AJAW/**, in the lower half, in some cases accompanied by T86 **/NAL/**. As it has long been suggested by Thompson (1950: 209) and expanded by Frumker (1993), this glyph may be connected with deities of maize. With respect to the new interpretation presented here, this idea is correct, but for different reasons than previously thought. Concerning the other variants with the conflation of T506 and T518, a reading is difficult to give. Since T518 is the "overwritten" part of the **/'AJAW/** expression, we lack the usual T168 superfix. Therefore, a possible reading of *wuk waj ajaw* is not very likely. However, prepared corn ready for consuming directly after the flowering of the maize plant seems illogical also in regard to the different developmental stages of the maize plant. I would prefer the reference of the *elote*, the young ear of corn. In Ch'ol (Aulie and Aulie 1978: 105) *säc waj* means "maíz blanca", a sort of corn, and this hints that also the kernels or the ear itself can be tagged with this word (cf. Thompson 1950: 75, Taube 1989: 42). Furthermore, proof on this comes from some Early Classic representations of God E (cf. Taube 1992: 47, Figure 20 f-g) where T851 and T506 substitute as the base for sprouting maize foliation in the headdress⁵. Second, the occurrence of both T506 and T86 as words for maize represents another problem. In the Madrid Codex, f. 7b, a similar arrangement of glyphs is represented in the iconography. Perhaps it has something to do with T506 as a

⁵ As Stuart (cited in Orejel 1996: 76, Note 3) demonstrated, the combination of T86 plus T851 produces a full-form rendition of the logogram **/NAL/**, such as T168:518 does for **/'AJAW/**.

representation of a maize seed as the base for the sprouting of the plant (Taube 1989: 42). The combination of those two glyphs may rather form a completely new meaning. A clue to this might be the variant on TIK St. 4, B3 where G4 is subfixed by the otherwise senseless T23 /na/. In Ch'orti', the word *a'n* is used to designate the young ear of maize (Wisdom 1950: 456), and in Ch'ol it is *wajtan* (Aulie and Aulie 1978: 137). However, only speaking of "seven" would be too easy considering the nature of the numeral. Its head variant clearly identifies the Jaguar God of the Underworld (JGU), who is the nocturnal and infernal manifestation of the sun, as the patron of this number. The iconography of TIK T. 4 Lnt. 2 contributes more. There, Ruler B, *Yik'in Chan K'awil*, is shown seated on a large ceremonial litter (Martin and Grube 2000: 79). The back of this palanquin is made of a huge standing figure (Jones and Satterthwaite 1982: Figure 73), its face clearly rendered as the JGU. Most important is the corn foliation emerging from the jaguar ear which clearly identifies this figure, together with the other attributes, as G4, and it is further proof that T506 may also denote the maize plant itself. One must now ask if the meaning of "seven" is really intended for G4, and if not, then the reference to the JGU should be stressed. Since G4 is the first glyph of the hidden phase of transition, the allusion of the sun on its underworld journey seems logical before it is reborn in the eastern sky, such as the maize, especially the ear, will reappear strengthened just as the Hero Twins do after their threats in *Xib'alb'a*.

G5 (Figure 6) consists always of the numeral coefficient five prefixed to the main compound. Several alternate forms of it can be distinguished. One collocation from

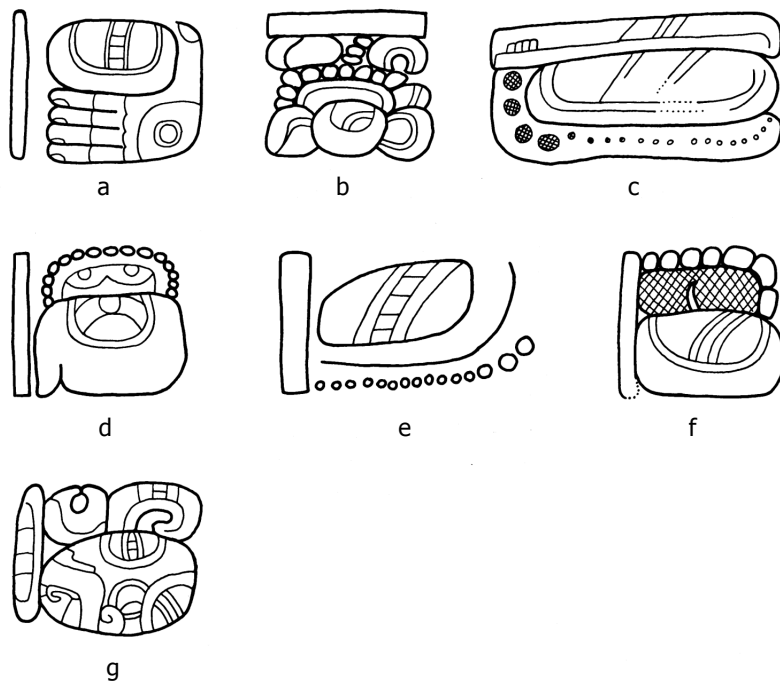


Figure 6: Examples of G5. Not to scale. (a) "Atkins Museum Lintel", C5 (Mayer 1995: Pl. 96); (b) CLK St. 89, Left A4a, with Glyph F; (c) "Hauberg Stela", A3; (d) HIG St. 1, A6; (e) "Leiden Plaque", A8; (f) PNG P. 2, D1; (g) YAX Lnt. 48, C7.

Los Higos (Thompson 1950: Fig 34/30) consists of a T45 superfix /HUL/ for "arrive" and a main sign T712 /CH'AB/ (cf. Boot 2002: 28f.), reading "creation", perhaps infixed with T617 reading /TZUK/ (Grube and Schele 1991) which is also the most common part of all G5 Glyphs. Another comes from PNG P. 2, D1 with a superfix including a dotted line and a darkened inside what may be a variant of T45/46 and the main sign T617. What translations T617 might take is part of the discussion below. Three other appearances come from a Lintel of unknown provenance (Mayer 1995: Pl. 96), the so-called "Houston Panel", and YAX Lnt. 1, B1a with T670

/CH'AM/ as "grasp". On the "Houston Panel" it is subfixed by T24 **/li/** as a nominalizer, and for the first two cases the object again being clearly T617. The most common form, especially in early inscriptions, consists of T617 infixed in a dotted line at the bottom and on one side. This form is likely the outline of T32 **/K'UH/**. A further single variant comes from YAX Lnt. 48, C7 with elements difficult to determine due to the early and rich style of the inscription. The superfix resembles a T130 **/wa/** or a form of a T86 **/NAL/**. The main sign has no T-number but may contain a T617 in the upper center. Due to the extreme sign variations, a reading and interpretation of G5 is difficult to give. But, as it can be seen, a narrow semantic reading indicates the "arrival", "grasping" or "creation" of some probable "divine" matter, expressed by T617. What, however, does *tzuk* now contribute to the solution of the meaning of G5?

Two principle semantic fields (Grube and Schele 1991: 3) are accepted for T617, first for geographical partitions and second a concept of age with the subsidiary meaning of wear and tear. The meanings of words given in Yucatec dictionaries widen dramatically, depending on the complexity of the vowel (cf. Barrera Vásquez 1995: 866-867). From this great variety, two possibilities seem likely. *Tzuk* means "las barbas que echa el maíz para arriba estando en la mazorca" and *tzukel* is defined as "pañal" and "andrajó" or "trapo". The latter semantic field is only attested for the Yucatec language. An "appearance" of the silks during the phase of growth seems not conclusive since they are the elongated pistils of the female blossoms which are described by G3. But considering the rather ritualistic nature of the second phase of the cycle, speaking of a nappy, rags or wrapping of clothes in general is far more contributinal. As Voß (pers. communication, 2002) informed me, even today infants are wrapped into cloths to hide and protect them against supernatural influences that may harm the young. Further support of this meaning comes from accession phrases using T713a, where in some instances T617 substitutes for the usual *sak hu'n* bundle. Therefore, I propose that after the descending of G4 period into the underworld, G5 is, as a safekeeping measure, wrapped into such clothes. An account by Bricker (1986: 152, see also the discussion concerning the meaning of Glyph F) shows furthermore that during the liminal period of a *rite de passage* wrappings are used. Figure 7) consists of a numeral coefficient nine and T739, the still undeciphered main sign of Glyph Y of the Supplementary series⁶. Lacking a reading for T739, one cannot give a full interpretation. However, Taube (1989: 45f.) already has suggested a connection between this glyph and God K and the maize *tamale*. The interpretation of the G-Series as manifestations of the Corn God strengthens this thought. The number nine was used by the Maya to indicate "many". It also indicates connections with the underworld. Considering the nature of the preceding two glyphs, the latter variant seems more plausible. However, without knowing the exact meaning, we

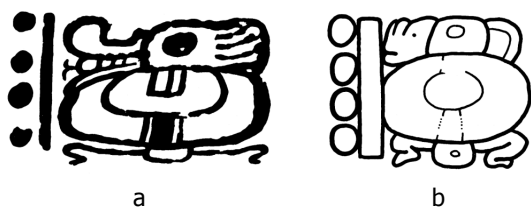


Figure 7: Examples of G6. Not to scale. (a) RAZ Tb. 1, A5, (b) YAX St. 6, A6.

⁶ Note that Thompson (1950: Figure 34) misidentified G6 and that the displayed example is actually G4.

cannot be certain of anything except that G6 has to describe the acceptance of the new state of the maize as a ripe plant.

Ripeness and End

The last three hieroglyphs share one thing. They contain or consist of single glyphs expressing different forms of the mature maize ear and are therefore the ultimate developmental stage.

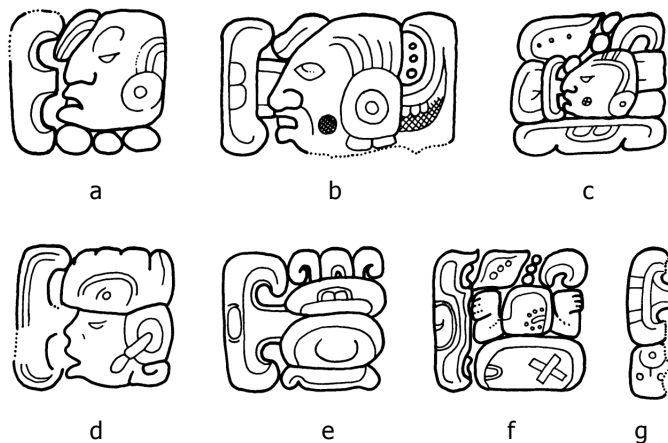


Figure 8: Examples of G7. Not to scale. (a) BPK St. 2, A2; (b) CPN St. 5, A5; (c) PAL PT, A15, with Glyph F; (d) PNG St. 3 Back, B4; (e) QRG St. D, A8; (f) QRG St. E, A6, with Glyph F; (g) YAX Lnt. 29, B4a.

G7 (Figure 8) consists always of a prefix T4 **/na/** which is mostly attached to a main sign T1008 which I read as **/NAL/** due to phonetic reasons and because it resembles the head of the Corn God. In singular instances it is suffixed by T178 **/la/** on BPK St. 2, C2 and by T181 **/ja/** on CPN St. 5, A3. A very short version, only written with T4 occurs on TRT Mon. 6, F7. On PNG St. 3, B4 Back, this head is combined with T221 **/OCH/** for the verb "enter" (Schele 1991a: 40). It is not clear which function T4 has. I disagree with Schele (Schele, Mathews and Lounsbury 1990) that together with T1008 it is part of a complex sign for **/na/** since the position of T4 can vary. A phonetic complement for T1008 is likely, since the example from YAX Lnt. 29, B4a only reads T4:T178. However, it is probably used as the ordinal number "first", since it also occurs in completely different spelled variant and is never replaced by any other allograph reading **/na/**. Considering G7 is the first aspect of the last phase of development, I prefer this suggestion, which reads **na(-OCH)-NAL** and translates as "the first (entering of the) maize ear". T178 seems to be clearly a complement for T1008, but the use of T181 remains questionable. What is entered, in respect of the proposed reading of G2, is certainly the *milpa*. Since T221 occurs in this context only once, it must be considered a variant form of the "usual" G7. It mentions obviously the first appearance of a well developed ear that does not have to be concerned of more danger of harming influences after the hidden phase of growth. Interestingly, these spellings of G7 are the same as the glyph for the cardinal direction "north", a circumstance I cannot explain. Regarding the aforementioned variant of G7, only two weathered examples are available: QRG St. D, A8 and PNG St. 8, A5. Although erosion makes the identification of some graphemes difficult, the complete main sign appears to be **/tz'a[pa]/** (Grube 1990) subfixed by an unclassified sign. The whole phrase would then translate as "first planting" or "first erection". At first, speaking of this after the first two stages, especially considering the contents of Glyphs G2 and G3, seems implausible. But if one considers the underworld passage of the maize, described by G4 to G6, this expression may be a metaphor for the reappearance,

either of the whole plant or of certain elements such as the ear or leaves⁷. There is also one collocation (Figure 7f) from QRG St. E, A6 which was believed to be a special variant of G7 (conflated with Glyph F), but indeed it seems to be an example of a manipulatory intervention (cf. Jones 1992: 45f.). By replacing usual features of G7 with the collocation T175:82 for **/TIL-li/**, the Quiriguá lord *K'ahk' Tiliw Chan Yopaat* added a part of his name, making him the Maize God on the day of his accession.

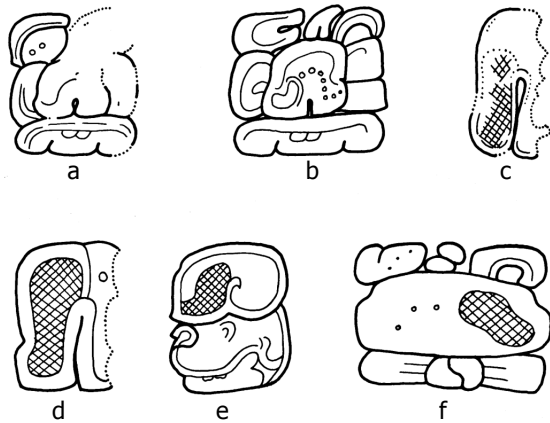


Figure 9: Examples of G8. Not to scale. (a) CPN St. 10, A4, with F; (b) PAL TC, A10, with F; (c) PNG St. 14, B7a; (d) SBL PT 1, D2; (e) "Walter Randal Stela", B5 (Mayer 1980: Pl. 61); (f) YAX Lnt. 21, B4, with Glyph F.

G8 (Figure 9) is solely composed of the sign T155 for **/OL/** (cf. Boot 2002: 63) meaning "heart, opening, middle, center" among other translations. As I know from contemporary Yucatec *campesinos*, the ripe corn ear is thought to be the "corazón de las hojuelas" (cf. Teran and Rasmussen 1994: 207). The *Calepino de Motul* (Ciudad Real [1577] 1995: f. 349r) further states for *ool*: "tallo o cogollo tierno, assi de yervas como de arboles y otras plantas." The conception of the ear as the heart of the plant is not restricted to Yucatán, but also appears in the Highlands of Guatemala, as the following quote shows: "[...] it is because 'the heart of the corn has not died' that the seed corn is able to sprout [...]." (Tedlock 1985: 293f., Note 331). Thus G8 has to be the ultimate stage, the ripe ear, which is used not to produce sustenance but rather to provide seed for the next season of cultivation and to ensure that the power inherent in it will again lead to a rich and successful harvest (cf. Thompson 1930: 48f.). This glyph may also very well be the epigraphic counterpart of the "Tonsured Maize God" identified by Taube (1985). Sadly, no full-figure variants of G8 exist to prove this suggestion.

G9 (Figure 10) is the end of the cycle and indicates completion. This glyph shows extensive substitutions and sign variation which makes a phonetic reading and interpretation difficult to determine. Very often this glyph consists of the superfix T86 for **/NAL/**, in some instances, e.g. on CPN St. I, D2 or CPN St. 9, A6, it is also complemented by T178 **/la/**, as well as T135 for **/CHAN/**. The main sign is usually T544 or T1117, the head of the aged Sun God. Both give the reading **/K'IN/** and are occasionally postfixed by a T116 **/ni/** phonetic complement. In other cases, a half-darkened Sun-Glyph, T545, or graphic variants, substitute for the main sign or T544 is infixed into T95 **/IK'/** for the color black. On QRG St. F, C6a, the sun sign of T1117 is completely darkened. In all cases, the upper part of T1117 or the complete T544 is

⁷ As it is stated several times in the *Poopol Wuuj* in connection with the corn ears placed by the Hero Twins, new fresh leaves appear when they will be or are indeed reborn.

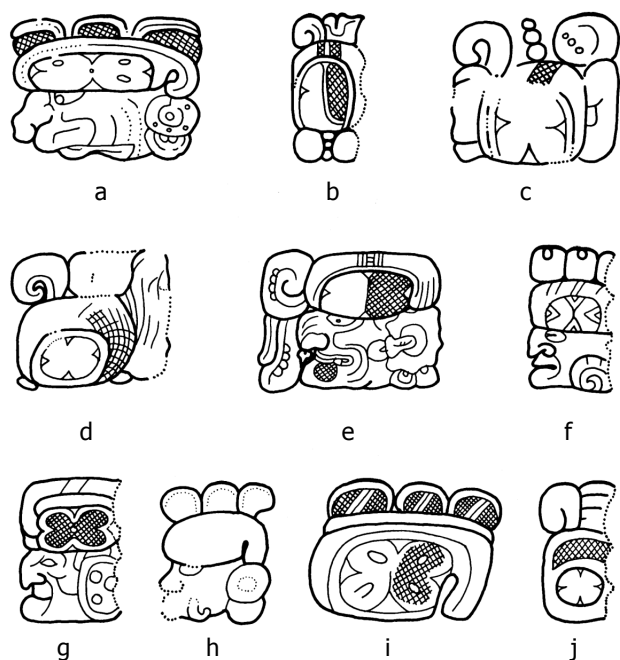


Figure 10: Examples of G9. Not to scale. (a) CPN St. 63, B9; (b) CPN St. I, D2; (c) CPN T. 11, N Door, W P., C3, with Glyph F; (d) DPL St. 5, M1; (e) NAR HS. 1 Step V, J3; (f) QRG St. E, D5a; (g) QRG St. F, C6a; (h) TIK St. 27, D1; (i) TIK St. 31, A8; (j) YAX Lnt. 3, B1a.

infixes into T17 */yi/*⁸ and in very few cases, e.g. on QRG St. E, D5a, the situation is vice versa. Clearer than in all other cases, the single signs of G9 can be identified as the full figure variant on CPN St. D, B4. Another interesting variant is the full figure glyph on QRG Zoo. B (Maudslay 1974-II, Pl. 14). Though mainly destroyed, one can recognize that the head of God E substitutes for the usual T86. Investigating the different variants of G9, one can detect that the superfixes T86 and T135 never appear together in one single collocation. Perhaps it is the result of a semantic substitution, a phenomenon for which there are examples in the G-Series. The use of T545 or other black marked sun signs is independent from the actual superfix and T17. The use of T17 proved to be slightly problematic, since its use indicates a possessed noun beginning with a */i/*, a prerequisite that no infixed sign offers. Thus the noun has to be included in the syllable */yi/* itself, therefore being solely *i'*. Such a word with the meaning "hawk" has already been isolated in Maya writing (Boot 2002: 37). Yet there is another possibility. In other Maya languages (cf. Aulie and Aulie 1978: 45), *i'* or *ij* translates as "grandchild"⁹ and I propose this meaning in the context of G9, though such a word has not yet been isolated in Maya writing. In connection with the T86 superfix one would get a translation of "grandchild of the sun is the maize", a very fitting description for the ultimate stage. Still, it is hard to determine which function the T135 takes and what exact phonetic rendering the (half-)darkened sun sign carries, and the translation presented above must remain a proposal. But again, as it is the case with G1, this glyph and all its variants seem to be an expression denoting the end result of the cycle and a period of transition: the corn is ripe and ready for harvest: in the upcoming season cultivation will start anew. The use of the black markings in contrast to the sun signs may be a hint that completion is intended. This finds further confirmation e.g. by the use of the relational

⁸ There is one other context outside the G-Series where this infixation occurs. It is the name of Tikal Ruler B, probably *Yik'in Chan K'awil* (Martin and Grube 2000: 48) and translated there as "*K'awil* that Darkens the Sky".

⁹ Also cf. Wisdom (1950: 476) for word formations with *ih-* prefix for terms meaning or related to "sibling".

unit variants of T573a **/TZ'AK/** (Riese 1984) written with a number of paired signs representing "the concept of complementary opposition." (Zender 1999: 74).

Appearance and Forms of Writing of Glyph F

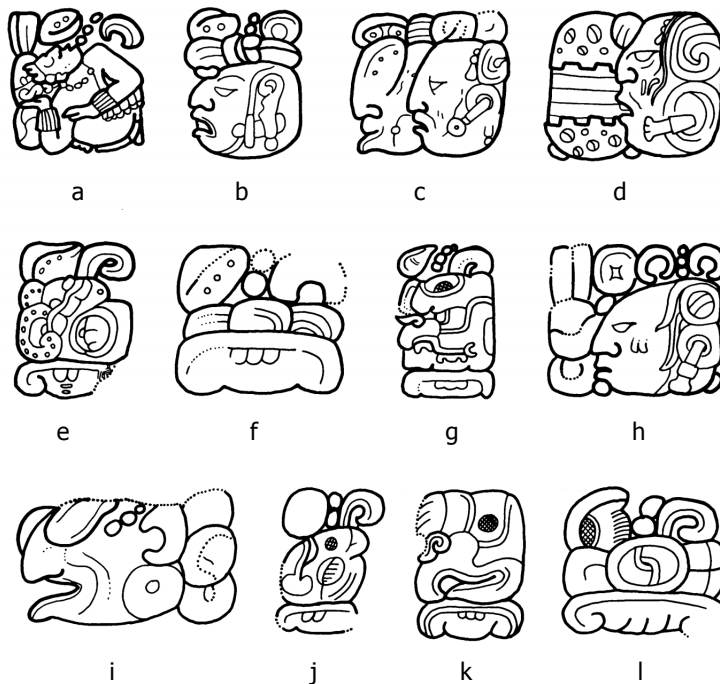


Figure 11: Examples of Glyph F. Not to scale. (a) CPN HS, Date 24; (b) CPN St. A, B5; (c) DPL St. 5, N1; (d) DPL St. 8, B6; (e) PAL OLV, Pil. A, B4; (f) PNG St. 1, A9; (g) QRG St. A, B6b; (h) QRG St. K, B5; (i) Site Q P. 4, A4; (j) YAX Lnt. 26 Front, E1b; (k) YAX Lnt. 46, B3; (l) YAX Lnt. 48, D7.

Though very simple and, as this examination will show, predictable in its general configuration, Glyph F as a single unit does have interesting variations and substitutions in its detail. In its most common form¹⁰, this hieroglyph consists of three single signs (Figure 11). Frequently, in 20.9 % of the examples in the database, a third person singular ergative pronoun **/u/** is prefixed, mostly by using T1 or T204a. The superfix¹¹, which is absent only in 3.7 %¹² of all examples, is the sign T128, its head variant (no T-number), or another zoomorphic head, pT944 (Ringle and Smith-Stark 1996: 352) all reading **/TI'/**. For the main sign, six hieroglyphs substitute. The first four, T60a, T609b, T665 and T1030o, all have the phonetic value **/HUN/**, the fifth, T1000v, is the head variant of the number "one" and reads **/JUN/**¹³, the sixth, T740, is read as the syllable **/hu/** (Schele 1991a: 40). The suffix, absent in only 16.2 % of all cases, is either T23 or variants of T1000 and in one instance, on TNA Mon. 91, D1, a T537, all reading **/na/**. It serves as a phonetic complement for the logographic main signs, and in the case of T740, it combines with this sign to form a syllabic **/hu-na/**. Which meaning does *hu'n* have, is the topic of the discussion below. Of the five logographs, T60a is the most common with 72.7 % of all examples. T609b has four records within the corpus of investigated examples¹⁴, least prominent are

¹⁰ To speak of a "complete" form would be an erroneous assumption. Considering Glyph G and F as a name phrase, one should keep in mind the extreme variations that may occur in nominal phrases.

¹¹ Inscriptions where T128 is not written: CPN St. 5, A5; CPN St. D, B5; DPL St. 8, B6 and TNA Mon. 85, B4.

¹² In one instance, on YAX Lnt. 46, B3, the main sign T1017 is conflated with the superfix, which seems to take the form of a head variant.

¹³ These substitutions occur only in the south-eastern area and may be a result of the loss of distinction between velar and glottal spirants proposed by Grube (2002b).

¹⁴ Inscriptions with T609b as main sign: CPN St. D, B5; DPL, St. 8, B6; PAL H. E fresco, L1; TLA St. B, A7.

T1000v with three occurrences¹⁵, and T665 with two examples on QRG Zoo. P and one on PNG St. 3. The appreciable uniformity in the use of the main sign does not allow detailed statements about the spatial distribution of the substitutes, but one can e.g. observe that T740 is for the most part restricted to Yaxchilán, whereas the south-eastern region, especially Quiriguá, has a preference for T1030o. Table 1 gives a listing of all statistic data concerning Glyph F and their relationship to Glyph G.

G-Glyph	Quantity	F present	/u/ present	/TI/ absent	/na/ absent	/li/ present
G1	8.9 %	82.4 %	35.3 %	0.0 %	11.8 %	0.0 %
G2	10.5 %	55.0 %	0.0 %	0.0 %	0.0 %	0.0 %
G3	5.6 %	81.8 %	18.2 %	0.0 %	18.2 %	18.2 %
G4	5.2 %	90.0 %	40.0 %	10.0 %	10.0 %	0.0 %
G5	5.2 %	60.0 %	0.0 %	0.0 %	10.0 %	0.0 %
G6	1.0 %	50.0 %	0.0 %	50.0 %	0.0 %	0.0 %
G7	6.8 %	75.0 %	33.3 %	0.0 %	16.7 %	0.0 %
G8	7.3 %	100.0 %	21.4 %	0.0 %	21.4 %	14.3 %
G9	49.7 %	84.2 %	22.1 %	5.3 %	21.1 %	4.2 %
Total	100.0 %	80.6 %	20.9 %	3.7 %	16.2 %	4.2 %

T60a	T609b	T665	T740	T1000v	T1030o
72,7 %	2.6 %	1.3 %	3.9 %	2.0 %	16.2 %

Table 1: Frequencies of the nine G-Glyphs and their connection with Glyph F. The second part of the table shows the overall quantity of the different main signs within the record of all G-Glyphs.

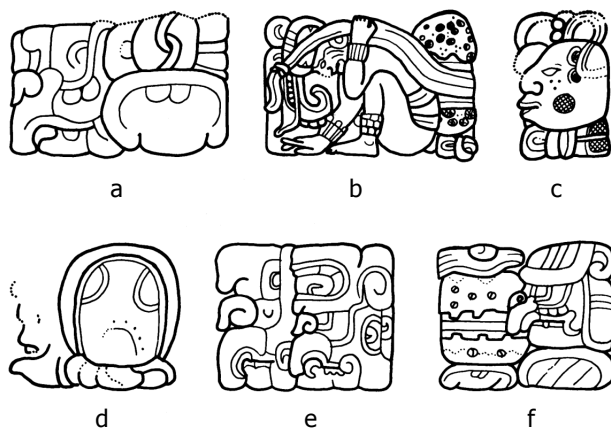


Figure 12: The “duplicated” F-Glyphs. Not to scale. (a) CPN St. 5, A5b; (b) CPN St. D, B5, with G9; (c) CPN St. I, A6b; (d) PNG St. 3 Back, A5; (e) QRG St. D East, B8; (f) TLA St. B, A7.

In some rare instances, the usual subfix **/na/** is replaced or adjoined by the syllables T24 **/li/** or T178 **/la/**. The additional syllable is only written when the respective Glyph F is adjoined by the third person singular ergative pronoun. An explanation of what function this has, will follow later in the paper.

There are some further special compositions, which are important for understanding the cycle discussed here. One form consists of a “duplicated” F-Glyph, which means that two of the logographic main signs are written, mostly without the usual T128 superfix. Only a few examples (Figure 12) are known, e.g. from TLA St. B (Mayer 1991: Pl. 222), CPN St. 5, CPN St. D, CPN St. I, likely the weathered PNG St. 3, QRG St. D (Maudslay 1974-II: Pl. 25). Two other F-Glyphs (Figure 13) exist that have a merely singular reference within the corpus of recorded inscriptions. The first one comes from CPN St. I, D2b and shows in addition to the T128 superfix its head variant pT944. The other unique form is found on PNG St. 10, A6 Left and is a conflation with G9. Here, the usual T60 knot is accompanied by T58 **/SAK/**, a combination well known from a specific title (c.f. PMT Panel) and accession expressions in Palenque.

¹⁵ Inscriptions with T1000v as mains sign: CPN Alt. K, D2; CPN St. I, B6; CPN St. 5 East Altar, E1.

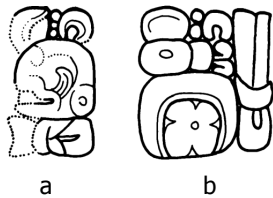


Figure 13: Singular occurrences of Glyph F. Not to scale. (a) CPN St. I, D2b; (b) PNG St. 10 Left, A6 (combined with G9).

Connections between Glyphs G and F and a syntactic Analysis

As Table 1 shows, in most instances one of the G-Glyphs is related with Glyph F and within this connection, a third person singular ergative pronoun usually occurs. Further evidence for the close relationship between those two glyphs comes from the confluences of a G-Glyph with Glyph F which occurs in 19.3 % of all samples¹⁶. In these cases, a distinctive and diagnostic feature of the respective G-Glyph is prefixed or replaces the main sign of Glyph F, or even more often, it is infixed in the knot of the T60a bundle¹⁷.

In some cases, these very extreme reductions of the appearance of Glyphs G and F show that we in fact deal with a formulaic expression, in which certain diagnostic elements, such as a “nuclear name” can stand *pars pro toto*, which is a common pattern in personal names (cf. Grube: 2002a). Thus the actual rendering of the two glyphs is more an aesthetic matter in consideration of space than one of the meaning or the actual reading. As Lounsbury (1984: 169) already noted, “... the variant forms of Glyph F can be assumed most likely to be free, since no constraining contextual factors have yet been isolated either in the Glyphs G or in any other associated variable.”

Without knowing the exact meaning of Glyph F or even any of the G-Glyphs, we are able to determine the syntax of the two glyphs. The whole compound forms a stative sentence name (cf. Grube: 2002a) with Glyph G as the non-verbal predicative and Glyph F as the subject, reversing the syntactic analysis from Lounsbury (1984: 196). Glyph F forms a nominal phrase of different complexity, with the T128 possessed by the /HUN(-na)(-li/-la)/ compound as indicated by the common ergative. Now considering both glyphs as a name phrase of a maize deity, Glyph G would be the part of the proper name and Glyph F a specifying name making a spatial reference (see below). This also explains what Thompson (1950: 212) already stated: “Glyph F, because it never appears without Glyph G and is often fused with it [...], should explain or amplify the function of Glyph G.” The absence of Glyph F can therefore be explained with an ellipsis of the subject, since it is the same with all G-Glyphs and therefore known and part of a discrete unit in the semantic pool.

Meaning of Glyph F

The reading of T128 has always been puzzling, but the recent decipherment by David Stuart as /TI'/ for “mouth, lip, etc.”, has cleared the way for the reinterpretation

¹⁶ This circumstance also decreases the statistical value of examples with a prefixed ergative pronoun, since both glyphs rarely take it when conflated.

¹⁷ This is true for most G-Glyphs. However, G1 never occurs conflated with Glyph F, and it is also one of the G-Glyphs standing most often with Glyph F. Only in two Early Classic examples (on a step from Ante Structure, Copán and on the “Hombre de Tikal”) and an isolated stucco glyph from PAL T. 18, Glyph F is not present. Whether this is only a calligraphic restriction or if it has a deeper meaning cannot be determined. In addition, G6 never conflates with Glyph F, though only two examples are represented. As Table 1 also shows, some G glyphs are less often combined with Glyph F than others.

tion of Glyph F. Looking into dictionaries, one sees that constructions with the corresponding word for *tí'* form deictic references, a common practice in Maya languages with parts of the human body. As we will see, the Tzotzil word *titih*, obviously derived from the corresponding noun *tí'il* and meaning "become untied, open (corn tassel)" (Laughlin 1975: 336, 337) is of special importance. Deducing from this circumstance, I believe T128 here also forms some sort of spatial reference by metaphorical means, with the appropriate G-Glyph being the outside of the **/HUN(-na)(-li/-la)/** compound. The identification of this unit and a further examination at the use of T128 within Glyph F helps to clarify this.

The so-called "duplicated" F-Glyph (Figure 12) is the key for this. As Schele (1990: 2) already noted, T609b and other allographs may substitute for T128 as phonetic surrogates. I will bring evidence that this pattern forms instead a semantic substitution due to the virtually pervasive absence of T128, and the Work by Grube (Schele 1991a: 40) which show that T609b and the related signs can be read as **/HUN/**. What is possessed is the second part of this special Glyph F, namely the second **/HUN(-na)(-li/-la)/** compound which obviously refers to the Jester God as a fertility manifestation of God K, whose name as *hu'nal* was identified during the 1990s. The frequent use of a possessive *-l'* suffix indicates an element "of an underlying system" (Houston, Robertson and Stuart 2001: 11) which means that the Jester God was considered as an integral part of the whole expression (Gronemeyer 2003).

The association of *K'awiil* with the growth of plants and especially the maize plant is widely accepted (cf. Taube 1985: 180; 1992: 48, 78). A good example is the iconography of the Cross Group in Palenque where various maize elements merge with the God K figures¹⁸ held by *K'inich Janaab Pakal*. In the same manner, elements of the Jester God may be combined with God E (Taube 1985: Figure 1e, g). There are even some examples (e.g. BPK St. 1, Taube 1991: Figure 19d) in which a God K head, without the cranial axe, emerges out of the foliation of the Maize God's head. The association of the Jester God and his Formative counterpart with maize and aspects of fertility can also be seen in Olmec iconography. Many authors have contributed to this topic, Fields (1991: 171) gives one of the more recent synopses, "The Maya Jester God clearly arose from an Olmec iconography complex, identified here with maize vegetation", and she adds (Fields 1991: 167) that the tripartite elements are the "central maize stalk, the maize ear and flanking leaves ...". With this result it must be clarified what the first **/HUN(-na)/** compound means.

Seeking other records of the main signs of Glyph F, the most prominent epigraphic complex is the accession phrase with the flat hand T713a, holding T60a, T665, T740:23 or T1030o (Schele 1982: 372). This compound is often prefixed by a T58 **/SAK/**, which is believed to express the action of "tying the (white) headband" (Schele 1991a: 40). Voß (pers. communication, 2002) has suggested a different reading and interpretation of T713a that also sheds more light on the true nature of Glyph F. The flat hand was designated the phonetic value **/K'AL/** for "closing" by MacLeod during the Texas Workshop 1997 due to a purely syllabic rendering of **/k'a-la-ja/** in Chichén Itzá. Looking into the adjoining iconography at Palenque, especially in the Cross Group, where accession is always written with this sign, it is never shown that a headband is tied to a head. The only action appearing is the presentation of a *K'awiil* effigy within some kind of bundle. Voß therefore proposes a

¹⁸ Without going into too much detail, which cannot be discussed here, one can recognize that due to the different appearances of the God K effigies different aspects of *K'awiil* are represented.

reading of *k'aj* for the action of presentation or displaying. The glyphic evidence, of which some examples are given, supports this reading proposal, since this sign shows a very unusual inflection. On PAL TFC, M12 it is written /**u-K'AJ-a[j]**/, suffixed by T12 as the usual sign for the agentive. A passive cannot be considered, because the ergative occurs, and T12 never replaces the usual T181 passive thematic suffix, so we likely have a phonetic complement. On PAL PT, U4 it is written /**K'AJ-la-ja**/. I don't believe the syllable /**la**/ functions as a phonetic complement and the /**ja**/ as a passive marker but rather to form a positional verb. This is further confirmed by /**K'AJ-wa-ni**/ on PAL TS, P7 which shows the Ch'olan way of suffixing a positional verb (c.f. Bricker 1986: 162). In both cases the ergative is missing. On the recently discovered throne from PAL T. XXI, F5, T713a is affixed by the ergative /**u**/ and the transitive marker /**wa**/. Regarding the syllabic writing in Chichén Itzá, I would also argue for a positional verb, with the root-final spirant omitted, a practice not unusual in Maya writing. Other examples show the flat hand with its object, the /**SAK-HUN**/, but without any other affixes. I agree with Voß that the verb root is polyvalent.

The semantics seem far more precise concerning the /**SAK-HUN**/ compound, the object displayed by the Palenque king *K'inich Kan Bahlam* on the tablets of the Cross Group. Rather than denoting the royal headband, displaying a Jester God also known from the iconography it is apparently more a *K'awiil* effigy within a bundle. It refers more likely to in what an object is being displayed or wrapped out of or even designating the whole bundle itself. Bricker (1986: 152) gives an ethnographic parallel from highland Chiapas, where insignia of rank are tied up in cloth bags by the departing official and passed over to the new one (see also the discussion of T617 with G5)¹⁹. The Yucatecan lexical evidence gives *sak hu'un* for "papel blanco" (Barrera Vásquez 1995: 709) with the "paper" referring to the bark of the *Ficus cotinifolia* (Barrera Vásquez 1995: 246). In Ch'orti', *sak' hun* means "rough inner bark (of trees), crepe paper" (Wisdom 1950: 627), with the glottal stop being optional forming the meaning "rough" as well as "white". Deducing from this, I also think that the bundle in the iconography of the Cross Group is made out of a vegetative material, probably the wrapping leaves from a maize ear having a rough surface and a bright color. This can also be stated for the first part of the "duplicated" F-Glyph. And it is surely no coincidence that on TLA St. B the first part of Glyph F is written with T609b and the second with T1030o, considering the preserved ideographic content of Maya hieroglyphic writing. Best proof for this piece of the puzzle is the F-Glyph from PNG St. 10, A6 Left (Figure 13b), which demonstrates that even the whole bundle, with the enclosed *K'awiil* or Jester God imagery, can be entitled as a *sak hu'n*, since a Glyph F superfixed with T128 normally refers to the Jester God rather than the wrapping. This may also be an explanation for the frequent use of T60a within the collocations of Glyph F. Also, the fertility aspect of the Jester God is strengthened by an example from the Copán HS in date 24, where the *hu'nal* is written with a full figure form of T1000v.

The semantic field of T128 now contributes further confirmation. As stated above, /**u-TI**/ forms a spatial reference with something being at the edge or the outside of the following *hu'n*, which is the second constituent of the "duplicated" F-Glyph. This

¹⁹ This idea is very interesting concerning the use of the model of van Gennep ([1909] 1981). It is plain that the regalia have their own *rite de passage*. That they are wrapped into bundles, which have a protective quality, demonstrates that the second stage, the liminal period, is being depicted, in many other cultures also considered as hazardous.

supposition is strengthened by the Tzotzil word *titih* for the opening of the wrapping leaves in order to display what lays inside, namely the aspect of God K, for which we have iconographic proof with the Jester God images emerging out of the foliation of God E (cf. BPK St. 1). As it has been shown by Taube (1992: 48), God K takes aspects of God E, and vice versa. So, the T128 describes in the context of Glyph F that the appropriate G-God represents the outside or a protecting coat, and that the main sign of Glyph F, the Jester God, is there included.

In the case of the few "duplicated" F-Glyphs written with T128, one comes to the result that it is stated that Gx is "the outside of the wrapping of the *hu'nal*" and fits the other observations made above even though a third person ergative is missing, surely a result of the formulaic nature of name phrases. This again confirms the idea of the *sak hu'n* where God K is included into the wrapping leaves of the corn plant, and, as the example from PNG St. 10 shows, that the whole bundle can be named with this term.

Now what does it all mean? As it can be seen from the ethnographic records of Thompson (1930: 48f.), it is believed that some supernatural power of fertility is inherent in maize, beginning with the seeds that make new plants grow and the harvest possible, and which is nowadays called the *Santo Ixim*. Obviously, this idea is very old and traces back far into Pre-Columbian times²⁰. It seems now clear that this concept of a "maize spirit" has its Classic counterpart in the *hu'nal*, the Jester God, expressed by Glyph F. The inherent vitality expressed by T128, or the first part of the "duplicated" F-Glyphs, together with the use of Glyph G indicates the developmental stage of this power at the moment. Since the G-Series has been identified as a sequence of different manifestations of the Maize God, he is the patron and the guardian of the *hu'nal*, and this shows once more the close relationship between God E and God K.

Conclusions

As I have shown, the cycle of the nine G-Glyphs together with Glyph F is a maize-related cycle connected with aspects of fertility rather than denominating "Lords of the Night" as known from Central Mexico. As it was also shown, the concept of different stages in the evolution of a maize plant is a wide-spread phenomenon. But by expressing the many possibilities, one can see that there are still many unanswered questions, and therefore this article must remain a proposal, although I do believe the general concept of the nature of Glyphs G and F and their connection is beyond doubt.

The question why this cycle was placed so prominent after or within the calendrical information has to remain unanswered at this point. Since Glyphs G and F almost always follow the Tzolk'in, it may be an attributional specifier for the quality of the recorded day. An augural function is also possible. Close ties by arithmetical meanings to the count of days can be seen by several occasions. The G-Series derives its origin in antiquity. Traces of it can be seen as far back as the Pre-Classic, and since then the permutation with the Initial Series dates was always the same²¹. The importance of the cycle and its probable connection with the day name and its coefficient may be seen in the artificial and manipulatory alterations in the count of Glyph G, but

²⁰ Cf. the comment of Andrés Xiloj in Tedlock (1985: 293f., Note 331).

²¹ As it has been recognized by several authors (cf. Riese 1988: 69), the Lunar Series was used by the Lowland Maya in different uncoordinated, regional calculations before the employment of a system of uniformity.

what should have been amplified here with this remains a subject for further investigation.

A final remark should point out the importance of the proposal for T60 and its allographs for the recent discussion of the *aj k'uhun* title and the new idea of "one who keeps, guards' precious or sacred goods" (Jackson and Stuart 2001: 224). In my opinion, the *aj k'uhun* cared for the bundle with the royal insignia (like the one from the Cross Group) to be passed over during the succession rite.

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References cited

Andrews, E. Wyllys

1936 Notes on Glyphs G of the Maya Inscriptions. *Maya Research* 3: 306-308.

1967 The Maya Supplementary Series. In *The Civilizations of Ancient America*, edited by Sol Tax, pp. 123-141. Selected Papers of the XXIXth International Congress of Americanists. Cooper Square Publishers, New York.

Ara, Fray Domingo de

1986 *Vocabulario de lengua tzeldal según el orden de Copanabastla*, edited by Mario H. Ruz. Universidad Nacional Autónoma de México, Mexico City.

Aulie, Wilbur H., and Evelyn W. de Aulie

1978 *Diccionario Ch'ol-Español, Español-Ch'ol*. *Vocabularios Indígenas*, 21. Instituto Lingüístico de Verano, Mexico City.

Barrera Vásquez, Alfredo, ed.

1993 *Diccionario Maya Cordemex, Maya-Español, Español-Maya*. 3rd edition. Editorial Porrúa, Mexico City.

Barthel, Thomas

1952 Der Morgensternkult in den Darstellungen der Dresdener Mayahandschrift. *Ethnos* 17: 73-112.

Beetz, Carl P., and Linton Satterthwaite

1981 *The Monuments and Inscriptions of Caracol, Belize*. University Museum Monographs 45. University of Pennsylvania, Philadelphia.

Boot, Erik

2002 *A Preliminary Classic Maya-English / English-Classic Maya Vocabulary of Hieroglyphic Readings*. Leiden University, Leiden.

Bricker, Victoria R.

1986 *A Grammar of Mayan Hieroglyphs*. MARI Publication, Number 56. Middle American Research Institute, New Orleans.

Ciudad Real, Fray Antonio de

1995 Calepino de Motul. *Diccionario Maya-Español*, edited by Ramón Arzápalo Marín. 3 vols. Universidad Nacional Autónoma de México, Mexico City.

Fields, Virginia M.

1991 The Iconographic Heritage of the Maya Jester God. In *Sixth Palenque Round Table. Palenque Round Table Series, Volume 8*, edited by Merle G. Robertson, pp. 167-174. University of Oklahoma Press, Norman.

Frumker, Bruce

1992 Curl Snout and the 4th Lord of the Night. *U Mut Maya IV*, edited by Tom and Carolyn Jones, pp. 37-39. Arcata, California.

1993 Wuk Ah, the Fourth Lord of the Night. *Texas Notes on Precolumbian Art, Writing, and Culture*, No. 51.

1999 Nights Errant: A Look at Wayward Lords of the Night. (*Errantes de la noche: una mirada a los caprichosos Señores de la Noche*). Research Report on Ancient Maya Writing, Number 43. Center for Maya Research, Washington D.C.

Graham, Ian, with Eric von Euw, and Peter Mathews

1975- *Corpus of Maya Hieroglyphic Inscriptions*. 8 vols. Peabody Museum, Cambridge, MA

Gronemeyer, Sven

2003 Beobachtungen zur possessiven Morphologie von Glyphe F. Wayeb Notes, No. 1. Electronic document, <http://www.wayeb.org>, accessed July 28, 2003.

Grube, Nikolai

1990 Die Errichtung von Stelen: Entzifferung einer Verbhieroglyphe auf Monumenten der klassischen Mayakultur. In *Circumpacifica. Festschrift für Thomas S. Barthel*, edited by Bruno Illius, and Matthias Laubscher, pp. 189-215. Peter Lang, Frankfurt a. M.

2002a Onomástica de los gobernantes Mayas. In *La organización social entre los mayas prehispánicos, coloniales y modernos*, vol. 2, edited by Vera Tiesler Blos, Rafael Cobos, and Merle G. Robertson, pp. 321-354. Memoria de la Tercera Mesa Redonda de Palenque. 2 vols. CONACULTA / INAH, Mexico City.

2002b The Orthographic Distinction between Velar and Glottal Spirants in Maya Hieroglyphic Writing. Manuscript in possession of the author. Austin, University of Texas.

Grube, Nikolai, and Barbara MacLeod

1990 The Wing that Doesn't Fly: Problems and Possibilities Concerning the Reading of the "Wing" Sign. *U Mut Maya III*, edited by Tom and Carolyn Jones, pp. 167-177. Arcata, California.

Grube, Nikolai, with Barbara MacLeod, and Phil Wanyerka

1999 A Commentary on the Hieroglyphic Inscriptions of Nim Li Punit, Belize (*Un Comentario Sobre los Textos Jeroglíficos de Nim Li Punit, Belice*). Research Report on Ancient Maya Writing, Number 41. Center for Maya Research, Washington D.C.

Grube, Nikolai, and Linda Schele

1991 Tzuk in Classic Maya Inscriptions. *Texas Notes on Precolumbian Art, Writing, and Culture*, No. 14.

Houston, Stephen, John Robertson, and David Stuart

2001 Quality and Quantity in Glyphic Nouns and Adjectives (*Calidad y cantidad en sustantivos y adjetivos glíficos*). Research Report on Ancient Maya Writing, Number 47. Center for Maya Research, Washington D.C.

- Houston, Stephen, David Stuart, and John Robertson
 1998 Disharmony in Maya Hieroglyphic Writing: Linguistic Change and Continuity in Classic Society. In *Anatomía de una civilización: Aproximaciones interdisciplinarias a la cultura maya*, edited by Andrés Ciudad Ruiz et. al., pp. 275-296. Sociedad Española de Estudios Mayas, Madrid.
- Jackson, Sarah, and David Stuart
 2001 The Aj K'uhun Title. Deciphering a Classic Maya term of rank. *Ancient Mesoamerica* 12(2): 217-228.
- Jones, Christopher, and Linton Satterthwaite
 1982 The Monuments and Inscriptions of Tikal: The Carved Monuments. Tikal Report, 33A. University Museum Monograph, Number 44. University of Pennsylvania, Philadelphia.
- Jones, Tom
 1992 Two-Armed Sky and the G-Glyph of Quirigua Stela E. U Mut Maya IV, edited by Tom and Carolyn Jones, pp. 41-47. Arcata, California.
- Josserand, J. Kathryn, and Nicholas A. Hopkins
 1988 Chol (Mayan) Dictionary Database, Part III. Chol Dictionary Database, Fascicle 10: Mayan Vocabulary Database; Fascicle 11: Monosyllable Dictionary Database. Final Performance Report for the National Endowment for the Humanities.
- Kaufman, Terrence, and William M. Norman
 1984 An outline of proto-Cholan phonology, morphology, and vocabulary. In *Phoneticism in Mayan Hieroglyphic Writing*, edited by John S. Justeson, and Lyle Campbell, pp. 77-166. Institute for Mesoamerican Studies, No. 9. State University of New York, Albany.
- Kelley, David H.
 1972 The Nine Lords of the Night. In *Studies in the Archaeology of Mexico and Guatemala*, edited by John A. Graham, pp. 53-68. Contributions of the University of California Archaeological Research Facility, No. 16. University of California, Berkeley.
- Laughlin, Robert M.
 1975 The Great Tzotzil Dictionary of Santo Lorenzo Zinacantán. *Smithsonian Contributions to Anthropology*, Number 19. Smithsonian Institution Press, Washington D.C.
 1988 The Great Tzotzil Dictionary of Santo Domingo Zinacantán. *Smithsonian Contributions to Anthropology*, Number 31. Smithsonian Institution Press, Washington D.C.
- Linden, John H.
 1996 The Diety Head Variants of Glyph C. In *Eighth Palenque Round Table*, edited by Merle G. Robertson, pp. 343-356. Palenque Round Table Series, Volume 10. Pre-Columbian Art Research Institute, San Francisco.
- Looper, Matthew G.
 1993 Observations on the Morphology of Sprouts in Olmec Art. *Texas Notes on Precolumbian Art, Writing, and Culture*, No. 58.
- Lounsbury, Floyd G.
 1984 Glyphic Substitutions: Homophonic and Synonymic. In *Phoneticism in Mayan Hieroglyphic Writing*, edited by John S. Justeson, and Lyle Campbell, pp. 167-184. Institute for Mesoamerican Studies, No. 9. State University of New York, Albany.

- Martin, Simon, and Nikolai Grube
 2000 *Chronicles of the Maya Kings and Queens. Deciphering the Dynasties of the Ancient Maya.* Thames and Hudson, London.
- Maudslay, Alfred Percival
 1974 *Biologia Centrali-Americana: Archaeology*, edited by Francis Robicsek. Milpatron Publishing Corp., New York.
- Mayer, Karl Herbert
 1978-80 *Maya Monuments: Sculptures of Unknown Provenance*, Vols. 1-2. Acoma Books, Ramona.
 1978-80 *Maya Monuments: Sculptures of Unknown Provenance*, Vols. 3-6. Verlag von Flemming, Berlin.
 1995 *Maya Monuments: Sculptures of Unknown Provenance*, Vol. 7. Academic Publishers, Graz.
- Orejel, Jorge L.
 1996 A Collocation Denoting a 'Substitute' Relationship in Classic Maya Inscriptions. In *Eighth Palenque Round Table*, edited by Merle G. Robertson, pp. 63-77. Palenque Round Table Series, Volume 10. Pre-Columbian Art Research Institute, San Francisco.
- Quenon, Michel, and Geneviève Le Fort
 1997 *Rebirth and resurrection in Maize God iconography.* In *The Maya Vase Book, Volume 5*, edited by Barbara and Justin Kerr, pp. 884-902. Kerr Associates, New York.
- Riese, Berthold
 1984 *Hel Hieroglyphs.* In *Phoneticism in Mayan Hieroglyphic Writing*, edited by John S. Justeson, and Lyle Campbell, pp. 263-286. Institute for Mesoamerican Studies, No. 9. State University of New York, Albany.
 1988 *Epigraphy of the Southeast Zone in Relation to Other Parts of the Maya Realm.* In *The Southeast Classic Maya Zone*, edited by Elizabeth Boone, and Gordon R. Willey, pp. 67-94. Dumbarton Oaks Research Library and Collection, Washington D.C..
- Ringle, William, and Thomas C. Smith-Stark
 1996 *A Concordance to the Inscriptions of Palenque, Chiapas, Mexico.* Middle American Research Institute, Number 62. Middle American Research Institute, New Orleans.
- Robertson, Merle G.
 1983 *The Sculpture of Palenque.* 4 vols. Princeton University Press, Princeton.
- Schele, Linda
 1982 *Maya Glyphs, the verbs.* University of Texas, Austin.
 1990 "End of" Expressions at Copán and Palenque. *Copán Notes*, No. 69.
 1991a *Notebook for the XVth Maya Hieroglyphic Workshop at Texas.* University of Texas, Austin.
 1991b *Further Adventures with T128 ch'a.* *Texas Notes on Precolumbian Art, Writing, and Culture*, No. 9.
- Schele, Linda, Peter Mathews, and Floyd Lounsbury
 1990 *The Nal Suffix at Palenque and Elsewhere.* *Texas Notes on Precolumbian Art, Writing and Culture*, No. 6.

Schele, Linda, and Jeffrey H. Miller

1983 *The Mirror, the Rabbit, and the Bundle: "Accession" Expressions from the Classic Maya Inscription*. Studies in Pre-Columbian Art & Architecture, Number 25. Dumbarton Oaks Research Library and Collection, 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.

Schele, Linda, and Elizabeth Newsome

1991 *Taking the Headband at Copán*. Copán Note, No. 49.

Schultze Jena, Leonard

1944 *Popol Vuh. Das Heilige Buch der Quiché-Indianer von Guatemala. Quellenwerke zur alten Geschichte Amerikas, 2*. Verlag von W. Kohlhammer, Stuttgart.

Stuart, David

1987 *Ten Phonetic Syllables*. Research Report on Ancient Maya Writing, Number 14. Center for Maya Research, Washington D.C..

1989 *Kinship Terms in Mayan Inscriptions*. Paper presented at "The Language of Maya Hieroglyphs", a conference held at the University of Santa Barbara.

Taube, Karl A.

1985 *The Classic Maya Maize God: A Reappraisal*. In *Fifth Palenque Round Table*, edited by Merle G. Robertson, pp. 171-181. Palenque Round Table Series, Volume 7. Pre-Columbian Art Research Institute, San Francisco.

1989 *The Maize Tamale in Classic Maya Diet, Epigraphy, and Art*. *American Antiquity* 54(1): 31-51.

1992 *The Major Gods of Ancient Yucatan*. Studies in Pre-Columbian Art & Architecture, Number 32. Dumbarton Oaks Research Library and Collection, Washington D.C.

Tedlock, Dennis

1985 *Popol Vuh: The definitive edition of the Mayan Book of the Dawn of Life and the Glories of Gods and Kings*. Simon and Schuster, New York.

Teran, Silvia, and Christian Rasmussen

1994 *La Milpa de los Mayas. La Agricultura de los Mayas Prehispánicos y Actuales en el Noreste de Yucatán*. N.p., Mérida.

Thompson, J. Eric S.

1929 *Maya Chronology: Glyph G of the Lunar Series*. *American Anthropologist* 31: 223-231.

1930 *Ethnology of the Mayas of Southern and Central British Honduras*. Field Museum of Natural History, Number 274. Field Museum of Natural History, Chicago.

1950 *Maya Hieroglyphic Writing: An Introduction*. Carnegie Institution of Washington, Number 589. Carnegie Institution of Washington, Washington D.C.

1962 *A Catalog of Maya Hieroglyphs*. University of Oklahoma Press, Norman.

van Gennep, Arnold

1981 [1909] *Les rites de passage*. Picard, Paris.

Wisdom, Charles

1950 *Materials on the Chorti Language*. Microfilm Collection of Manuscripts on Middle American Cultural Anthropology 5, Item 38. University of Chicago Library, Chicago.

Zender, Marc U.

1999 Diacritical Marks and Underspelling in the Classic Maya Script: Implications for Decipherment. Master Thesis, Department of Archaeology, University of Calgary.