Sven Gronemeyer[*]

Evoking the dualism of sign classes:
A critique on the existence of morphosyllabic signs
in Maya hieroglyphic writing[1]

Abstract: This article pursues a critical review of the so-called morphosyllabic signs proposed by Houston, Robertson & Stuart in 2001. These are supposed to be syllabic signs carrying meaning to spell grammatical morphemes. I would like to argue from a phonological and grammatological perspective why I believe that morphosyllables cannot work as proposed. By comparing the spelling principles of preposed morphemes with suffixes, I expose a pattern that points to a simple syllabic use in these cases. There are indications that sound integrations at morpheme boundaries are realised by spelling alterations and that the recipient's knowledge of the written language was required to mentally anticipate under-spelled phonemes.
Keywords: Linguistics; Morphosyllables; Mesoamerica; Classic Maya.

Resumen: En este artículo se lleva a cabo una revisión crítica de los llamados signos morfosilábicos propuestos por Houston, Robertson & Stuart en 2001. Se supone que estos son signos silábicos que expresan morfemas gramaticales. Voy a argumentar desde un punto de vista fonológico y gramatológico, explicando por qué creo que las morfosílabas no pueden funcionar de la manera propuesta. Al comparar los principios de la ortografía de morfemas prefijados con los sufijos, expongo un modelo que propone un uso sencillo silábico en estos casos. Hay indicios de que la integración de sonido en los límites de morfemas se realiza por las alteraciones de ortografía y que el destinatario de la lengua escrita estaba obligado a anticipar mentalmente los fonemas omitidos.
Palabras clave: Lingüística; Morfosílabas; Mesoamérica; Maya; Clásico.

1. Introduction

In an important article on the qualitative and quantitative abstraction of nouns and adjectives in the Classic Mayan language,[2] Stephen Houston, John Robertson and David Stuart (2001) elaborated the hypothesis of the existence of morphosyllabic signs or morphosyllables (2001: 14-47). In a series of subsequent papers, the authors have further detailed their understanding of the principles of this functional sign class (Houston 2004; Robertson, Houston & Stuart 2004; Robertson et al. 2007; Stuart 2005a). Other epigraphers have easily adapted this newly defined class of signs in their work and operate with morphosyllables to denote inflections of Classic Mayan word stems, such as Coe & van Stone (2001), Jackson & Stuart (2001: 223), Mora-Marín (2003a), and Zender (2005: 10), to name only a few.

Acknowledged for many decades, Maya signs can be categorised by one of two classes. The logograph generally follows a /CVC/ pattern and represents a lexical stem, while the syllabic sign features a /CV/ pattern (Knorozov 1952). With the morphosyllable, Houston, Robertson & Stuart (2001: 14) have added a third functional class of signs that share certain properties with both other classes.

According to the authors, four basic principles can be summarised (2001: 15):

a) They have a functional duality of being logographic and syllabic at the same time.
b) Although logographic, they phonemically refer to morphemes rather than semantically to words.
c) They underspecify the phonological content of a morpheme, ultimately resulting in an inversion of the syllabic structure /CV/ into /VC/.
d) They abrogate the principle of vowel disharmony used to indicate complex vowels (Houston, Stuart & Robertson 1998; Lacadena & Wichmann 2004; Robertson et al. 2007).

The idea that specific Maya syllabographs can have an inverted reading order with a /VC/ pattern has been suggested by a number of epigraphers and linguists in the past. The morphosyllabic proposal by Houston, Robertson & Stuart (2001) was thus the most elaborate consolidation of these considerations. Possibly the earliest thought on this originates from Yuri Knorozov (1955: 9, 55). Later, John Justeson (1984: 367) stated that a /VC/ logogram could be expressed with a corresponding

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2   The term "Classic Mayan language" will be used throughout this study as a *terminus technicus* to describe the language encoded by Maya hieroglyphic writing. Houston, Robertson & Stuart (2000) have introduced the term *Classic Ch'olti'an* to characterise it as an ancestral form within the Eastern Ch'olan branch (2000: 327), however vernacular influences, such as from the Yukatekan and Tzeltalan branches, exist in the inscriptions (Lacadena & Wichmann 2000). Although the affiliation to the Ch'olan branch in general is beyond doubt, the term "Classic Mayan language" will be preferred here, as it acknowledges neutrally the permeability of the written standard language.

/CV/ sign and vice versa. Victoria Bricker (1986: 128) also considered sound inversion of the /**wa**/ syllable for the declarative mood of transitive verbs while maintaining the functional properties of a syllabograph. A broader sketch of morphosyllables was laid out by Stuart, Houston & Robertson (1999), before being intellectually pinpointed in the paper from 2001 for the first time.

As the continuing circulation of the basic proposal from 2001 and its elaboration in subsequent studies has provided a number of use cases, the present article will take a critical review of these examples. As these cases cover a broader variety of morphological environments and lexical classes than in the original study, a greater pool of applicable examples can come under scrutiny. Different arguments criticising the morphosyllabic model have already been expressed in a number of studies, such as Boot (2000; 2002), Mora-Marín (2003b; 2004), and Zender (2004). A lot of ideas expressed in this article have been developed independently (Wichmann 2006: 286-287; Wald 2007: 153-176), others have been fathomed out in parallel and elaborated further.

2. A brief summary of morphosyllables

Houston, Robertson & Stuart (2001: 16) distinguish between regular and irregular morphosyllables. These two groups feature a different phonology, according to principle c). Regular forms, such as /**WA**/ and /**YI**/, are considered to overspecify the nature of the spoken morpheme, as they retain the /CV/ structure of syllabic signs. They denote vowel-harmonic morphemes that reflect the root vowel of the lexeme they are attached to. Thus, their vocalisation is not restricted to a specific set of possibilities, but directly depends on the vocalisation of the root. In contrast, irregular forms, such as /**IL**/ and /**IB**/, are considered to underspecify the spoken morpheme, as they invert their structure into /VC/. These forms feature an unpredictable vowel that could either be /a, e, i, o, u/.[3] A special case is the morphosyllable /**AJ**/ used for the thematic marker of the passive voice (Lacadena 2004), which invariably is -*aj*.

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3   Houston, Robertson & Stuart (2001: 16) confess that "attestations in modern languages offer suggestive help", while quoting examples of subsets of a specific functional morpheme with subtle differences in the meaning. The authors tend to see the vowel /i/ as a preferred candidate to be reconstructed at least for the instrumental suffix (Houston, Robertson & Stuart 2001: 17), as a majority of lexical and grammatical entries suggest. However, patterns like the interplay between high and low vowels in roots and suffixes have not been considered in detail. Neither has the possible integration of the final vowel of the lexeme (in a /CV-CV/ or /CVC-CV/ spelling) into the attached suffix, as in /CV_1-CV_2+CV_3/ > CV_1C-V_2C. This, however, would contradict the authors' line of evidence for the postulation of morphosyllables (Houston, Robertson & Stuart 2001: 17-18, fn. 7). Arguments for the phonemic integration at morpheme boundaries are given below.

Morphosyllable (Transcription)	Suffix (Transliteration)	Function	Source: page
A-	*-a(w)*	second-person singular ergative	c: 50
-AJ	*-aj*	passive thematic marker	a: 16
-AJ	*-aj*	absolutive	a: 46
-AL?	*-al*	nominaliser	a: 36
-EL	*-el*	part-whole relationships	a: 31
-IB'	*-Vb'*	instrumental	a: 16
-IJ	*-ij*	nominalised antipassives	b: 284
-IK	*-ik*	honorific address	a: 52
-IL	*-Vl*	abstractive -ness [e.g. good-ness]	a: 16
IN-	*in-*	first-person singular ergative	c: 48
-IS	*-Vs*	nominaliser	a: 16
-ITZ	*-atz, -itz*	remains unexplained	d: 55
KA-	*ka-*	first-person plural ergative	c: 48
-OOB'	*-oob'*	plural suffix	c: 54
U-	*u-*	third-person singular ergative	c: 46
-WA	*-V₁w*	CVC transitives, declarative mood	a: 16
-YI	*-V₁y*	CVC medio-passive	a: 16

Table 1. A summary of all morphosyllables postulated so far in the literature. Compiled from a) Houston, Robertson & Stuart (2001); b) Robertson, Houston & Stuart (2004); c) Stuart (2005a) and d) Robertson et al. (2007). The orthography from the original publications is retained.

3. Methodological and conceptual problems

To re-emphasise principle b) from above, the sign class of morphosyllables ought to exclusively denote grammatical suffixes. In contrast, the traditional approach is reliant on the formation of phonemic chains using syllabic signs that can denote both lexical and grammatical morphemes. Eventually, the reconstruction of sounds is needed in cases of under-representation at the edge of morphemic boundaries. With the postulation of the morphosyllables as a logographic sibling, both free and bound morphemes receive equal treatment, transposing a lexical-grammatical function[4] to a phonemical level. In this context, it is also worth noting that morphosyl-

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4   As is clear from the original study, the terminology is influenced by sinology, where John DeFrancis (1989: 115-116) uses the same labelling for what the Chinese themselves refer to as the 形聲 *xíngshēng*, "form and sound". This sign class consists of one grapheme that provides the sound plus a radical that modifies the semantics of the phonemic sign. The radical thus acts as a semantic determinative. Houston, Robertson & Stuart (2001: 14) think that the Chinese model differs notably, because they apply the definition given above, although their

lables are also intended to denote morphemes instead of indicating them. As will be demonstrated in this article, this circumstance provokes a number of problems.

One of the obstacles in assessing the graphotactical and functional principles of morphosyllables is their varying definition in the literature. Agreeably, the reading of Maya hieroglyphs "requires a transcription into a known phonemic system" (Robertson et al. 2007: 1). As such, the morphosyllables originally seem to be thought of as a tool for the dedicated notion of graphemes that are used to some how indicate or denote grammatical morphemes. The syllabic and logographic signs for lexemes are in contrast. As the original study explains (Houston, Robertson & Stuart 2001: 16), the regular /CV/ forms shall be for the transcripttion of -V_1C suffixes, whereas the inversion to /VC/ shall just be "a convention [...] found useful in distinguishing irregular from regular morphosyllables".

Morphosyllables were originally considered to follow behind a logograph (Houston, Robertson & Stuart 2001: 22). However, surprisingly the authors state (2001: 23) that "if they occur initially, the reading generally changes to a CV value (e.g., **-IB'** > **b'i**; **-AJ** > **ja**)", as morphosyllables should represent an earlier stage of development that influenced the CV syllables (Houston, Robertson & Stuart 2001: 19). If the inversion of the sound order were only a functional convention, a reading inversion together with a change of the functional class (i.e. into a syllabic sign) would hardly be necessary.[5] Again, the principle of inversion is evoked in further studies, as "with endings like **-ja** in **tu-pa-ja** the CV morphosyllable is 'pronounced backwards', as -*aj*" (Robertson et al. 2007: 4). As it is differentiated between two types of spellings, the "silent vowel" and "morphosyllabic reading[s]" (Robertson et al. 2007: 4), it becomes clear that the morphosyllables are not considered as a *terminus technicus* for signs graphemically

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morphosyllables contain meaning (2001: 18, 20). The meaning (i.e. functional use) is not specified by a morphosyllable itself, as detailed below in the discussion about homophony. An unambiguous meaning for each morphosyllable would require a semantic determinative in the sense of a Chinese radical that was never used by the Maya (cf. Zender 1999: 41-45, 99-100). Furthermore, DeFrancis also considers Chinese characters "morphosyllabic in the sense that they represent at once a single syllable and a single morpheme" (DeFrancis 1989: 116). This definition could also apply to Mayan grammatical morphemes and lexical roots, if one ignores all lexicalised bi-syllabic derivations (e.g. *k'uhul* or *bahlam*). Attributing this definition, which seems fair considering principle b), necessarily results in principle c). As will be demonstrated further below, this principle can be disproved by a couple of arguments inherent to the writing system and disqualifies a simple transposition of the definition from one writing system (Chinese) to a different one (Maya). Last but not least, the equation of a single syllable with a single morpheme is much more tailored to Chinese as an isolating language than the agglutinative Mayan languages.

5 See Marc Zender (2004: 201) for a similar argumentation. He conceives the principle of underspellings or silent vowels at morphemic boundaries as something common, as the reader of Maya inscriptions would have been able to supply the correct vowel by the context.

indicating a certain functional suffix or for a transcription of morphemes, but as a sign class intrinsically bound to the principles of the writing system.

However, the morphosyllables, particularly in their later stage of theoretical evolution, need to be seen as an artificial concept. The sound inversion is a principle which can only be explained by the script background of those using a transcription, as [C] plus [V] are written by two distinct graphemes in the Latin alphabet, but form an indispensable unit in the Maya hieroglyphic writing. In fact, syllables seem to be a most fundamental unit (Blevins 1995) and their segments are phonetically inseparable. For example, the [č] sound is written with the digraph /ch/ in English. Segmenting and inverting its reading order into /hc/ would destroy the relationship between sound and signs. Script is the representation of language; phonemic changes must find their mirroring in writing in a way that is best supported by the nature of the writing system. This prerequisite cannot be fulfilled by the morphosyllables. In this context, it is also worth noting that the ability to segment phonemes is cognitively conditioned and shows a correlation with the writing system used (Søren Wichmann, written communication, 26 Feb. 2009). That is to say that users of an alphabetical script generally feature the highest degree of phonemic manipulations, by altering, adding and deleting sounds from a word or syllable, e.g. in order for a "git" to become "wit" and vice versa. An interesting study of Chinese people (Read et al. 1986) revealed that those capable of only reading traditional characters were not able to detect phonemic segments, whereas those who were also familiar with Pīnyīn could. Therefore, it seems highly uncertain that people that were never used to an alphabetical perception of writing could manipulate their smallest phonemic unit – the syllable – in a way as suggested for the morphosyllables (Wichmann 2006: 286).

Even when considered as a sign with logographic properties (Houston, Robertson & Stuart 2001: 15), for which a polyvalent reading may be true,[6] a sound inversion of the form /VC/ cannot work for a couple of reasons. At first glance, logographs appearing like this in fact begin with a glottal stop as the initial sound, thus forming a regular /CVC/ pattern. Even neglecting this circumstance, this *pro-forma* logographic sign would need to be read fully phonemically in all instances. The regular group of morphosyllables, considered as vowel-harmonic (Houston, Robertson & Stuart 2001: 16), would have their final vowel (as in /**WA**/) as not silent. For the group of irregular morphosyllables (as with /**IB**/), their sound inversion would lead to a fixed vowel for the bound morpheme. And morphosyllables considered with a constant vowel (as with /**EL**/) could potentially show a logographic substitution under the proviso that the word initial glottal stop is over-

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6   As Marc Zender (1999: 56) was able to prove, a polyvalent sign may have more than one logographic reading, but always only one syllabic value.

represented. With the "*k'in*-bowl" sign, a logograph with the reading /**ʔEL**/ exists,[7] which never substitutes for the most common T188 /**le**/ sign (Erik Boot, personal communication, January 2009).

Another consideration, only to be mentioned briefly because of insufficient epigraphic data, concerns morphemic vowel syncopation. David Mora-Marín (2003b: 27, 29) suggests that /**yo-ko-bi-li**/ (PAL T19 Hbh. West, A3) is for *y-ok-b-il < y-ok-(i)b-il*. If the Maya scribes had any real intention of indicating such a phonological mechanism in writing, then a transcription /**yo-ko-IB**'-**IL**/ (Houston, Robertson & Stuart 2001: 22) using morphosyllables would simply not concur with the premises of phonemic and morphemic segmentation[8] of such a syncopated form as in the spoken language.

The artificiality of the postulation of morphosyllabic properties creates further confusion in their application. The already contradictory statement that morphosyllables invert their reading to normal syllabic patterns in initial positions (Houston, Robertson & Stuart 2001: 23) is neglected for the first person ergative pronoun (Stuart 2005a: 48), where the reading /**IN**/ > *in-* is established for the otherwise attested value /**ni**/ for T116. Despite this, it is still under debate which form the first person ergative pronoun has taken in the Classic Mayan language (Wichmann 2002: 17-20). Even more arbitrary becomes the allocation of the morphosyllabic value /**A**/ to T229 (Stuart 2005a: 50). Here, the expression *aw-o[h]l-ø* is considered to contain a morphosyllable for the prevocalic second person ergative, although a phonemic integration of the /**a**/ sign with the following /**wo**/ sign would yield a straightforward rendering of the *aw-* pronoun, as it does in /**a-wi-chi-NAL-la**?/ > *aw-ichnal* (K8008, U1).

The set of problems of morphosyllables in relation to prefixed ergative pronouns will be detailed in the following paragraph. By discussing the orthographic conventions when writing the third person singular ergative, I will disprove the use of morphosyllables for the entire set of ergative pronouns by analogy.

4. The ergative pronoun

Further evolving the idea of morphosyllables as a special sign class for the rendering of grammatical affixes would lead to the universal usage of this class whenever a bound morpheme is to be written. However, the prevocalic third person ergative pronoun *y-* is always realised by a /**yV**/ syllabic sign. The sound value of the vowel depends on the initial sound of the lexeme and is always congruent with it, e.g. /**yo-OTOT-ti**/ > *y-oto:t* (TRT Bx. 1, S3) and /**ya-ATOT-ti**/ > *y-ato:t*

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7 Stephen Houston in 1993 was the first to posit this reading for the sign (cited in Stuart 2005b: 65).

8 Another example (Wichmann 2002: 8) that further supports Mora-Marín's line of argumentation can be transcribed as /**e-ke-li-bi**/ > *[h]ek-l-ib* (Site Q P. 2B, H8). A morphosyllable, even if postulated, would simply overspell the vowel of the participial suffix *-Vl*.

(RAZ Bur. 6).[9] As the Maya writing system lacks purely consonantal signs, the smallest unit to realise is a /CV/ syllable. That the syllabic vowel is not omitted or considered silent but integrated and amalgamated at the morphemic boundary is proven by its congruence. None of the constituting principles of a morphosyllable may work for the prevocalic third person singular ergative.

The preconsonantal third person ergative pronoun *u-* is realised by a stand-alone sign, the "vowel" syllable /**u**/ (in fact /**ʔu**/) and its allographs. The boundary between the prefix and the following lexeme is clearly recognisable by the use of distinct graphemes, e.g. /**u-TOK' u-pa-ka-la**/ > *u-to:k' u-pakal* (YAX Lnt. 45, C6). However, the syllabic signs for /**u**/ are also attributed morphosyllabic properties, turning them to /**U**/ (Stuart 2005a: 46). That this is no later development of the hypothesis of the morphosyllables is proven by the example /**U-ts'a-pa-WA**/ in the original study (Houston, Robertson & Stuart 2001: 16), although the authors declare that morphosyllables appear exclusively as suffixes (2001: 22).

It seems to overcomplicate matters when attributing logographic properties to the /**u**/ sign in equal phonemic surroundings.[10] It is also inconsistent to postulate a morphosyllable for one half of the third person ergative pronouns (preconsonantal) while not doing so for the other (prevocalic) set. This is because the latter case will not function, therefore questioning at the same time the consistency of the morphosyllabic sign class as a whole.

The same line of argumentation would also apply to the other postulations of ergative morphosyllables, as already explained above for the *aw-o[h]l* expression. It is also intriguing to note that there is no theoretical */**AW**/ morphosyllable recognised as an inversion from the /**wa**/ sign in the entire corpus, paralleling the /**ni**/ > /**IN**/ case for the first person (Stuart 2005a: 48). In most instances, an /**a**/ sign and its allographs plus a /**wV**/ sign are used, in a similar way to the third person prevocalic pronoun. Only in a couple of rare cases, the [w] is underspelled in front of a logograph, as in /**a-OL-la**/ > *a[w]-o[h]l* (PAL TI-W, B12) or /**a-AK'AB-li**/ > *a[w]-ak'ab-[i]l* (PAL ORAT, B1). These would certainly be the circumstances requiring a morphosyllable to ensure a full phonetic spelling.

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9   This form with an initial /a/ sound comes from the Early Classic and is thought to reflect an earlier stage of the Classic Mayan language (Houston, Robertson & Stuart 2000: 337).

10   A second applicable usage of a theoretical */**U**/ morphosyllable would be the imperative suffix -V_I (Beliaev & Davletshin 2006: 25), and other vowel signs as well. However, we only have full phonemic spellings as /**pu-lu**/ > *pul-u* (K1398, E1) and /**u-tz'u**/ > *utz'-u* (K1398, G1). In these cases, the reader simply has to know that the final vowel is not silent. The same may apply to the case of intransitive roots which almost invariably end with a /**Ci**/ sign, as in /**hu-li**/ > *hul-i*, eventually spelling the completive status marker (Mora-Marín 2003b: 5).

5. Missing morphosyllabic postulations

The arbitrariness of the morphosyllabic concept that pervades the postulation for the ergative pronouns can also be demonstrated by means of numerous suffixes. As Table 1 shows, only a few cases, mainly for nouns, have been postulated so far. There are only three cases of a verbal suffix: the mediopassive (Houston 1997: 295-296; Houston, Robertson & Stuart 2000: 332-333), the passive and declarative transitives. Eventually, verbal suffixes were out of scope because the authors postulate that nouns and adjectives are never conjugated verbally (Houston, Robertson & Stuart 2001: 2), although we have inchoative examples (Houston, Robertson & Stuart 2001: 39-42) from the inscriptional corpus, e.g. /**WITZ-ja JOL**/ > *witz-[a]j jol* (TRT Mon. 6, H6).[11]

Following on from this, I would like to focus on a number of suffixes that are known from both verbal and non-verbal stems. Morphosyllables have not been postulated for these cases and I would like to evidence that these cases have no epigraphic record that would support the argument in favour of morphosyllables. Again, this raises the question why a special sign class should exist for some grammatical morphemes and not for others.
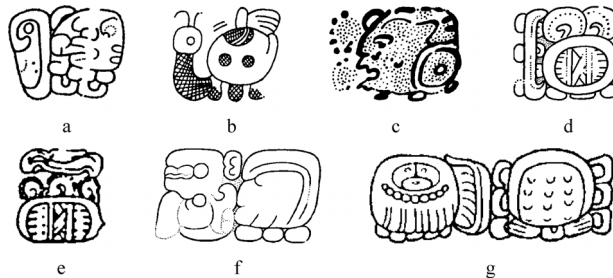
Figure 1. Different spelling for the suffix -*om*. Examples a) to c) represent the agentive use while d) to g) are the prospective participles. a) /**jo-cho-ma K'AK'**/, TNA Mon. 149, M1; b) /**ch'a-ho-ma**/, TRT Mon. 8, B70; c) /**K'AYOM-ma**/, K8008, J1; d) /**u-to-ma**/, TRT Mon. 6, O4; e) /**u-to**/, CPN St. A, E11; f) /**TZUTZ-jo-ma**/, YAX Lnt. 31, K5; g) /**ma-ka-no-ma**/, CPN St. A, G11-H11.

My first case is the suffix –*om*,[12] used to turn a verbal root into an agentive noun and as a prospective participle (Grube 1990: 16-17). These two usages are of

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11 The intransitivation of adjectival stems is also widely attested, as in Ch'orti' *sakah* "be pale, [...], become dawn [...]" (Wisdom 1950: 625) or K'ichee' *zaqar* "whiten" and *zaqir* "become white" (Edmonson 1965: 159)

12 I will not apply any vowel-disharmonic rule to any grammatical morpheme for reasons of simplicity. I acknowledge that suffixes may contain a complex vowel and that it could potentially be explained by any model of disharmony (Houston, Stuart & Robertson 1998; Lacadena & Wichmann 2004; 2005; Robertson et al. 2007) in case of a purely syllabic rendering, but not by the concept of morphosyllables (Houston, Robertson & Stuart 2001: 15, 21).

different meaning and function, although they share the same form.[13] In syllabic spellings, this suffix is almost exclusively realised by the signs /**Co-ma**/,[14] with the consonant being identical to the final sound of the lexeme (Figure 1). A theoretically possible morphosyllable /**ma**/ > */**AM**/ as an irregular form or /**mo**/ > */**OM**/ has no record in the inscriptions (Gronemeyer 2006: 158).

The realisation of the *-om* suffix as solely syllabic is evidenced by three particular spellings. On CPN St. A (Figure 1e) we find a spelling where the final syllable is omitted, thus entailing a reconstruction as *u[h]t-o[m]*. This rare instance precisely reflects the underspelling of weak consonants in final position (Zender 1999: 135-142) and can only be explained by fully syllabic behaviour, whereas a morphosyllable would always have an /m/ sound included. The examples in Figure 1f-g demonstrate the merging of two different morphemes on the graphemic level. The Yaxchilan spelling would read as *tzu<h>tz-j-om*, a syncopated prospective passive form (Stuart 2001: 13; Lacadena 2004: 167).[15] Although a morphosyllable for the passive has been postulated, it does not apply in this case, as the /**jo**/ sign is used to indicate both the thematic passive marker and to spell the beginning of the following suffix. The Copan example further proves the principle of phonemic integration at morphemic boundaries. Here, we can reconstruct *mak-n-om*, where the /**no**/ sign provides the *-n* for an agent focussing antipassive (Lacadena 2000) and the initial vowel of the participle.

A second case study is the first person singular absolutive pronoun *-en* used as the predicate in stative expressions and for the agent of intransitive verbs. Because this pronoun is only very scantily known from the inscriptions, it has been chosen as a counter-example of the morphosyllables. Given that there are only a new known instances, there may have been no necessity for the Maya scribes to develop[16] a theoretical morphosyllable /**ne**/ > */**EN**/ or /**na**/ > */**AN**/ as an irregular form. And in fact, the known examples always[17] encompass the signs /**Ce-na**/, with

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13 There is a possibility that the participle derives from the agentive use. In contrast to *aj-*, the suffix is rather used to express the potential of someone/something to action (Alexander Voß, personal communication, Oct. 2002), eventually in these cases time itself (Gronemeyer 2006: 158).

14 There is also a very late synharmonic spelling /**u-to-mo**/ > *u[h]t-om* on CRC Alt. 13, W3 dating to 10.0.0.0.0 and a number of underspelled /**u-to**/ > *u[h]t-o[m]* examples as on CPN St. A, C11.

15 It is noteworthy that David Stuart (2001) explains this spelling and other passive forms ending in *-aj* in his discussion of the completion verb by means of syllabic signs, although his paper dates some months later than his co-authored study on the morphosyllables.

16 I am following Marc Zender's line of argumentation (Zender 1999: 83) in his discussion of the "vomiting head" sign from the Landa alphabet (Landa 1959: 106).

17 One exception that nevertheless proves the rule is the spelling /**hi-na**/ > *hi:n* for the first person singular independent pronoun. This is considered to preserve an earlier phonological stage unaffected by the [e] < [i] shift of the Ch'olan branch (Hull, Carrasco & Wald 2009: 36), eventually as a syncope from Pre-Greater Tzeltalan **ha'-iin*.

the consonant identical to the final sound of the preceding stem (Figure 2). Basically, the realisation of the -*en* pronoun is similar to the spelling of the -*om* suffix.
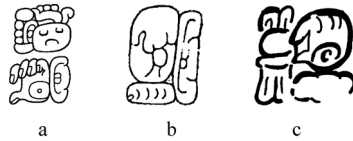
Figure 2. Different spellings for the suffix -*en*. a) /**a-wi-na-ke-na**/, PNG P. 3, G''1-G''2; b) /**hu-le-na**/, PMT P. 2, A2; c) /**che-ke-na**/, K793, E1.

A third case study for critical review is plural markers. The first proposition is used for the plural ending and third person plural absolutive pronoun -*ob*. David Stuart tries to identify three circular elements as a logograph */**OOB'**/ (Stuart, Houston & Robertson 1999: 26; Stuart 2005a: 54), but as this tentative sign is used to spell a morpheme, it shall be considered rather as a morphosyllable, e.g. /**TZAK K'AWIL-*OOB'**/ > *tzak k'awi:l-*oob'* (YAX Lnt. 39, A2-B2). We have a number of instances of the independent pronoun *ha'ob* that likely originates from the base (Hull, Carrasco & Wald 2009: 36) of the demonstrative particle *ha'*, suffixed by the third person plural absolutive pronoun (Figure 3).
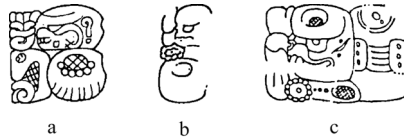
Figure 3. Different spellings for the suffix -*ob* in connection with the particle ha'. a) /**ha-o-ba**/, CPN St. A, G2; b) /**ha-o-ba**/, CLK H.S. Fragment (Stuart, Houston & Robertson 1999: 24); c) /**ha-o-bo**/, CPN T. 11, W. Door, S P., A4.

Generally, the suffix is realised by a disharmonic spelling /**o-ba**/, only the late spelling from Copan Temple 11 (dating to 9.17.0.0.16) is synharmonic /**o-bo**/. There is no theoretical morphosyllable /**bo**/ > */**OB**/ or a regular form /**ba**/ > */**AB**/. I believe that the Maya scribes had no other choice than to write this suffix purely with syllabic signs in a full phonemic spelling. As the word *ha'* ends in a glottal stop, no /**Co**/ sign applies, hence the use of the "vowel" sign /**o**/, or rather /**ʔo**/ matching the final glottal stop of *ha'*. Eventually, the indication of a complex vowel also requires a disharmonic syllabic spelling.

There is a second plural suffix -*tak* (Stuart, Houston & Robertson 1999: 25) existing in the Maya script (Figure 4), first identified by Alfonso Lacadena. As can be seen, it is either written by the "*k'in* tree" sign /**TAK**/, sometimes phonemically complemented by /**ki**/, or by a full syllabic substitution /**ta-ki**/.
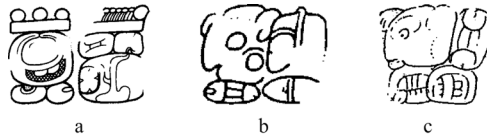
Figure 4. Different spellings for the suffix *-tak* as a plural marker. a) /**8-20-wa a-AJAW-TAK**/, DPL P. 19, F1b-G1a; b) /**ch'o-ko-TAK-ki**/, NAR St. 18, G6; c) /**ch'o-ko-ta-ki**/, OXK BcS. 1 (Stuart, Houston & Robertson 1999: 25).

Although we have here a morpheme to which the principles of a morphosyllable could apply, two arguments condemn its usage. Firstly, the writing patterns clearly indicate that the /**TAK**/ sign behaves as a true logogram: it can be fully substituted by syllables and can have phonetic complements. Secondly, the morphosyllabic approach must restrict itself to suffixes of the /VC/ pattern because of the sound inversion from a syllable, whereas the plural suffix has a /CVC/ pattern.

What is true for the *-tak* plural suffix also applies to the positional suffixes *-wan* and *-laj* (MacLeod 1984: 241-249; Bricker 1986: 160-165). These are exclusively realised by the syllabic spellings /**wa-ni**/ and /**la-ja**/ respectively.[18] No morphosyllables can be postulated because of the /CVC/ structure of these suffixes, furthermore no logographic signs exist that can be used to write these suffixes by */**WAN**/ or */**LAJ**/. Thus, no special signs can be applied to write these morphemes, favouring again a purely phonemic (syllabic) spelling of morphemes. Another instance is the abstraction suffix *-lel*, as in the common expression *ti/ta ajaw-lel*. Here, it becomes even more evident that morphosyllabic signs are *eo ipso* not able to distinguish between suffix functions (see also below). As Marc Zender demonstrated (1999: 107-111), the final /l/ is often underspelled, a second /**le**/ sign only rarely realised, e.g. in /**ti-AJAW-le-le**/ (PNG Thr. 1, G'3). When missing, the suffix, which is invariably written with T188, could also be considered as the partitive possession suffix *-el* based on just the formal sign criteria which has been postulated as a morphosyllable.

As a final case study, I would like to investigate attributive adjectival derivations, for which we have a *-Vl* suffix (Houston, Robertson & Stuart 2001: 32-33). It derives a noun, in the same way as English, i.e. by adding the allomorphs *-y*, *-ing*, *-ed* (e.g. froth > frothy). For instances where a /CVC/ noun root has an /i/ vowel, Houston, Robertson & Stuart (2001: Table 9) use the /**IL**/ morphosyllable (as in "**tu-WITS-IL**, *t-u-witzil*", TNA Mon. 106, pB2), but apply regular syllables for the

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18   There are however variations in the spellings when the positional suffix is followed by a temporal marker (Hruby & Child 2004: 18), favouring the principle of sound integration at morphemic boundaries. Again, for reasons of simplicity, I will not detail the various approaches on temporal-deictic clitics, tense and aspect, but simply acknowledge the existence of suffixes for marking points in time or anteriority/simultaneity/futurity in a broader sense.

other root vowels (as in "**A-b'u-b'u-lu-HA'**, *b'ub'ul-ha'*", PNG P. 2, J2-K1). This is inconsequential and seems unreasonable for a couple of reasons. Firstly, the /**IL**/ sign was defined as an abstractive nominaliser (see Table 1), not suitable for adjectival derivations. Secondly, even if it could be used, as an irregular morphosyllable /**IL**/ conveys a variable vowel, thus also being applicable to all other instances with a root vowel other than /i/. And finally, as the vowel in the adjectival -*Vl* suffix is mostly mirroring the root vowel, one would rather assume a regular morphosyllable */**LC**/ or a couple of other potential morphosyllables, such as /**lu**/ > */**UL**/ (Christian Prager, written communication, 17 Feb. 2009) for those vowel harmonic spellings. By investigating a number of spellings for the adjective *k'uh-ul*, "holy, sacred, godlike", I will demonstrate (Figure 5) that such a theoretical morphosyllable does not exist and the postulated /**IL**/ was never used in those instances.
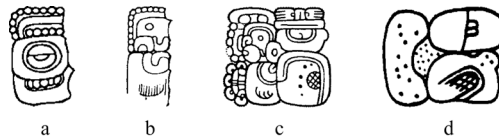
Figure 5. Different spellings for the adjectival suffix -*Vl* demonstrated by *k'uhul*. a) /**K'UH-HUL**/, SBL St. 8, A5a, b) /**K'UH-lu**/, IXZ St. 4, B4a, c) /**u-K'UH-ju-lu-tza-ku**/, YAX Lnt. 25, E1, d) /**KUH-u-lu**/ or /**K'U'-u-lu**/, YUL Lnt. 1, C2.

There are, in fact, only a very small number of examples from the epigraphic record, given the abundance of emblem glyphs and references to sacred objects in the inscriptions. We have a great variety of spellings that range from logographic renderings via phonemic complementation to purely syllabic spellings of the suffix. Similar patterns as with the -*tak* suffix are apparent. Of further interest are the spellings that apply the logograph /**HUL**/ (Figure 5a) mirroring the final /h/ of the root, even featuring the spear sign /**JUL**/ in late examples, when the orthographic distinction between velar and glottal spirants (Grube 2004) was already in decline. The same loss is also visible in the spelling in Figure 5c. Even more evident (Erik Boot, written communication, 17 Feb. 2009) is the case of the Yula Lintel (Figure 5d), where the final /h/ already becomes a glottal stop in Yucatec, thus making the use of /**u**/ instead of /**hu**/ even more plausible.[19] No morphosyllable could explain these patterns by its working principles alone, instead it argues, strongly, for a purely phonemic approach, evidently even stronger in a diachronic perspective.

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19 The same argument of sound shift or at least under-representation of the spirant /h/ can be combined with the discussion about the first person absolute pronoun: the same patterns also occur with the quotative particle and its different renderings as either /**che-he-na**/ or /**che-e-na**/ (Grube 1998: 546-550; Hull, Carrasco & Wald 2009: 37).

6.   Homophony and allography of morphosyllables

As previously indicated, another point of criticism of the morphosyllabic concept emerges from homophony and allography. Given that morphosyllables are considered to carry a specific meaning (Houston, Robertson & Stuart 2001: 18, 20-21), namely the function of the suffix, each postulated morphosyllable shall ideally denote one suffix in an unambiguous surrounding (also see fn. 4 above).

The model of morphosyllables does not encompass this premise and this can be demonstrated by means of the suffix *-aj*. This morpheme, invariably in its phonemic structure, appears in three clearly distinctive functional contexts. It is the thematic marker for the passive voice (Lacadena 2004), e.g. /**chu-ka-ja**/ > *chu<h>k-aj* (TRT Mon. 8, B60). For this purpose, the morphosyllable /**AJ**/ has originally been postulated.[20] However, the *-aj* suffix is also used for an unpossessed or absolutive noun, e.g. /**tu-pa-ja**/ > *tu:p-aj* (PAL TI-M, A9) to which the same morphosyllable has been assigned (Houston, Robertson & Stuart 2001: 46). A third instance is the inchoative, an intransitive derivation from a noun (Houston, Robertson & Stuart 2001: 39-42), e.g. /**NAB-ja u-K'IK'-li**/ > *na:b-[a]j u-k'ik'-[i]l?* (DPL H.S. 2 W, Step IV, G1-H1). However, no problem regarding the meaning arises when considering the traditional /**ja**/ reading in all this cases, as it remains purely phonemic. The same holds true for what is generally labelled the "instrumental" which is "merely a label for a specific category of derived nouns, not necessarily an adequate semantic description of all instances of these derived nouns" (Wichmann 2002: 6). Although not postulated as a morphosyllable, the issue regarding the meaning is also linked to the earlier discussion points made relating to the *-om* suffix.

Another issue touches the principle of allography, which is basically the question of whether all allographs of a sign that also functions as a postulated morphosyllable would automatically be morphosyllables as well. And if so, are there patterns that connect one specific allograph with a single function, i.e. maintaining the carriage of meaning of phonemically indistinct suffixes by graphemic means? Marc Zender (2005: 10) touched on this question when establishing a correlation of the

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20   I disagree with the argument that passive spellings like /**chu-ku-ja**/ shall support the morphosyllabic model (Houston, Robertson & Stuart 2001: 23). While the majority of passive spellings use /**Ca-ja**/, thus integrating the final vowel in the following suffix, the other cases are extremely rare. In such cases, I believe that the reader simply had to fill in the underspelled vowel (reconstructable as *chu<h>k-[a]j*), as T181 and other /**ja**/ signs are a strong and easily recognisable visual marker for a passive form. This differs in no way to how today's epigraphers "learn" to read the Maya glyphs. As a contemporary reader was able to speak the Classic Mayan language, the scribe could be pragmatic and skip a full phonemic writing, without losing any information with regards to content. This principle does not necessarily need a morphosyllable. Generally, it may very well be that certain compounds, once learned, became perpetuated as conventionalised spelling templates, as suggested by Alexandre Tokovinine and Albert Davletshin (2001).

"flaming *ak'bal*" sign with the other widely attested agentive prefix T12. As he concedes, the "flaming *ak'bal*" sign does not occur outside the context of the agentive, attributing morphosyllabic properties to it. However, I see no direct evidence for a morphosyllabic reading /**AJ**/, since the defined principles would not allow such a morphosyllable. T12 and the "flaming *ak'bal*" rather appear to be a logograph[21] (Jackson & Stuart 2001: 218-219; Zender 2005: 9). Taking into account the vagueness of these argumentations, especially the phonemic developments of the signs under discussion, it becomes clear that the first question is open to doubt. Examining the epigraphic examples provided by Houston, Robertson & Stuart (2001) for homophonic morphosyllables, it is easily recognisable to see that no relational patterns of homophony and allography exist. All allographs for a postulated morphosyllable may freely interchange in a variety of contexts, exactly as one would expect from purely syllabic signs.

7. Deviating spellings to the morphosyllabic model

If the morphosyllables were a universally applicable principle, one would expect invariable spellings for all morphemes represented by a morphosyllabic sign. To recap, a regular morphosyllabic sign, such as /**YI**/, would ever be used for the invariable -V_1y suffix of the so-called mediopassive, as well as an irregular form, such as /**IB**/, for the variable -*Vb* instrumental suffix.

However, there are a number of examples in the epigraphic record that do not fit this pattern. These examples apply a different orthographic realisation and do not use one of the signs that have been postulated as a morphosyllable (Table 1). However, from the context and equal substitutions in other texts, we can ensure that these particular writings indeed feature a suffix thought to be represented by the new sign class. Furthermore, such spellings cannot plainly be considered as "scribal errors" because of their quantity. In fact, a number of such "jeopardising deviations" appear across all functional instances where Houston, Robertson & Stuart (2001) would expect a morphosyllable.

A full case study is not intended here and would be out of scope for this paper. A thorough analysis needs a broad epigraphic set of data allowing empirical statements (such as a diachronical and geographical view). Nevertheless, I think that even a small number of examples provide a certain impression that at least challenge the morphosyllabic model with this argument, opting for the phonemic integration at morphemic boundaries.

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21 When considering a logographic value /**AJ**/ for T12, this sign becomes syllabic /**a**/ also by around 750 A.D. according to Marc Zender (2005: 9). However, there are rare instances of other syllabic /**a**/ signs such as T229 acting as an agentive prefix prior to this time, as on TRT Mon. 8, B41 (Gronemeyer 2006: 27), dating to 651 A.D.

For the so-called mediopassive, there are at least two counter-examples for the morphosyllable /**YI**/. On XLM Col. 1, B5 we find /**T'AB-ya**/ > *t'ab-[a]y* (Figure 6a), the same on CAY Lnt. 1, C12. Admittedly, the first instance post-dates 720 A.D. and originates from Northwestern Yucatan; the second is as late as ca. 750 A.D. It is therefore questionable as to how representative this can be for the entire corpus.[22]
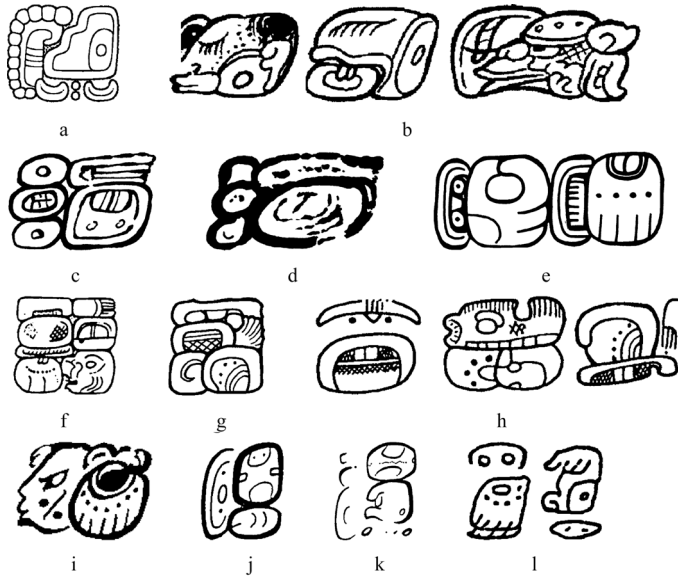
Figure 6. Examples of spellings that deviate from the morphosyllabic concept. a) /**T'AB-ya**/, XLM Col. 1, B5; b) /**u-WE'-i-bi**/, K6080, H1-J1; c) /**yu-k'i-ba**/, K1303, I1; d) /**yu-k'i-ba**/, K1437, E1; e) /**u-chi-ka-ba**/, COL Bn., A1-B1 (Grube & Gaida 2006: 213); f) /**u-pa-ka-ba ti-i-li**/, CHN Monjas Lnt. 2, 7; g) /**u-pa-ka-bu TUN**/, COL Po P., C3; h) /**u-pa-ka-bu TUN-ni-li**/, COL Kansas P., D4-D5; i) /**IX-WAY-ya-ba**/, K1382, E1, j) /**u-BAK-le**/, CML U. 26 Sp. 6, A5; k) /**ti BAK-ke-la**/, CML U. 26 Pdt. 15, A6; l) /**u-ba-ke-le**/, YAX Tomb II Object 85, A1-A2.

Stronger evidence comes from a number of spellings for the instrumental suffix (Figure 6b-i), thought to be realised by /**IB**/. The first example still features the sign T585, however here it is preceded by the vowel sign /**i**/. It is very likely that this unusual spelling was chosen to remove any ambiguity. As the root is realised by a lexeme and no vowel integration is possible, the /**i**/ is used to actually spell[23] the

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22 Similar spelling deviations, but equally weak because they are so rare, are also known for the other regular morphosyllable /**WA**/. On CRC St. 13, A16 and CRC St. 16, B16 we find /**u-K'AL-wi-TUN-ni**/ > *u k'al-[a]w tu:n*.

23 This particular spelling has already been noted by Marc Zender (cited in Boot 2000: 10) who independently arrived at the same conclusions.

variable vowel, giving *u-we'-ib*. I doubt that the /**i**/ functions as some sort of pho-
nemic complement for a morphosyllable, but this spelling is purely phonemic. Of
course, this still does not contradict a morphosyllable alone. However, there are
a number of spellings where T585 is replaced by /**ba**/. A couple of these exam-
ples come from the Primary Standard Sequence expression *y-uk'-ib*, "his drinking
vessel".[24] The initial vowel of the suffix can nevertheless be securely given as [i],
as it is provided by the syllable /**k'i**/ (Mora-Marín 2003b: 26). More intriguing is a
spelling for "rattle" on a bone object in the Ethnographic Museum in Berlin (Figure
6e), which I reconstruct as *u-chik-ab*, because of the vowel integration from the
/**ka**/ syllable. Interestingly, the existing lexical entries support the *-ab* vocalisation
and even suggest this as the preferred pattern in the Ch'olan branch (Grube &
Gaida 2006: 214). More glyphic evidence comes from different spellings of the
word for "lintel", *pakab* and its compounds (Figure 6f-h). The majority of these
spellings likewise utilise the syllable /**ba**/ instead of T585, which never seems to
have been used for this word. The preceding /**ka**/ again strengthens the *-ab* allo-
morph which is also lexically supported in Ch'olan languages. Even more interest-
ing are those epigraphic examples that abandon the /**ba**/ in favour of /**bu**/ (Figures
6g-h). One final example (Figure 6i) is the spelling of a title discussed by Dmitri
Beliaev (2004). The author makes a careful distinction of the established expres-
sion *way-ib* used for lineage shrines and temples (Beliaev 2004: 122). Instead, he
uses the phonemic rendering *way-ab* (Beliaev 2004: 127), translated as "dreamer".
In Beliaev's opinion, the title was for religious specialists summoning spirits of the
'other world' by means of their dreams. As such a person would be the mediator
between two realms, I consider the suffix as an instrumental and not as an agentive
(Beliaev 2004: 127). The example given here again replaces the common T585 of
this title by a /**ba**/ sign, rendering the suffix together with the phonemic comple-
ment /**ya**/ as the allomorphic *-ab*.

   One final group to discuss encompasses the partitive possession suffix *-el*, usu-
ally realised by T188 and considered as the morphosyllable /**EL**/ (Figures 6j-l).
Three examples involving the lexeme *ba:k*, "bone", are of particular interest (Boot
2002: 7), as they show a full substitution pattern from logographic to purely syl-
labic writing. In the first instance, the logogram is simply subfixed by /**le**/, resulting
in a spelling where the initial sound of the suffix would require reconstruction as
[e]. In the second instance, the logogram is followed by a syllable, which is not the
abundant /**ki**/ phonemic complement used when the root is not inflected, but /**ke**/.
Here we already have strong evidence that the syllable is used not as a mere pho-

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24 These spellings are not restricted to the possessed form, as the interesting PSS from K6997 dem-
onstrates. Here, /**u-k'i-ba**/ > *uk'-ib* is the grammatical subject of the God N verb. The following
clause even starts with a /**yu-k'i-bi**/ directly after, showing both spelling variations in one in-
scription.

nemic complement,[25] but to denote the initial vowel[26] of the following suffix as [e]. Furthermore, the next syllable is not the expected T188, but /**la**/ provides the consonant. In a morphosyllabic approach, neither the /**ke**/ sign would be needed, nor would one expect a sign other than T188. Full proof of a phonemic writing, the integration of sounds at morphemic boundaries and the lack of proof for the necessity of morphosyllabic signs is ultimately given by the last purely syllabic example.

8. Conclusions

I fully acknowledge and support the argument that "the [Maya] writing system does not completely record spoken language" (Houston, Robertson & Stuart 2001: 18), and it is likely that no other system does in varying degrees. However, I believe that the postulation of the morphosyllabic sign class leads the research of the orthographic mechanisms towards a 'dead-end'.

My aim was to present some critical arguments that each, individually, already provided some convincing evidence against the morphosyllabic approach. Above all I believe that one of the core principles, the sound inversion from syllabic /CV/ to /VC/, is based on a misunderstanding of the genuine phonemic conception of

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25 This actually is also a good showcase for the rules of vowel disharmony as an indicator for complex vowels (Houston, Stuart & Robertson 1998; Lacadena & Wichmann 2004; Robertson et al. 2007). Morphosyllables shall dispend the rule of disharmony (Houston, Robertson & Stuart 2001: 15, 21), brought forward by the authors with spellings that involve more than one suffix. The vowel shift from the normal uninflected /**ki**/ to /**ke**/ in the examples of Figures 5h-i would result, according to all disharmony models, in a different root vowel complexity for *ba:k*. I suggest that without the use of morphosyllabic signs, the ancient scribes fully perceived morphemic boundaries and handled disharmonic rules at their edge only loosely. A speaker of the Classic Mayan language would have been able to know the correct root vowel complexity even without an orthographic rule for accurate spelling. This premise is endorsed by numerous other examples throughout the epigraphic record, as in spelling variations like /**mu-ku-ja**/ (CAY P. 1, C3) and /**mu-ka-ja**/ (PAL T18S, No. 471), both to be safely transliterated as *mu<h>k-aj*, or spelling shifts as in the abundant /**chu-ka-ja**/ > *chu<h>k-aj* and /**u-chu-ku-wa**/ > *u-chuk-uw* (PNG Thr. 1, A'1), suggesting sound integration. Most intriguingly are the /**chu-ku-ka-ja**/ spellings from PAL SLAV, E2a and YAX H.S. 3 Step I, D1 that provide two /**kV**/ signs to first spell the root (visually strengthened by conflation) plus one for the integration with the thematic passive marker. This is one suggestive interpretation. Lacadena (2004: 175, fn. 101) tried to explain this with passive forms peculiar for Western Ch'olan as possibly **chuk-k-aj*. If appropriate, this spelling would also fit neatly with the idea of overrepresented synharmonic vowels at *C-C* morphemic boundaries, as in the *y-ok-b-il* example cited above (cf. Mora-Marín 2003b: 28-30) or with positional roots using *-wan* and *-laj* suffixes. How the synharmonic passive spellings like /**chu-ku-ja**/ would be explained by such a pattern is still debatable.

26 Equally interesting is a spelling from XLM Jmb. 8, pA2-pA3 which reads /**IX-BAK-e-le**/> *ix ba:k-el* (Erik Boot, written communication, 17 Feb. 2009). Similar to the spelling of *u-we'-ib*, a singular vowel sign has been used to render the initial sound of the suffix. Similar cases as the *ba:k-el* spellings also occur with *te'-el* frequently found in the Primary Standard Sequence (Boot 2002: 7).

the Maya syllabary. The idea that /CV/ syllables should have been inspired by and developed from -*VC* suffixes (Houston, Robertson & Stuart 2001: 19) also ignores the acrophonic derivation of the syllabary completely. I concur with Stephen Houston, John Robertson and David Stuart that, especially, the spellings to which they want to apply the irregular forms of morphosyllables (2001: 16) require the reader to have the knowledge to insert[27] a vowel. However, in contrast to their opinion (2001: 15), I do not feel that a morphosyllable is required to "supply one that is appropriate", but that a purely syllabic and thus phonemic approach achieves the same.[28] Spellings that incorporate sounds at morphemic boundaries make the concept of a morphosyllable arbitrary, even in ambiguous cases, such as logographically realised lexemes, where a specifically chosen syllabic sign may also serve as an indicator[29] (Boot 2000: 10; 2002: 6). The reader's language knowledge should not be forgotten either.

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27 In fact, the reader does not "insert" a vowel, it is mentally present and the reader is expecting or anticipating it based on an ideal spelling, as Erik Boot (written communication, 17 Feb. 2009) summarised so tellingly. Nothing else but the knowledge of the correct vowels was needed from a speaker of Middle Egyptian when reading a hieroglyphic text, as the Egyptian writing system was logo-consonantal (Gardiner 1957: 25-29) and omitted vowels as Hebrew and Arabic nowadays. Currently, Egyptologists use an artificial pronunciation (Peust 1999: 52-56) based on early conceptions of the Egyptian sound system. A transliteration like *ḥbs*, "fabric, clothing, garment" is pronounced as [hebes]. Original Egyptian vocalisation needs reconstruction from several sources, from Coptic as the latest developmental stage of the old Egyptian language or spellings of Egyptian words in cuneiform texts (Gardiner 1957: 428-433). Likely, the above example was pronounced [ḥibǎs] (Schenkel 1997: 325), providing no obstacle for the ancient speaker capable of reading.

28 To restate an earlier view by Stephen Houston (1997: 292): "The idea that grammatical logographs exist at all in Maya script is questionable. [...] Rather, we will follow the more restricted notion that signs do not directly yield any morphological meaning [...]. Instead, the signs record sounds that must undergo a second level of analysis – inference conditioned by orthographic conventions – for them to be understood morphologically. This is true even for the so-called ergative pronoun signs, which in many contexts clearly function as phonetic syllables (Stuart 1990: 222). Such a feature has two important implications for epigraphers: They should not confuse sound with meaning, nor should they argue the general principle that syllabic glyphs vary in reading and morphological function according to their position around other signs. The very point about syllabic glyphs is that they no longer possess meaning [...]."

29 The investigation of these cases and the proof of the hypothesis of phonemic integration at morphemic boundaries is also the topic of my ongoing research for a PhD thesis, tentatively entitled "The orthographic conventions of Maya hieroglyphic writing". The idea that the vowel of the final syllabic sign of a /CVC/ nominal root could indicate the vowel of the following -*Vl* suffix or that such a sign was deliberately chosen even if the morpheme is absent, has already been expressed by Terrence Kaufman (cf. Mora-Marín 2004: 11-12). However, extending this hypothesis and including other morphemes and lexical classes on a broad empirical base is still pending. If proved, only then would it be valid to speak of certain orthographic rules of the hieroglyphic script.

9. Acknowledgements

Bibliographical references

Beliaev, Dmitri
  2004   Wayaab' title in Maya hieroglyphic inscriptions: On the problem of religious specialization in Classic Maya society. In: Graña-Behrens, Daniel, Nikolai Grube, Christian Prager, Frauke Sachse, Stefanie Teufel & Elisabeth Wagner (eds.): *Continuity and change: Maya religious practices in temporal perspective*. Acta Mesoamericana, 14. Markt Schwaben: Anton Saurwein, 121-130.

Beliaev, Dmitri & Albert Davletshin
  2006   Los sujetos novelísticos y las palabras obscenas: los mitos, los cuentos y las anécdotas en los textos mayas sobre la cerámica del período clásico. In: Rogelio Valencia Rivera & Geneviève Le Fort (eds.): *Sacred books, sacred languages: Two thousand years of ritual and religious Maya literature*. Acta Mesoamericana, 18. Markt Schwaben: Anton Saurwein, 21-44.

Blevins, Juliette
  1995   The syllable in phonological theory. In: John A. Goldsmith (ed.): *The handbook of phonological theory*. Cambridge: Blackwell Publishers, 206-244.

Boot, Erik
  2000   *B'utz'aj Sak Chi'ik "Smoking Lark/Calandria Humeante", the third Palenque ruler*. Mesoweb   (<http://www.mesoweb.com/palenque/features/boot/media/SmokingLark.pdf>; (05.09.2011).
  2002   *A preliminary Classic Maya-English / English-Classic Maya vocabulary of hieroglyphic readings*. Leiden: Leiden University.

Bricker, Victoria
  1986   *A grammar of Mayan hieroglyphs*. Middle American Research Institute Publication, 56. New Orleans: Tulane University.

Coe, Michael & Mark van Stone
  2001   *Reading the Maya glyphs*. London: Thames & Hudson.

DeFrancis, John
  1989   *Visible speech: The diverse oneness of writing systems*. Honolulu: University of Hawaii Press.

Edmonson, Munro
  1965   *Quiche-English dictionary*. Middle American Research Institute Publication, 30. New
             Orleans: Tulane University.

Gardiner, Alan
  1957   *Egyptian grammar. Being an introduction to the study of hieroglyphs.* Third Edition.
             Oxford: Griffith Institute, Ashmolean Museum.

Gronemeyer, Sven
  2006   *Tortuguero, Tabasco, Mexico. Its history and inscriptions*. Acta Mesoamericana, 17.
             Markt Schwaben: Anton Saurwein.

Grube, Nikolai
  1990   *Die Entwicklung der Maya-Schrift*. Acta Mesoamericana, 3. Berlin: Von Flemming.
  1998   Speaking through stones: A quotative particle in Maya hieroglyphic inscriptions. In:
             Dedenbach-Salazar Saenz, Sabine, Carmen Arellano Hoffman, Eva König & Heiko
             Prümers (eds.): *50 años de estudios americanistas en la Universidad de Bonn*. Bonner
             Amerikanistische Studien (BAS), 30-II. Markt Schwaben: Anton Saurwein, 543-558.
  2004   The orthographic distinction between velar and glottal spirants in Maya hieroglyphic
             writing. In: Wichmann, Søren (ed.): *The linguistics of Maya writing*. Salt Lake City:
             University of Utah Press, 61-82.

Grube, Nikolai & Maria Gaida
  2006   *Die Maya: Schrift und Kunst*. Berlin: SMB-DuMont.

Houston, Stephen
  1997   The shifting now. Aspect, deixis, and narrative in Classic Maya texts. *American An-
             thropologist* 99(2): 291-305.
  2004   Writing in early Mesoamerica. In: Houston, Stephen (ed.): *The first writing: Script in-
             vention as history and process*. Cambridge: Cambridge University Press, 274-309.

Houston, Stephen, John Robertson & David Stuart
  2000   The language of Classic Maya inscriptions. *Current Anthropology* 41(3): 321-356.
  2001   *Quality and quantity in glyphic nouns and adjectives (Calidad y cantidad en sustantivos
             y adjetivos glíficos)*. Research Reports on Ancient Maya Writing, 47. Washington, D.C.:
             Center for Maya Research.

Houston, Stephen, David Stuart & John Robertson
  1998   Disharmony in Maya hieroglyphic writing: Linguistic change and continuity in Classic
             society. In: Ciudad Ruiz, Andrés, María Yolanda Fernández Marquínez, José Miguel
             García Campillo, María Josefa Iglesias Ponce de León, Alfonso Lacadena García-Gallo,
             & Luis Tomás Sanz Castro (eds.): *Anatomía de una civilización*. Madrid: Sociedad
             Española de Estudios Mayas, 275-296.

Hruby, Zachary & Mark Child
  2004   Chontal linguistic influence in ancient Maya writing: Intransitive positional verbal af-
             fixation. In: Wichmann, Søren (ed.): *The linguistics of Maya writing*. Salt Lake City:
             University of Utah Press, 13-26.

Hull, Kerry, Michael Carrasco & Robert Wald
  2009   The first-person singular independent pronoun in Classic Ch'olan. *Mexicon* 31(2): 36-43.

Jackson, Sarah & David Stuart
  2001   The Aj K'uhun title: Deciphering a Classic Maya term of rank. *Ancient Mesoamerica*
             12(2): 217-228.

Justeson, John
  1984   Appendix D: Subscripts for homophonous signs in Maya writing. In: Justeson, John S.
              & Lyle Campbell (eds.): *Phoneticism in Maya hieroglyphic writing*. Institute for Meso-
              american Studies Publications, 9. Albany: State University of New York, 367-370.
Knorozov, Yuri
  1952   Древняя письменность Центральной Америки (Drevnyaya pis'mennost' Tsen-
              tral'noy Ameriki). *Советская этнография (Sovietskaya Etnografiya)* 3(2): 100-118.
  1955   *Система письма древних Майя: Опыт расшифровки (Sistema pis'ma drevnikh
              Maiya: Opyt rasshifrovki) / La escritura de los antiguos mayas: ensayo de descifrado*.
              Moskva: Akademiya Nauk USSR.
Lacadena, Alfonso
  2000   Antipassive constructions in the Maya glyphic texts. *Written Language and Literacy*
              3(1): 155-180.
  2004   Passive voice in Classic Mayan texts: CV-h-C-aj and -n-aj constructions. In:
              Wichmann, Søren (ed.): *The linguistics of Maya writing*. Salt Lake City: University of
              Utah Press, 165-194.
Lacadena, Alfonso & Søren Wichmann
  2000   *The dynamics of language in the western lowland Maya region*. Unpublished manu-
              script, presented at the 2000 Chacmool Conference, Calgary, November 9-11, 2000.
  2004   On the representation of the glottal stop in Maya writing. In: Wichmann, Søren (ed.):
              The linguistics of Maya writing. Salt Lake City: University of Utah Press, 100-164.
  2005   *Harmony rules and the suffix domain: A study of Maya scribal conventions*. Leipzig:
              Max Planck Institut für Evolutionäre Anthropologie
              (<http://email.eva.mpg.de/~wichmann/harm-rul-suf-dom7.pdf>; 05.09.2011).
Landa, Diego de
  1959   *Relación de las cosas de Yucatán*. Eighth Edition. Mexico City: Editorial Porrua.
MacLeod, Barbara
  1984   Cholan and Yukatekan verb morphology and glyphic verbal affixes in the inscriptions.
              In: Justeson, John S. & Lyle Campbell (eds.): *Phoneticism in Mayan hieroglyphic writ-
              ing*. Institute for Mesoamerican Studies Publication, 9. Albany: State University of New
              York, 233-262.
Mora-Marín, David
  2003a   The origin of Mayan syllabograms and orthographic conventions. *Written Language
              and Literacy* 6(2): 193-238.
  2003b   *Affixation conventionalization: An explanation of regularly disharmonic spellings in
              Mayan writing*. Unpublished manuscript.
  2004   *Affixation conventionalization hypothesis: Explanation of conventionalized spellings in
              Mayan writing*. Unpublished manuscript.
Peust, Carsten
  1999   *Egyptian phonology: An introduction to the phonology of a dead language*. Mono-
              graphien zur ägyptischen Sprache, 2. Göttingen: Peust & Gutschmidt.
Read, Charles, Zhang Yunfei, Nie Hongyin & Ding Baoqing
  1986   The ability to manipulate speech sounds depends on knowing alphabetic readings.
              Cognition 24: 31-44.
Riese, Berthold
  2004   *Abkürzungen für Maya-Ruinenorte mit Inschriften*. Wayeb Notes 8
              (<http://www.wayeb.org/notes/wayeb_notes0008.pdf>; 05.09.2011).

Robertson, John, Stephen Houston & David Stuart
  2004   Tense and aspect in Maya hieroglyphic script. In: Wichmann, Søren (ed.): *The linguistics of Maya writing*. Salt Lake City: University of Utah Press, 259-289.

Robertson, John, Stephen Houston, Marc Zender & David Stuart
  2007   *Universals and the logic of the material implication: A case study from Maya hieroglyphic writing*. Research Reports on Ancient Maya Writing, 62. Washington, D.C.: Center for Maya Research.

Schenkel, Wolfgang
  1997   *Tübinger Einführung in die klassisch-ägyptische Sprache und Schrift*. Tübingen: Eberhard Karls-Universität.

Stuart, David
  1990   The decipherment of "Directional Count Glyphs" in Maya inscriptions. *Ancient Mesoamerica* 1(2): 213-224.
  2001   *A reading of the "Completion Hand" as TZUTZ (Una lectura del signo de "mano-terminación" como TZUTZ)*. Research Reports on Ancient Maya Writing, 49. Washington D.C.: Center for Maya Research.
  2005a   *Sourcebook for the 29th Maya Meetings*. Austin: University of Texas.
  2005b   *The inscriptions from Temple XIX at Palenque: A commentary*. San Francisco: The Pre-Columbian Art Research Institute.

Stuart, David, Stephen Houston & John Robertson
  1999   Classic Maya language and Classic Maya gods. In: Schele, Linda (ed.): *Notebook for the XXIIIrd Maya Hieroglyphic Forum at Texas*, II. Austin: University of Texas, 1-96.

Tokovinine, Alexandre & Albert Davletshin
  2001   *Patterned spellings in Maya orthography*. Unpublished manuscript.

Wald, Robert
  2007   *The verbal complex in Classic-Period Maya hieroglyphic inscriptions: Its implications for language identification and change*. Unpublished PhD thesis. Austin: University of Texas, Department of Anthropology.

Wichmann, Søren
  2002   *Hieroglyphic evidence for the historical configuration of eastern Ch'olan (Pruebas jeroglíficas para la configuración histórica del ch'olan oriental)*. Research Reports on Ancient Maya Writing, 51. Washington D.C.: Center for Maya Research.
  2006   Mayan historical linguistics and epigraphy: A new synthesis. *Annual Review of Anthropology* 35: 279-294.

Wisdom, Charles
  1950   *Materials on the Chorti language*. Microfilm Collection of Manuscripts on Middle American Cultural Anthropology, 28. Chicago: University of Chicago.

Zender, Marc
  1999   *Diacritical marks and underspelling in the Classic Maya script: Implications for decipherment*. Unpublished Master thesis. Calgary: University of Calgary, Department of Archaeology.
  2004   On the morphology of intimate possession in Mayan languages and Classic Mayan glyphic nouns. In: Wichmann, Søren (ed.): *The linguistics of Maya writing*. Salt Lake City: University of Utah Press, 195-209.
  2005   'Flaming Akbal' and the glyphic representation of the aj- agentive prefix. *The PARI Journal* 5(3): 8-10.