

## GRAMMAR IN THE SCRIPT

### MORPHEMES: CVC'S, AFFIXES, AND CLITICS

by **Hutch Kinsman**

Verbal analysis in the glyphs continues with a discussion of linguistic terms and tools that are necessary to understand how the Maya constructed words and sentences in the hieroglyphic script. In the previous article it was seen that Epigraphic Maya<sup>1</sup> is an ergative/absolute language like all present-day Mayan languages, not a nominative/accusative language (see Figure 1.1 previous article) and therefore contains some different and unfamiliar grammatical rules and structures. Besides being different, how these structures are built is controversial among linguists. And as Nicholas Hopkins stated in his review of *The Linguistics of Maya Writing* (Hopkins, 2006:405), “While most observers agree on which graphic signs are ‘the same’ and which are ‘different,’ there are differences of opinion concerning what sounds or concepts are being represented by the phonetic (syllabic) and logographic signs that make up the script (Macri andLooper 2003). Furthermore, the rules for combining these signs into larger, word-level, units are disputed, as is the grammar that results from an analysis of the proposed forms, and the literary canons, discourse structures, and formatting conventions of hieroglyphic inscriptions.” With that caveat, the terms and subjects that will be discussed are generally agreed upon by most linguists, or if not, a short explanation will be provided to explain the differences.

The “building” of words is called morphology and is done with morphemes.

**morpheme**<sup>2</sup> -- the smallest part of a word that has meaning. That part cannot be parsed into a smaller part and still have meaning. In English, the noun “beds” is made up of two morphemes, “bed” and “s”. Bed means a place to sleep and “s” changes the number from singular to plural. “Bed” is a free morpheme because it can occur by itself, and “s” is a bound morpheme because it cannot stand alone. A morpheme is not to be confused with phoneme.

**phoneme** – the smallest individual unit of a single sound represented in a language. The sound of the letter “n”, one of the “nasal” sounds, named for the particular type of constriction in the vocal tract, represents a phoneme in English, Maya<sup>3</sup>, and other languages. The syllabic sign or phonetic sound of “ta” is composed of the phoneme /t/ (the forward slash on either side of the letter sets the letter off as a sound by itself), a consonant, and the phoneme /a/, a vowel. A glottalized consonant and its counterpart, such as k’ and k, are two different phonemes, represented as /k/ and /k’/.

**grapheme** – one of the minimal units in a writing system – in an alphabet, a letter, like <a> or <s>. Graphemes are usually cited within angle brackets (Trask, 1997:99). A single glyph is usually considered a grapheme.

A plain syllabic sound may or may not be a morpheme, depending on the language. “AJ” is a morpheme in Epigraphic Maya but not in English. “No” is not a morpheme in the script although it is a syllabic sound. The transliteration of Epigraphic Mayan has three types of morphemes: root morphemes, affix morphemes, and clitics.

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<sup>1</sup> Neutral term for the hieroglyphs applied by T. Kaufman.

<sup>2</sup> For more information on morphemes, see Gussenhoven and Jacobs (1998:19,20).

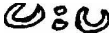
<sup>3</sup> “-n-” is also a morpheme in the Maya script, an antipassivizer (changes a verb to the antipassive voice) on derived/non-CVC root transitive verbs (terms explained later).



**root** – a morpheme that gives the principal meaning to a word.

**affix** – a glyph or combination of glyphs that cannot stand alone yet has a specific function to add grammatical information to the root. There are two kinds of affixes: affix of inflection (or “inflexion”), and affix of derivation. Besides the affixes, a second kind of bound morpheme is the clitic. In the Mayan script an affix can be a prefix, suffix, infix, superfix, subfix, circumfix, or even a “stacked” fix.

**affix of inflection** – a bound morpheme that adds grammatical information to a word without changing its class<sup>4</sup> or meaning. An affix of inflection can change tense or aspect, person, or number. Ergative and absolutive pronoun affixes, *u-*, *-en*, and others (see Table 1.1) change person or number so these affixes are inflectional.

**affix of derivation** – a bound morpheme that forms a new word or changes the grammatical class of the root or base. Derivational affixes can change active voice to passive voice, a noun into a verb (a “verbalized noun”), a verb into a noun (“nominalized verb”), a noun into an adjective, or some similar operation.

**clitic** – a bound morpheme (linguistically a clitic is not an affix) that isn’t derivational or inflectional. A clitic is “phonologically bound but syntactically free”—free because the meaning of the attached word is not dependent on the clitic, but phonologically bound because the final combination is pronounced together as one word. A clitic is a particle, that is, a word whose form does not change. An enclitic is a clitic that follows and is bound to the end of the word after all other derivational and inflectional affixes. One of the most<sup>5</sup> common enclitics in the script is  **-ya**, which when transliterated becomes *-iy* or *-iiy*<sup>6</sup>. *-iy* or *-iiy* is a type of enclitic called a deictic. A proclitic is a clitic that precedes the attached word and all

derivational and inflectional affixes. One common proclitic is **AJ-** , for example, in , meaning “He”, of “He of the writing/painting.” “**AJ-** is an agentive, or the agent of the noun.

**deictic** – a pointing word (*deixus* means “to point” in Greek), and with respect to the reader points to another place or another time, as in “back then”, or “there”, or “since”, or “after”.

### **CVC Morphemes**

In linguistic notation a consonant is represented by capital letter C and a vowel is represented by capital V. Many Mayan root words, particularly verbs, are typically spelled Consonant-Vowel-Consonant, or CVC. In the Mayan script, a CVC root word or morpheme can also be spelled by the use of a logograph that actually represents CVC or syllabically by connecting two syllabic Consonant-Vowel signs, written CVCV. In linguists’ notation in the script, typically a word is spelled CVC(V) and then the last V(vowel) is dropped to give CVC.

Most logographs of verbs are generally of the form CVC. In cases where a logograph has two or more meanings, a complement is used to resolve ambiguity. A complement can be a:


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<sup>4</sup> Noun, verb, and preposition are examples of a particular type of “class”.

<sup>5</sup> Exactly how common and whether **-ya** is an enclitic depends on the interpretation of the linguist. MacLeod (2004:294) and Wald (2004:226-235) translate **-ya** extensively as a particular type of enclitic called a “deictic”, essentially an adverb that determines when or where the event occurs. Robertson, Houston, and Stuart (2004:269,270), in the situation of an intransitive verb, will translate **-ya** as a past tense inflectional affix.


<sup>6</sup> **-ya** may be transliterated *-iy* or *-iiy* depending on the spelling rules that the linguist is following.

- 1) CV prefix to the logograph that matches the CV of the logograph, or
- 2) CV suffix where the C in CV matches the last C of the logograph. Then the second V in the resultant CVCV is dropped or used in the formation of another suffix.


A complement is not considered an inflectional or derivational affix. , **wi-WITZ**, has an initial CV complement **wi-** to cue the pronunciation of the logograph **WITZ** as *witz*, ‘mountain’.









**CHAN-na**, has a final CV complement -**na** to cue the pronunciation of the

logograph  **CHAN** as *chan*, ‘sky’. Though generally not depicted, a glottal stop precedes vowel initial construction, like


















, **'IL**, or **'ILA** or just the vowel alone, , **'a**. The initial glottal stop is considered an actual consonant by most linguists, and thus the **'IL** construction above is CVC.

Mayan languages including the hieroglyphic script divide verbs up into two<sup>7</sup> overall categories, **CVC** and **non-CVC/Derived**. Each of these categories of verbs is divided into **transitive** verbs, **intransitive** verbs, and **positional** verbs. A positional verb is intransitive and is usually marked by a *-wan* or *-laj* suffix. “In general, positional verbs refer to physical states or positions, such as standing, sitting, kneeling, hanging, lying down, leaning, bending, and bowing, that human beings, animals, and inanimate objects can assume” (Bricker, 1998:353). Some verbs are polyvalent, transitive at times and positional at other times. The way to differentiate is to check the affixes, realizing that certain affixes are associated with positional verbs and certain affixes are associated with transitive verbs. Table 2.1 below shows many of the common transitive CVC root verbs used in the hieroglyphic script.


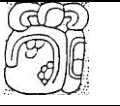




Mayan Root Word (transitive verb)	C	V	C	GLYPH
<i>chok</i> – ‘to scatter’	ch	o	k	 <b>CHOK</b>
<i>chuk</i> – ‘to capture’	ch	u	k	 <b>chu-ka</b>
<i>chuy</i> – ‘to sew’	ch	u	y	 <b>CHUY-yu</b>
<i>ch'ak</i> – ‘to axe’	ch'	a	k	 <b>CH'AK-ka</b>
<i>ch'am/</i> <i>k'am</i> – ‘to receive’	ch' k'	a a	m m	 <b>CH'AM/ K'AM</b>
<i>joch'</i> – ‘to drill’	j	o	ch'	 <b>jo-ch'a</b>

<sup>7</sup> MacLeod (personal communication, n.d.)

<i>jub'</i> – ‘to knock down’	j	u	b'	 ju-b'u
<i>kob'</i> – ‘to engender’	k	o	b'	 ko-b'o
<i>kuch(?)</i> – ‘to carry’	k	u	ch	 KUCH(?)
<i>k'al</i> – ‘to bind’	k'	a	l	 K'AL
<i>mak</i> – ‘to close’	m	a	k	 ma-ka
<i>mek'</i> – ‘to embrace’	m	e	k'	 me-k'e
<i>muk</i> -- ‘to bury’	m	u	k	 mu-ka
<i>naw</i> – ‘to adorn’	n	a	w	 na-wa-ja (passive)
<i>pat</i> – ‘to form’ (also positional verb)	p	a	t	 PAT-ti
<i>pul</i> – ‘to burn’	p	u	l	 pu-lu
<i>tzak</i> – ‘to conjure’	tz	a	k	 TZAK
<i>tzutz</i> – ‘to end’	tz	u	tz	 TZUTZ
<i>tz'ak</i> – ‘to count’ (also positional verb)	tz'	a	k	 TZ'AK
<i>tz'ap</i> – ‘to set upright’	tz'	a	p	 tz'a-pa
<i>uk'</i> – ‘to drink’	'	u	k'	 (y)u- k'(i)-(b'i)




**Table 2.1. Hieroglyphic Script Root CVC Transitive Verbs.**

The transitive verbs are important because many are used in the script in a derived form such as **passive**, **mediopassive**, or **antipassive**, all discussed in later essays. Passive, mediopassive, and antipassive originate from a transitive verb by definition. Passive, mediopassive, and antipassive are all intransitive constructions and use the absolutive form of the subject. Tables 2.2, CVC root intransitive verbs, 2.3, CVC root intransitive (special class), and 2.4, CVC root positional verbs follow.

<b>Mayan root word</b> (intransitive verb)	<b>C</b>	<b>V</b>	<b>C</b>	<b>SCRIPT</b>	
<i>cham</i> – ‘to die’	ch	a	m		<b>CHAM- mi</b>
<i>hil</i> – ‘to rest’	h	i	l		<b>hi-li</b>
<i>hul</i> – ‘to arrive’	h	u	l		<b>HUL-li</b>
‘ <i>och</i> – ‘to enter’	‘	o	ch		<b>OCH-chi</b>
‘ <i>ut</i> – ‘to happen’	‘	u	t		<b>‘u-ti</b>
<i>tal</i> – ‘to come (here)’	t	a	l		<b>TAL-la</b>






**Table 2.2. Hieroglyphic Script Root CVC Intransitive Verbs.**

Plain intransitive verbs with examples were discussed in the previous article. The verb ‘*och* is a somewhat different intransitive verb in that it is usually found coupled with certain nouns. Nikolai Grube says (2004:74,75), “The verb *ochb’ih* seems to be part of a class of verbs that I would call ‘intransitive compounds.’ These are formed of an intransitive root and a noun and include (besides *och-b’ih*) examples such as *och-ha* (‘water-enter’, another death expression), *och-k’ahk’* (‘fire-enter’, a dedication event), *chum-tuun* (‘stone-seating’), *chum-tz’am* (? , Palenque 96 Glyphs, ‘throne seating’) and *el-naah* (‘house-burn’, another dedication event). These compounds can have full verbal inflection as intransitive verbs.”

<b>Mayan root word</b> (intransitive – motion?)	<b>C</b>	<b>V</b>	<b>C</b>	<b>SCRIPT</b>	
‘ <i>ehm</i> – ‘to descend’	‘	eh	m		<b>‘EHM- ye</b>
<i>lok’</i> – ‘to exit, leave’	l	o	k’		<b>LOK’-yi</b>
<i>t’ab’</i> – ‘to go up’	t’	a	b’		<b>T’AB’-yi</b>

**Table 2.3. Hieroglyphic Script Root CVC Intransitive (motion) Verbs.**



These special CVC intransitive verbs seem to be part of class of intransitives involving some sort of motion (Zender, 2005:12) that take a **-yi** or **-ye** suffix.



Mayan root word (positional)	C	V	C	SCRIPT
<i>pat</i> – ‘to form’	p	a	t	 <b>PAT-ti</b>
<i>chum</i> – ‘to sit’	ch	u	m	 <b>CHUM</b>
<i>tz’ak</i> – ‘to set in order’	tz’	a	k	 <b>TZ’AK</b>
<i>pak</i> – ‘to fold’	p	a	k	 <b>pa-ka</b>
<i>wa’</i> – ‘to stand up’	w	a	’	 <b>wa-WA’</b>

**Table 2.4. Hieroglyphic Script Root CVC Positional Verbs.**

**Derived/non-CVC root verbs**

Any word that wasn’t spelled CVC was spelled with some other combination of consonants and vowels such as VC, VCV, CVhC, VCVC or CVCVC is “non-CVC”. The -h- shown in CVhC is the infix -h-, the “aspirated” sound, a kind of an extra puff of air that is added to the pronunciation. In addition, even if a word is spelled CVC but is actually derived from another word class such as a noun, for instance like the verb **CHAB’/KAB**, ‘to govern’, from the noun **CHAB’/KAB**, ‘land’, then the word is classified as a non-CVC/Derived verb root. Table 2.5 contains a few of the non-CVC/Derived root verbs.




Derived Verb (Transitive)	Origination	Notes	Script
<i>tz’ihb’(a)</i> -- “to paint, write”. Last syllable spelled with the affix <b>b’a</b> . (transitive).	<i>tz’ihb’(i)</i> – noun meaning “painting, writing.” Last syllable spelled with the affix <b>b’i</b> .	-a is considered the transitive suffix (first noted by N. Hopkins).	 <b>tz’i-b’i</b>
<i>kab’/chab’</i> – ‘to govern, to cause to happen.’	<i>kab’/chab’</i> – noun meaning ‘land’ (also ‘honey’).	Note context and verbal affixes to determine whether word is a noun or a verb. Often found with perfect and deictic as <b>u’CHAB’-ji-ya</b> , <i>uchab’ijiiy</i> , ‘he has overseen it’.	 <b>KAB’/CHAB’</b>

'ila – 'to see, to witness'.	Considered a derived verb because it behaves as an irregular verb in the languages. The root form is 'ila. (B. MacLeod, personal comm., 2007).	Not fully determined whether main sign is 'IL or 'ILA. Found in intransitive contexts of passive and antipassive and transitive contexts with ergative pronoun <b>yi-</b> , sometimes with perfect and deictic <b>-ji-ya</b> .	 <b>'IL(A)</b>
jatz' – 'to strike'	Possibly derived from the noun <i>jaatz'</i> , 'whip, cudgel' (Zender, 2004:8).	"Stone-in-Hand" glyph.	 <b>JATZ'</b>

**Table 2.5. Non-CVC/Derived Root Transitive Verbs.**

**Affix morphemes**



A few of the CV syllabary signs, like *wa*, *b'u*, *ma*, *ni*, and *u*, may at times be morphemes by themselves, but most are not. One or more morphemes may be derived from a single grapheme. Below is a table of the glyphs of the form **b'V** that are used to make the syllable or syllables required for a particular affix<sup>8</sup>.

<b>GLYPH</b> (grapheme)	<b>Trans-Literation</b>	<b>Purpose</b>	<b>Contribution to Affix</b>	<b>Affix Transcription</b> (morpheme)	<b>Example</b>
	<b>b'a</b>	Instrumental Passivizer Causative Transitivizer <sup>9</sup> Plural	ab'/b' ab'/b' b'a a b'	-ab' -ab' -b'a -a -ob'	<i>ch'akab'</i>  <i>tz'ihb'a</i> <i>haob'</i>
	<b>b'e</b>	Indirect object (?) <sup>10</sup>			
	<b>b'i</b>	Instrumental	ib'	-ib'	<i>yuk'ib'</i>

<sup>8</sup> Wichmann has provided an **Index of Grammatical Morphemes in the Inscriptions** that are discussed in *The Linguistics of Maya Writing* (2004:451).


<sup>9</sup> The *-b'a* here is technically not a transitivizer—only the *-a* makes this derived verb into the transitive (N. Hopkins first suggested this idea.)

<sup>10</sup> Kaufman and Norman (1984: 139) list *-b'e* as an indirect object marker in Ch'ol, Chontal, Ch'olti, and Ch'orti, reconstructed as proto-Mayan *\*-b'e* and Tzeltalan *\*-b'ey*. However as far as known there are no examples of this usage in the hieroglyphic corpus. The use of the asterisk in historical linguistics represents a reconstructed form.

	<b>b'o</b>	Plural	b'	-ob'	<i>haob'</i> <b>ha-o-b'o</b>
	<b>b'u</b>	Causative (on positionals)	b'u	-b'u	<i>patb'uniyy</i>

**Table 2.6. “biba” chart** (after MacLeod 1987:Figures 64,65,66).

These **b'V** syllabic signs have three uses: 1) a CV syllabic sign to spell words, 2) an affix morpheme used in the cases shown above, and 3) a complement as discussed above. Two of the affixes, **b'a** and **b'u**, are usually suffixed to an intransitive verb, like a positional verb, to make a new verb called a “causative”. In English, a causative phrase would include a verb like *make*, *let*, *cause*, or *have*. Therefore a sentence like “The students left” would become “We made/let the students leave” (Tallerman, 1998:195-199). In Mayan languages a verb becomes causative by a morphological change by adding an affix. The basic change in meaning is the same, but the affix is just a shorthand way of going from one meaning to the other.

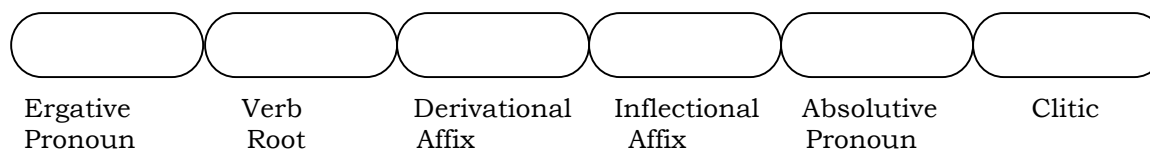
In a few cases it seems that the transcription of the **-cv** glyph has merely been reversed to produce a -VC morpheme. For instance,  **b'i** is used in forming the instrumental suffix *-ib'*. An instrumental suffix is added to a verb to form a noun that defines the instrument by which the action of that same verb is performed; **yu-k'i-b'i**, *yuk'ib'*, ‘his drinking vessel’, comes from the verb *uk'*, ‘to drink’ and the instrumental suffix *-ib'*. However, in this case, the *i* in *yuk'ib'* comes from the previous syllable *k'i* rather than the **-b'i** affix. In other cases where it seems that the transcription of the **-cv** glyph has merely been reversed to produce a -VC morpheme, the new morpheme may be what some linguists call a morphosyllable.

“Morphosyllables” (Houston, et al, 2001:14) such as **-ja** have two uses:

- 1) the syllabic sound of *ja*, used as CV in spellings like *jaC* (ex. *jatz'*) and *CVjaC(V)* (ex. *sajal*), and
- 2) the morpheme **-AJ** that becomes a grammatical suffix with many other uses, such as the thematic marking of the passive as an intransitive or the agentive proclitic **AJ-**. The new morpheme is considered a logograph and is formed by reversing the original CV to VC.

An alternative to morphosyllabism is that perhaps the Maya scribes just reversed the CV sound to VC to get the desired affix.

A partial verb diagram appeared in the previous article; a complete diagram showing the verbal paradigm with verb root, derivational and inflectional affixes, including the ergative and/or absolutive pronouns and clitic (enclitic in this case) looks like this:





If the ergative pronoun is a possessive pronoun or is not present, the verb is intransitive and the absolutive pronoun represents the subject. If the ergative pronoun is the subject pronoun then the verb is transitive and the absolutive pronoun represents the object.

## SUMMARY

Several essential terms directly applicable to the glyphs were discussed as well as charts for the CVC verb roots of transitive, intransitive, intransitive (verbs of motion?), positionals, and non-CVC/derived verbs. Suffixes found on these different root classes in the hieroglyphic script and essential for the recognition of the use of the verb and thus its analysis will be discussed in future essays. Maya CVC verbs are generally inflected differently than the non-CVC/Derived verbs as will be shown in future analysis. The “biba” chart is an example of one set of graphemes that derives or inflects a verb. A good exercise would be to chart the uses of **ja**, **je**, **ji**, **jo**, and **ju**. Future articles will cover passives, mediopassives, antipassives, and transitive constructions as part of the verbal analysis.

## ACKNOWLEDGMENTS

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