A survey of systematic spelling practices and conventions in Mayan writing

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Background

- Decipherment

- **Spelling conventions/principles**

- Grammar

- Verbal art

- Text and image

- **Corpora**

- Historical sociolinguistics and paleography

Overview

- Mayan writing and Mayan languages

- Classification of major signs

- Proposed spelling strategies

- Methods and datasets

- Units and variables

- Review of proposed spelling strategies

- Diachronic patterns

- Implications and conclusions

- Future research

Mayan writing

- Mesoamerican writing systems emerge starting around 1100 BCE (Mora-Marín 2016, 19)

- Earliest decipherable scripts in place around 400-300 BCE

- Wide variety of media (paper, stone, wood, pottery, clothing, skin; monumental vs. portable)

- **Top-down, left-to-right, double-column reading order/formatting**

- Principled linguistic **decipherment** began in earnest in the 1950s and 1960s and continues to this day (Knorozov, Lounsbury, Kelley, Proskouriakoff, Berlin, Mathews, Bricker, Justeson, Stuart, MacLeod, Houston, Grube)

- Political history, cosmological, mythical, dedicatory, proprietary **genres** (cf. Hull and Carrasco 2012)

Sample text

LA CORONA, Panel 2
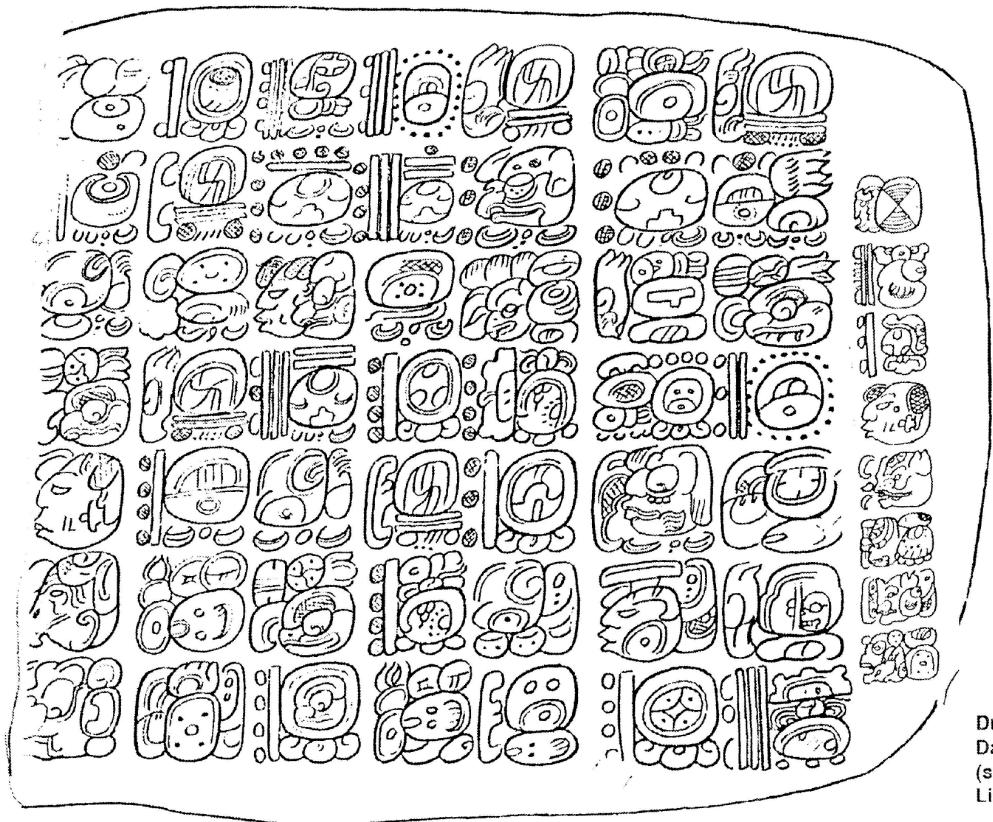
Drawing by
David Stuart
(small text by
Linda Schele)

Periods of use of Mayan writing

- Late Preclassic 400 BCE-CE 200

- **Early Classic 200-600 CE**

- **Late Classic 600-900 CE**

- Postclassic 900-1521 CE

- Contact 1511-1697 CE

- 1980s-present: revitalization of Mayan writing by Mayan speakers

Mayan languages

- 30-odd languages

- **Six major subgroups**

- VOA/VS

- Morphologically ergative-absolutive, head-marking

- Some syntactic ergativity

- Proto-Mayan estimated glottochronologically at ca. 4200 years ago

- Innovations of **Ch'olan-Tzeltalan** speakers attested epigraphically by 2100 years ago

- Innovations of **Ch'olan** speakers attested epigraphically by 1700 years ago

- Innovations of **Yucatecan** speakers attested epigraphically by 1300 years ago
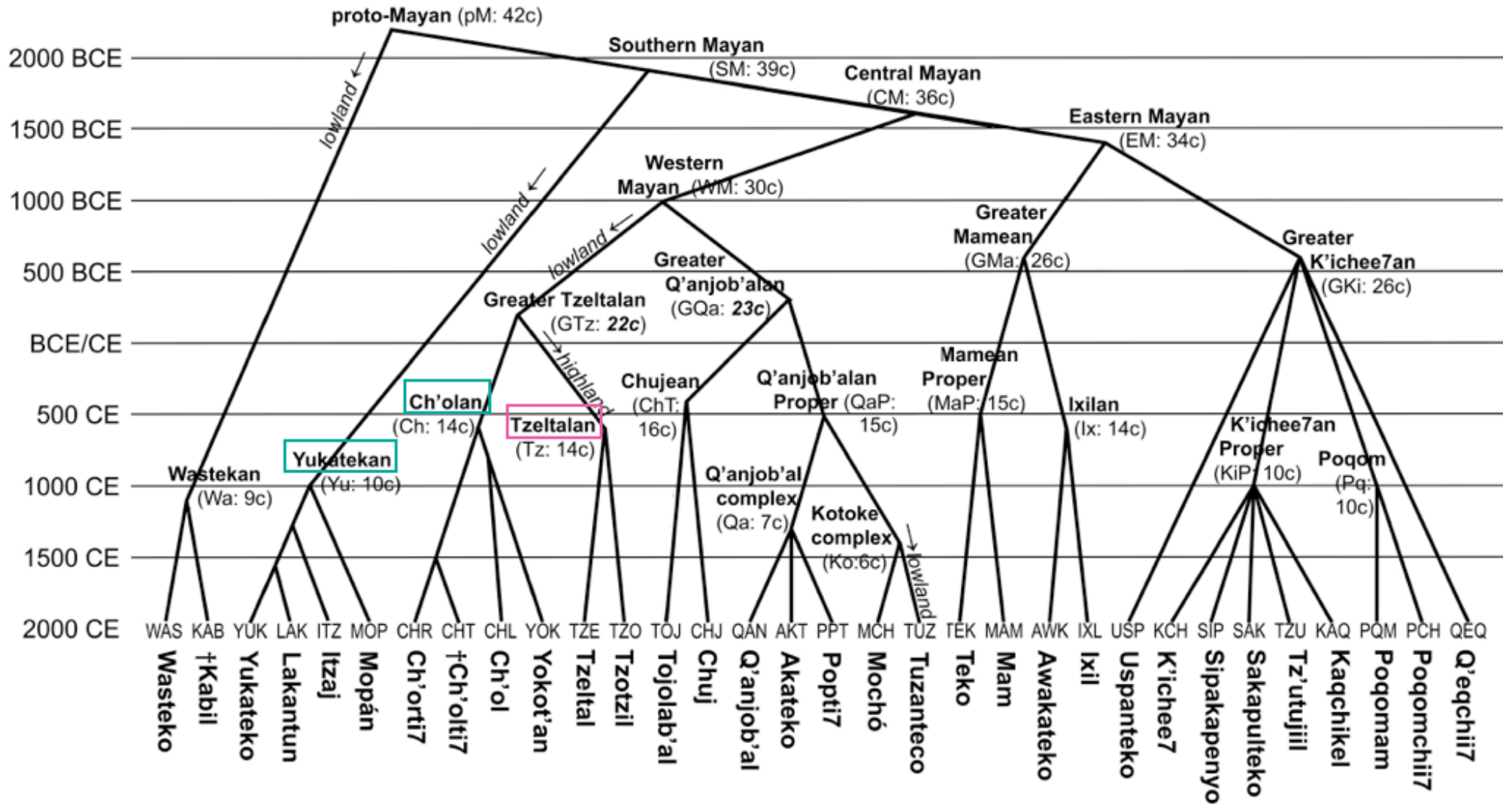
Kaufman 2017

Basic phonemes (practical vs. IPA)

Table 5.1. Proto-Ch'olan phonemic inventory.

p	t		tz [ts]	ch [tʃ]		k	?	Syllables canons
b' [ɓ] p'(?)	t'		tz' [ts']	ch' [tʃ']		k'		CVC
			s	x [ʃ]		j [x]	h	CVhC
m			n					$CV?V_1C^{12}$
	l							
			y [j]			w		Syllabification
			i		ä [ə]	u		CV(h)$CV…
			e			o		CV?(V$_1$)$CV…
					a			

Signs

- Logograms
- Syllabograms
- [Allograms and allographs
- Semantic determiners
- Duplication diacritic]
- Glyph block punctuation

Graphematic: specifically employed to represent linguistic information

- Iconographic classifiers
- Bar-and-dot numeral fillers
- Size differences for emphasis

Graphetic: are not (obviously) relevant to basic linguistic encoding/decoding in the texts

Logograms and syllabograms

- Logograms

  - CVC, CVCVC roots and stems

- Syllabograms

  - CV and a few (about a dozen or so) CVC
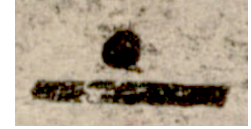

K'AYOM
k'ay-oom
singer

k'a-yo-m(a)
k'ay-oom
singer

Glyph block punctuation

- Copan Altar Q: 36 glyph blocks, 62 words (1.72 ratio of words to glyph block)
- Glyph blocks normally contained constituents (hierarchical level can vary) such as nouns, noun phrases; verbs, verb phrases; prepositional phrases; clauses (Justeson 1978)
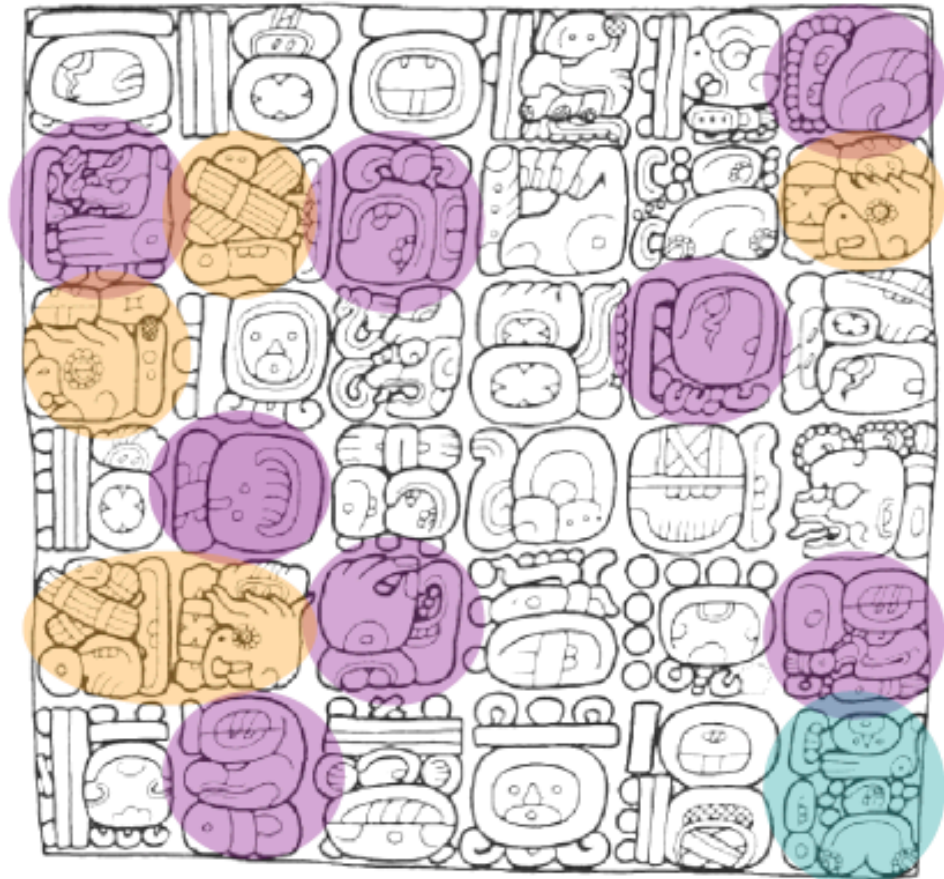
Spelling strategies

- Polymorphemic logography

- Phonetic complementation

- [Consonant deletion

- C_1V_1 deletion

- Vowel insertion (fictitious and non-fictitious)

- Consonant insertion

- CVC syllabograms]

- Glyph block "punctuation"

- Size of glyph blocks and signs: differences within text to highlight or give prominence to some passages within the text

- Not discussed here: visual arrangement/combination strategies like blending, infixing, amalgamation, omission/ellision (in word-medial contexts), among other representational strategies

Key questions

- *Why did Mayan writing evolve the way it did?*

- Zender (2005) commented on K8885:

- "Not only is the calligraphy remarkable for glyphs a little less than a centimeter tall, but the text seems to be composed entirely of phonetic syllables. I'm hard-pressed to think of another text this length (7 blocks, 35 signs) without so much as a single logograph."
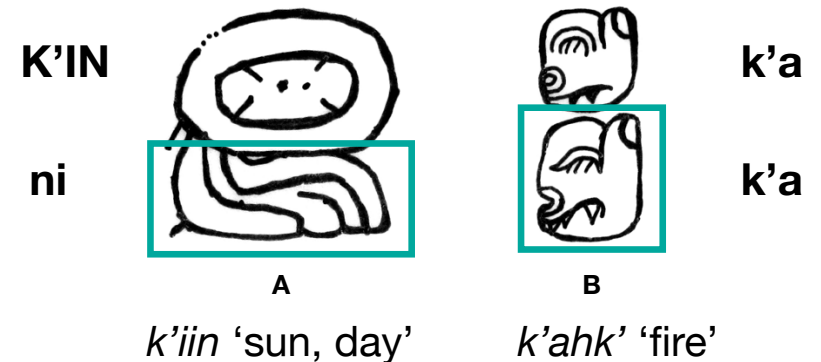
- *Why didn't scribes write this way more often?*

http://www.mayavase.com/com8885.html

Other Late Classic cases

- K1227: Only one logogram in one of the glyph blocks of the top horizontal rim text

  - Rest are syllabograms (17)

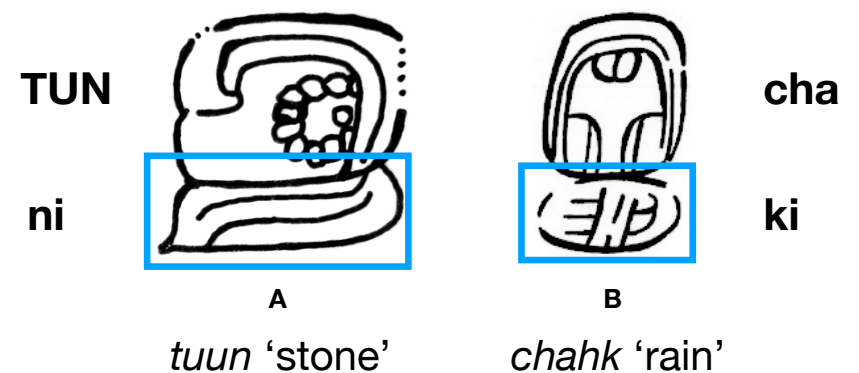- K5058: No (legible) logograms, only syllabograms

Key questions

- *How/why did scribes choose CV syllabograms to close a word?*

- Synharmonic pattern

- Disharmonic pattern

- Several proposals on the matter (Bricker 1989; Justeson 1989; Hopkins 1997; Houston et al. 1998, 2004; Kaufman with Justeson 2003; Lacadena and Wichmann 2004; **Mora-Marín 2005, 2010, 2019**)

Synharmonic

$CV_1C/CV_1\text{-}CV_1$

K'IN

ni

k'a

k'a

A

B

k'iin 'sun, day'

k'ahk' 'fire'

Disharmonic

$CV_1C/CV_1\text{-}CV_2$

TUN

ni

cha

ki

A

B

tuun 'stone'

chahk 'rain'

Key questions

- *How did scribes represent obligatory suffixes?*

- Phonetically and also "Logographically" (Thompson 1950; Justeson 1978, 1989; Fox and Justeson 1984; Mathews and Justeson 1984)

- "Morphosyllable" hypothesis (Houston et al. 2001)

- Fully and partially phonetically, through phonetic complementation (minimal indication), or not at all when polymorphemic logography (or logographic abbreviation) was used (Mora-Marín 2001, 2005, 2010)

Methods and datasets

- Documentation of texts

- Comparison of variable spellings in identical/equivalent syntactic and pragmatic contexts

- Comparison of variable spellings in different syntactic and pragmatic contexts

- Use of *Maya Hieroglyphic Database* (Looper and Macri 2011-present) for more comprehensive and quantitative information

- Continuation of previous work (Mora-Marín 2005, 2008, 2010, 2019)

Problem of variables

- Mora-Marín (2017, 2019, 2020, 2021)

  - Graphic

  - Graphemic

  - Orthographic

    - My present goal is to discuss orthographic variation of graphematic significance, i.e. to understand the graphic/linguistic interface

  - Linguistic

1. Polymorphemic logography

- In principle, syntax was sufficient for scribes to read a passage consisting of logograms and in the process "insert" obligatory grammatical morphemes that were otherwise not explicitly rendered in whole or part

- Whether such cases ought to be considered "abbreviations" or cases of polymorphemic logography is hard to settle

- In some cases (e.g. logograms for inalienably possessed nouns, logograms for verbs which required inflection), because of the nature of Mayan grammar, polymorphemic logography seems likely

Agentive nouns in -om < *-oom

K'AYOM
Pearlman Conch Shell
CMA 86.457

k'a-yo-ma
Pearlman Conch Shell
CMA 86.457

K'AYOM
K8457 (Boot 2006)
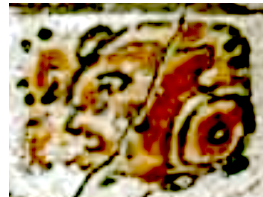
K'AYOM-ma
K8008 (Tikal)

k'ay-om (< k'ay-oom)

sing-AGENTIVIZER

'singer'

- The logogram **K'AYOM** is typically polymorphemic, representing a morphologically derived noun stem

- Syllabic spelling **k'a-yo-ma** allows for explicit spelling of suffix *-om (< *-oom)*

Inalienable nouns with possessive prefix *y-*

CLAW JAGUAR

YICH'AK-ki B'ALAM-ma

yi-ch'a-ki B'ALAM

y-ihch'ak b'ahläm

A3-claw   jaguar

'jaguar's claw'

(lit. its-claw jaguar)

Syntax (possessed + possessor) allows reader to determine inflection

Inalienable nature of 'fingernail/claw' also helps: either possessed with prefix (e.g. y- 'his/her/its'), or unpossessed with 'unpossession' suffix -il)

Example from Stuart (1987)

2. Phonetic complementation

- Partial vs. full phonetic complementation (Mora-Marín 2008)

Figure 4.43. Phonetic complementation of *wahy 'shape-shifter; co-essence'

	Preposed	Both	Postposed
Partial	wa-WAY		WAY-ya
Complete	wa-ya-WAY	wa-WAY-ya-	WAY-ya-wa

More examples

Figure 4.44. Full phonetic complementation of logograms.

ʔu-[ʔu]ʔUNIW-ni-wa 14th month name a	K'INICH-[JANAB']PAKAL-pa-ka-la …pakal 'shield' b	ya-ʔAJAW-ja-wa y-ajaw(-al) A3-lord(-ABSTR) 'his/her (vassal) lord' c
MAN-ma-na ? d	ma-MAN-na ? e	WAJ-wa-ji waj 'tamale' f

3. Consonant deletion

- Bricker (1986, 1989), Justeson (1989), Zender (1999), Mora-Marín (2001, 2005, 2010)

- Contexts: syllable- and word-final

- Primarily certain consonants, such as /h/, /l/, /n/

- Some (e.g. /h/, /l/) of these may be weakened or deleted altogether in contemporary relevant languages in those same contexts

ta-ja-l(a)   MO?
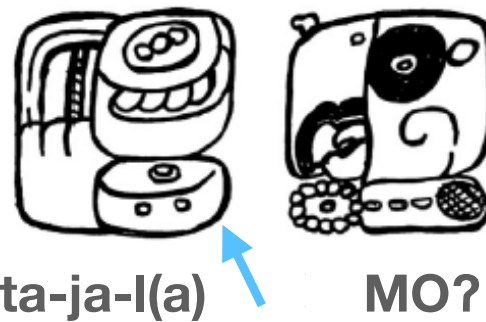
taj-al=mo?
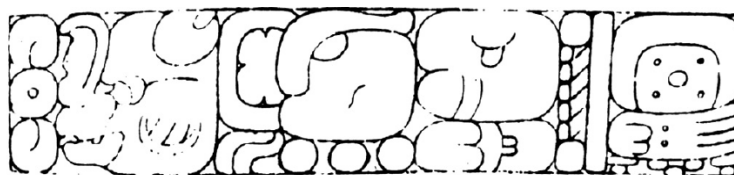torch-ADJECTIVIZER=macaw
'torchy/fiery macaw'

ta-ja-MO?-?o

More examples

- Mora-Marín (2010)

- Comparison of variable spellings in **identical contexts**

  - Scribal signature referring to same scribe

  - Underspelling of final consonant /l/ seen in second example

ʔaj-b'i-k'i-la
ʔaj-b'i(ʔ)k'-il
'scribbler'

Both attest to a suffix of the shape -i(i)l

ʔaj-b'i-k'i
ʔaj-b'i(ʔ)k'-i(l)
'scribbler'

4. C_1V_1 deletion

	C_1V_1-C_1V_1	C_1V_1 deletion	[2]diacritic

- Mora-Marín (2005, 2010)

- Whenever a CV sign can be used twice sequentially, it could be omitted

- a-c: spellings of *käkäw 'cacao'

- d-f: spellings of -*lel* 'abstractivizer'

ka-ka-wa

a

ka-wa

b

[2]**ka-wa**

c

ti-?AJAW-le-le

d

ti-?AJAW-le

e

ti-?AJAW-[2]le

f

5. Vowel insertion

1. **Obligatory synharmony due to phonological context**

    1. C_1VC_1 roots and sequences

    2. CV? roots and sequences

    3. CVCC… sequences

    4. Exceptions: Vowel-insertion ligatures (following proclitic or prefix)

2. **Obligatory synharmony at morpheme boundary**

    1. …CVC-V…

3. **Vowel conditioned by vowel of typical -VC… suffix/enclitic**

4. **Non-fictitious (previously or often analyzed as fictitious)**

    1. Final vowel represents vowel of -V… suffix

    2. **Vowel-insertion ligatures**: Final vowel represents vowel of V- proclitic of following word

Obligatory synharmony due to phonological context

- Justeson (1989)

- Mora-Marín (2001, 2005, 2010, 2019)

1. C_1VC_1 roots   2. CVʔ roots

a	b	c	d
k'a-k'a	**po-po**	**te-ʔe**	**ʔu-ts'i-ʔi**
k'ahk'	pohp	teʔ	u-ts'i(i)ʔ
fire	*mat*	*wood*	*the dog of…*

Obligatory synharmony due to phonological context

- Mora-Marín (2001, 2005, 2010, 2019)

3. … C₁VC₁…
sequences (obligatory)

4. … C₁V?…
sequences (obligatory)

ti-?AJAW-le-l(e)
ti ?aajaaw-(a)leel
PREP lord-ship
in lordship

(K'UHUL-)K'AB'A?[b'a]-?a
(k'uhuul) k'aab'aa?
'(holy) name'

Obligatory synharmony due to phonological context

- Mora-Marín (2001, 2005, 2010, 2019)

  - Consonant clusters in loanwords

  - Consonant clusters resulting from vowel syncope in native words

    - Contra Law and Stuart (2017), these types of contexts can only be demonstrated when vowel that is deleted is different in quality originally

      - E.g. ʔahk'<u>ot</u> + -aj > ʔahk't-aj

5. …VCCV… sequences (obligatory)

ka-k(a)-tu-na-la
Nahuatl *cactonal* (deity name)

ʔa-k'(<u>a</u>)-ta
ʔah<u>k</u>'t-a(j)-Ø-Ø
dance-IVZR-3sA-CMP
s/he danced

6. …VC-V… sequences (optional)

yi-l(i)-(ʔ)a-ji
y-il<u>-a</u>-(a)j-Ø(-i)
3sE-see-APPL-PERF-3sA(+PROX)
s/he had seen it

Vowel-insertion ligatures

- How to spell *k'ahk' u-pakal* 'his shield is fire'?

- *u-* 'third person singular ergative/possessive agreement' marker is a proclitic; when not clause- or phrase-initial, it typically cliticizes to preceding word

- First spelling shows phrase structure

- Second spelling shows cliticization to preceding word

  - **k'u** syllabogram functions as ligature, linking *k'ahk'* 'fire' and *u-pakal*

K'AK'   ?u-   PAKAL
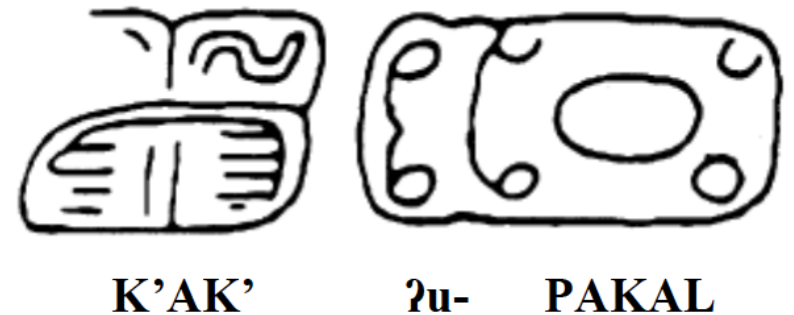
After Graham in Velásquez García (2016:74, Fig.2)

k'a   pa

ka   CE 874, 880, 881

k'u   la
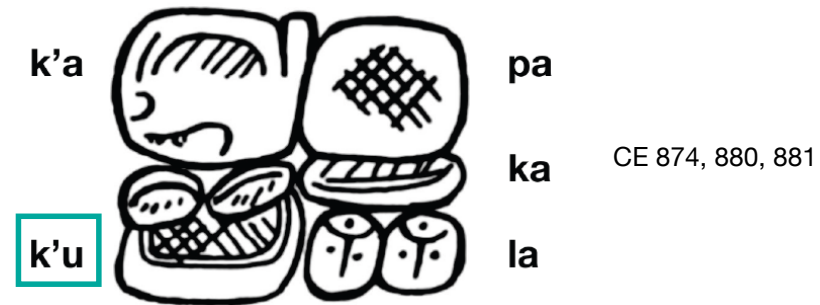
After Graham (1977:269)

6. Consonant insertion

Bricker (1985, 1989), Mora-Marín (2001, 2005, 2010, 2020), Kaufman (2004), Grube (2004)

1. **Phonetic complementation**: A CV syllabogram is added to point to the final consonant of a CVC(VC) logogram

2. **Suffix representation**: A CV syllabogram repeating the final C of a CVC(VC) logogram to provide an explicit spelling of a -V… suffix

3. **Suffix representation**: A CV syllabogram repeating the final C of a CV syllabogram to provide an explicit spelling of a -V… suffix

4. **Word-boundary consonant-insertion ligature** (preceding suffix or enclitic)

1 **B'ALAM**

ma

b'ahläm

'jaguar'

2 ?u-K'I<u>N</u>-<u>ni</u>-le

u-k'iin-il 'its day/time'

6. Consonant insertion

Bricker (1985, 1989), Mora-Marín (2001, 2005, 2010, 2020), Kaufman (2004), Grube (2004)

3

3. **Suffix representation**: A CV syllabogram repeating the final C of a CV syllabogram to provide an explicit spelling of a -V… suffix

tz'i-b'i   na-j(a)   ji-ch(i)

tz'ihb'-naj-Ø-Ø-ich

writing-DTV.PASS-CMP-B3-AFFIRM

'it was painted already/indeed'

6. Consonant insertion

Bricker (1985, 1989), Mora-Marín (2001, 2005, 2010, 2020), Kaufman (2004), Grube (2004)

4. Word-boundary consonant-insertion ligature

?u

B'AH

u-b'ah(-il)

'her/his/its-portrait'

4

STEP

yu-B'AH

Syllabogram **yu** links two words

STEP

STEP

STEP-**Vy]**

"dedicate"-V_1y-Ø-Ø

"dedicate"-INCH-CMP-B3

'it became "dedicated"'

yu-B'AH

y][u-B'AH

[u b'ah(-il)

u-b'ah-il

A3-head-ABSTR

'his portrait'

(Demonstrates -*i* 'completive status of intransitives' that motivates the typical use of **Ci** syllabograms to close the spelling of an intransitive verb was not uttered in some contexts)

7. CVC syllabograms

- Relatively rare use of CVC logograms for phonographic value only; about 12 good examples, possibly more

- Good phonological fit for root/stem/word structure

- Function as syllabograms, but may receive phonetic complementation, in which case they are treated like logograms

- Some **CVH** logograms used as **CVh** syllabograms suggest scribes were rarely attempting to represent preconsonantal /h/ (e.g. **nah-wa-ja** for *nahw-aj* 'she was adorned', **ʔuh-ti** for *ʔuht-i* 'it was finished; it happened')

- Gronemeyer (2011:9, 488-489) has discussed some of these in some detail

Some examples

?u-
K'UH(UL)
-hu-lu

?u-
K'UH(UL)-<u>hul</u>

u-k'u<u>h-ul</u>…
'its god-ly (holy)…'

ta-yu-<u>ta</u>-la

ta-yu-<u>tal</u>

tä y-u<u>t-al</u>

'for the content/food of…'

'for the finished/prepared…'

Diachronic patterns

- Use of Maya Hieroglyphic Database (Looper and Macri 2011-present)

- Examples

  - **B'ALAM-la-ma**   *b'ahləm*   'jaguar'

  - **?u-b'ah/b'a-hi-li**   *u-b'ah-il*   '(it is) his/her portrait'

  - **K'AL/k'a-la-ja**   *k'a[h]l-aj-Ø-Ø*   'it was closed/wrapped'

  - **?u-cho/CHOK-ko-wa**   *u-chok-ow-Ø*   's/he throws/threw it down'

B'ALAM for *b'ahləm* 'jaguar' (disyllabic root)

- Disyllabic root reconstructible to proto-Mayan as *b'ahlam
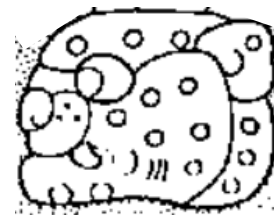

B'ALAM

B'ALAM-ma

—ba

—la
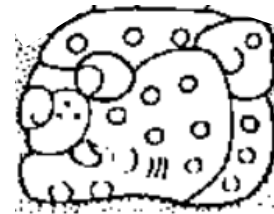
—ma

B'ALAM for *b'ahləm* 'jaguar' (disyllabic root)

- **B'ALAM**   307x   CE 292-890

- **B'ALAM-ma**   126x   CE 465-820

- **B'ALAM-la**   1x   CE 692

- **b'a-la-ma**   4x   CE 745-864

- 70.1% purely logographic

- 99.1% employ logogram

- 28.8% phonetic complement for final /m/

- 0.91% full phonetic spellings

B'ALAM

B'ALAM-ma

—ba
—la
—ma

ʔu-b'ah/B'AH//b'a-hi-li for *u-b'ah-il* 'his/her portrait'

- Common spelling uses sign T757 GOPHER

- Proto-Mayan *b'aʔh 'gopher'

- Used to spell reflex of proto-Mayan *b'ah 'head' perhaps as a CVC syllabogram derived via rebus

- Less commonly spelled with T501 **b'a**

- Suffix -il (< *-iil) 'abstractivizer' to derive 'head' into 'portrait/image'

ʔu-B'AH

ʔu-B'AH-hi

ʔu-B'AH-hi-li

ʔu-b'a-hi

ʔu-b'ah/B'AH//b'a-hi-li for *u-b'ah-il* 'his/her portrait'

- **ʔu-B'AH**   92x   CE 445-812
- **ʔu-B'AH-li**   23x   CE 682-858
- **ʔu-B'AH-hi**   69x   CE 642-879
- **ʔu-B'AH-hi-li**   13x   CE 692-771
- **ʔu-b'a-hi**   18x   Late Classic portable
- **ʔu-b'a-hi-li**   2x   Late Classic portable
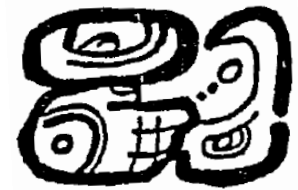- **ʔu-b'a-li**   2x   CE 711-830

ʔu-B'AH   **ʔu-b'a-hi**

- 42% only logogram
- 90% employ logogram
- 42% employ logogram and minimal phonographic information to identify suffix *-il (< -iil)*
- 51.14% underspell *-il (< -iil)* suffix
- 6.9% provide full spelling of suffix

K'AL/k'a-la-ja for *k'a[h]l-aj-Ø-Ø* 'it was closed/wrapped'

- Spells a reflex of proto-Mayan *k'al 'to bind, tie'

- Inflected for 'passive' with *-h-…-aj*

K'AL

K'AL-ja

K'AL-la-ja

k'a-la-ja

K'AL/k'a-la-ja for *k'a[h]l-aj-Ø-Ø* 'it was closed/wrapped'

- **K'AL**   26x   CE 613-881
- **K'AL-ja**   43x   CE 401-879
- **K'AL-la-ja**   19x   CE 472-906
- **k'a-K'AL-ja**   1x   CE 521
- **k'a-la-ja**   4x   CE 743-880
- **K'AL-la**   2x   Late Classic

- 96% employ logogram
- 28% employ logogram *only*
- 48.42% employ logogram and minimal phonographic information to identify suffix *-laj*
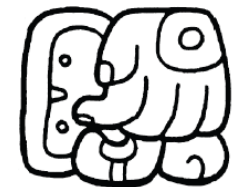- 24.73% spell suffix fully

K'AL   **K'AL-ja**
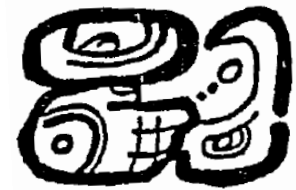
K'AL-la-ja   **k'a-la-ja**

ʔu-cho/CHOK-ko-wa for *u-chok-ow-Ø* 's/he throws/threw it away'

- Proto-Ch'olan *chok 'to throw (away)' (transitive root) (Kaufman and Norman 1984:118)

- Typically inflected with *u-* 'third person singular ergative'

- Takes transitive indicative status suffix (completive in absence of aspect marker) *-V₁w*

  - Final /w/ may have been omissible, eventually disappears leaving proto-Ch'olan *-V₁*

- Takes -Ø 'third person singular absolutive'

ʔu-CHOK
Caracol St, 6

ʔu-CHOK-wa
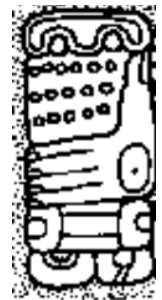Quirigua St. D

ʔu-CHOK-ko-wa
Ixtutz St. 4

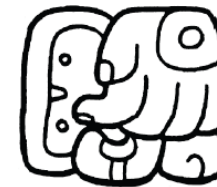# ?u-cho/CHOK-ko-wa for *u-chok-ow-Ø* 's/he throws/threw it down'

- **?u-CHOK**   23x   CE 652-849

- **?u-CHOK-wa**   26x   CE 672-906

- **?u-CHOK-ko-wa**   5x   CE 780-859

- **?u-CHOK-ko**   4x   CE 795-880

- **?u-cho-ko-wa**   6x   CE 652-889

- **?u-cho-ko**   1x   CE 880

- 89.23% employ logogram

- 35.4% employ only logogram (and of course preceding syllabogram for *u-* proclitic)

- 46.2% employ logogram and minimal phonographic information to identify suffix *-ow*

- 16.9% spell suffix fully

?u-CHOK
Caracol St, 6

?u-CHOK-wa
Quirigua St. D

?u-CHOK-ko-wa
Ixtutz St. 4

Comparison

- Whether a noun, transitive verb, intransitive/ized verb, it seems that the logosyllabic spelling with minimal cueing of the suffix is the preferred spelling strategy

  - 'his/her portrait': **42%**

  - 'she threw it away': **47.31%**

  - 'it was bound/wrapped': **48.42%**

- This strategy is convenient:

  - it allows readers to quickly identify the logogram and thus the lexeme

  - the minimal phonographic cue for suffix also is convenient because it requires less processing time of a phonographic spelling

More detailed look

- 46% spelling strategy

  - Logosyllabic

    - Consonant Deletion

    - Phonetic Complementation (if assuming polymorphemic logogram)

dominant strategy

23.32%

?u-B'AH-hi   **?u-CHOK-ko**   **K'AL-la**

?u-B'AHIL-li   **?u-CHOKOW-wa**   **K'ALAJ-ja**

40%   46.42%

Implications and Conclusions

- **Ease/speed of reading** was promoted through **high proportion of logograms** and minimal (but strategic) use of phonograms

- Increasing use of purely phonographic spellings seen in 8th century CE, but still minimal compared to logosyllabic spellings

  - Except for portable texts where phonogram-to-logogram ratio began to increase

- Strategic use of syllabograms to indicate part of a suffix is not the same as "morphography"

  - Whether we're dealing with nouns or verbs, it could be suggested that logograms were polymorphemic and grammatical inflections and derivations were read into the logogram according to the syntactic constraints of a text

  - Partly explicit renderings of grammatical suffixes in this light could be thought of as partial phonetic complementation

  - Fully explicit ones would be akin to full phonetic complementation

- It was a strategy of compromise instead

Implications and Conclusions

- The diachronic patterns could support a polymorphemic logography principle: optional expression of suffixes, whether in part or in whole, whether for nouns or verbs, was unnecessary but probably facilitated disambiguation of possible lexical values (e.g. different inflections or derivations) attributable to the same logogram

- *u-* 'A3' *proclitic* was not omissible (very few plausible cases of its omissibility exist, none unambiguous)

- y- 'A3' *prefix* (whether as *y-* or the reanalyzed form *uy-*) was omissible and interpretable as part of a logogram

- Phonological factors were likely important here too (e.g. in Ch'olan the /w/ of the -V_1w suffix eventually disappeared; in some Ch'olan and Yucatecan languages final /l/ is realized as [l̥] or [h] or Ø)

Future research

- Continue this line of research on Postclassic codices

- Application of quantitative/statistical methods to diachronic patterns

- Investigation of geographic patterns to investigate spread of spelling practices

- Comparison with other scripts

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Semantic determinatives

- Hopkins (1994), Hopkins and Josserand (1999)

- Mora-Marín (2008, 2020)

- 1. Determinatives are applied to logographic value of polyvalent syllabogram/logogram

- 2. Different determinatives may be used for different logographic values of same sign

- 3. A determinative may be used for a different lexical value of a sign ('lord' day sign vs. 'lord' as title)
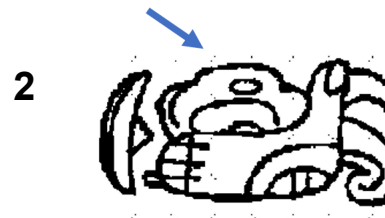
CHOK logogram 'to throw away'

1

ye syllabogram

2

CH'AM 'to hold, receive'

YAL for *y-aal* 'her child'

2

K'AL 'to bind, wrap, close'

K'AB' 'hand, arm'

Allography

- Many allograms for syllabic values and also for logographic values

- Some allograms are graphically related, many are cases of graphically unrelated signs with the same value

  - Example: **?u** (i.e. **?u**, **?u**$_2$, **?u**$_3$, etc.) allograms

Stuart (1990)

Diacritics

- Duplication diacritic

- Stuart (1990), Zender (1999)

- Mora-Marín (2020): perhaps later extended to mean "abbreviated spelling" more generally

10. tsu²-ha for tsu-tsu-ha, *tsuts-ah* "was completed"
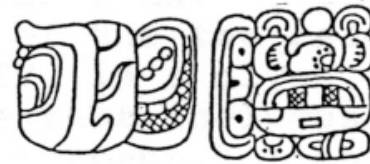
PN : Lnt. 3
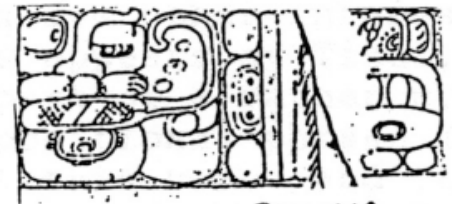
POMONA
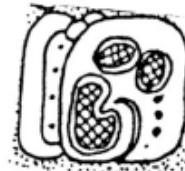
PALENQUE : TFC

Glyph block punctuation

- x axis = time

- y axis = signs per glyph block (blue), words per glyph block (green)

- n = 15 (mostly) randomly selected *complete* texts across three periods (Late Preclassic, Early Classic, Late Classic), 300 BCE-CE 909

- Late Classic divided between portable and monumental texts

- Generally, one word or one syntactic constituent per block

Sign:Block and Word:Block Ratios Over Time

(Legend: ● S:B Ratio, ■ W:B Ratio; x axis categories: LP, EC, LC, LC-Mon)
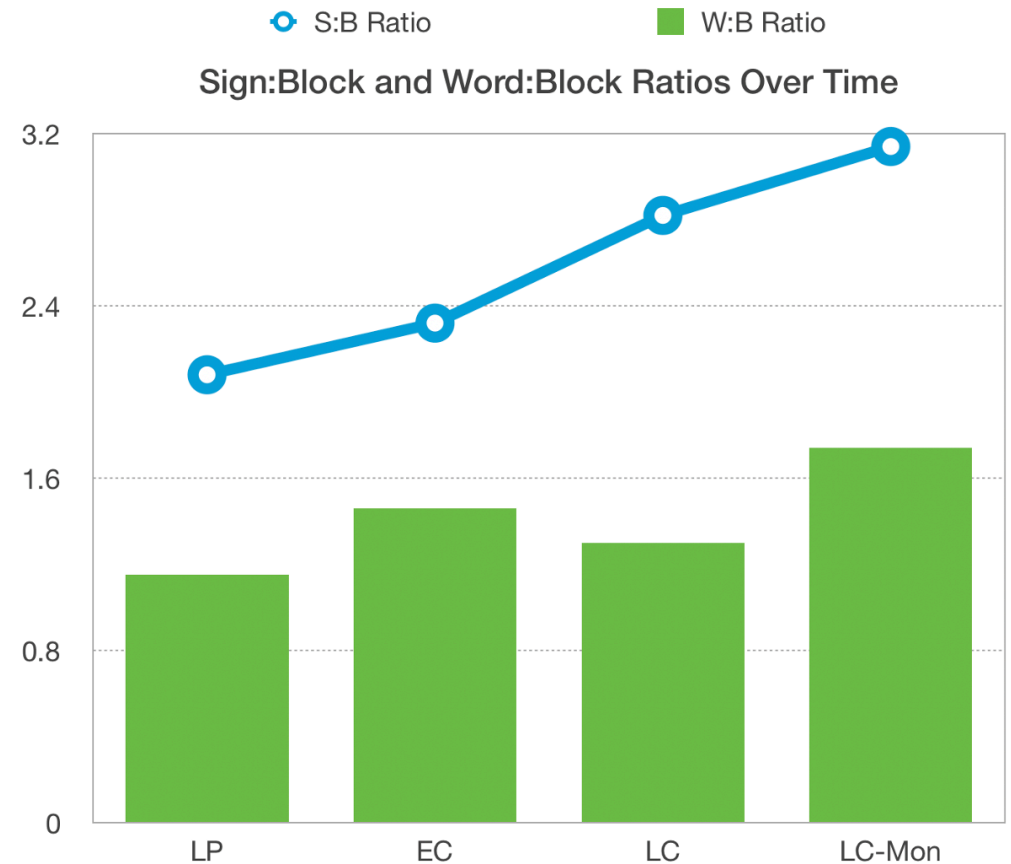
Phonetic extension

- Rebus, acrophony

- Syllabograms were generally derived via **rebus phoneticism** based on the pictorial referents of sourcewords

- Both CV and CVC syllabograms can be accounted for this way

- Often different derivations from different sourcewords led to allography

- Fox and Justeson (1984), Mora-Marín (2003), Kettunen (2018), among others

Simplex, **CV** syllabograms only

ʔa

- ʔ**a**k'ach 'turkey hen'

- ʔ**aa**jaaw 'ruler, king'

- ʔ**ah**k'ab' 'night, darkness'

- ʔ**ah**k 'turtle'

- ʔ**ah**k'ot 'dance'

b'a

- b'**ah** 'head'

- b'**aa**k 'bone'

- b'**ah**lam 'jaguar'

- b'**a**ʔh 'gopher'

- b'**a**ʔtz' 'howler monkey'

b'a
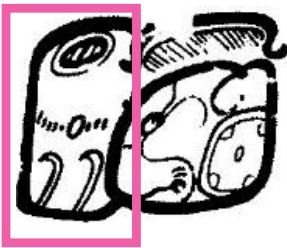
b'a-ka-b'a
*b'ah=kaab' 'head/top of land'

?u-

b'a-

ke-

le

*u b'aak-eel

'the jaguar's bone'

*b'ahlam 'jaguar'

— ba
— la
— ma

K'AN-na-b'a
*k'anal b'a7h 'yellow pocket gopher'

Pottery texts

- Incubators for new graphemes and spelling patterns

- Highly advantageous for decipherment

  1. **?u-tz'i-b'i**

  u-tz'ihb'(-il) 'the writing of/for (him/her)'

  2. **?u-tz'i-b'a-li**

  u-tz'ihb'-al 'the writing of/on (it)'

?u₁

?u₂

?u₁

a

?u₁

?u₃

a

?u₂

c

?u₄

tz'i$_1$

tz'i$_2$

a

b

a

c

b'i₁

b'a₁

b'i₂

b'a₂ (or b'al-li)

b'a₃

b'a₄

b'a₄

li₂

li₁

li₂
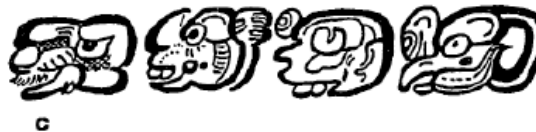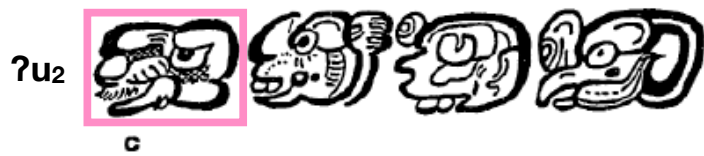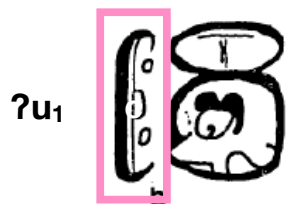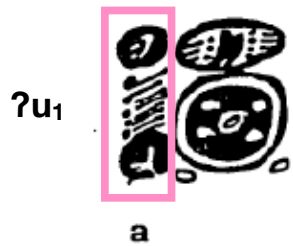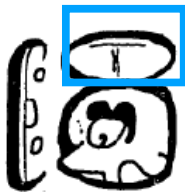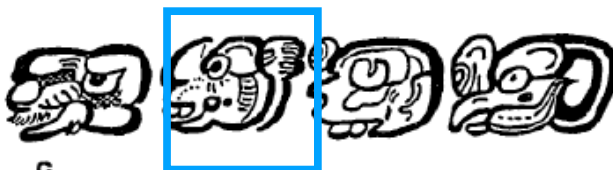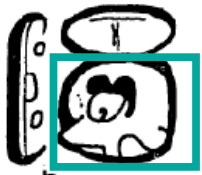
li₂

li₂

Iconographic classifiers

- Hopkins (1994), Hopkins and Josserand (1999), Mora-Marín (2008)

- *Not* semantic classifiers like those find in Egyptian or Hieroglyphic Luvian, for example

- They are iconographic markers on signs/graphemes that bear no relevance to how those signs/graphemes are read in a text

- They merely classify the semantic domain of the pictorial referent of the sign, whatever its orthographic function/value

- They can be of generic reference (e.g. HUMAN, MAMMAL) or specific (e.g. **K'AN** for 'yellow' to mark 'yellow gopher' identity of sign **b'a/B'AH/b'ah**)

Agentive nouns in -om < *-oom

JATZ'OM
jatz'-om
strike-AGENTIVIZER
'striker'
k

JATZ'OM-ma
jatz'-om
strike-AGENTIVIZER
'striker'
l

ja-tz'o-ma
jatz'-om
strike-AGENTIVIZER
'striker'
m

Instrumental nouns

- Context and syntax are also crucial in cases like the use of the logogram for DRINK, which can be read as a verb or as an instrumental noun for 'cup'

yu-ʔUK'[IB'IL]
y-uk'-ib'(-il)
A3-drink-INSTR(-P4)
'his/her cup' or 'the cup for (him/her)'

yu-k'i-b'i
y-uk'-ib'(-il)
A3-drink-INSTR(-P4)
'his/her cup' or
'the cup for (him/her)'

Verbal expressions

- Whether used as parts of nominal phrases (of gods, royalty) or as main verb of a clause

- Possibly based on proto-Ch'olan *sih 'gift' plus addition of -i 'usative/applicative' plus intransitivizer -aj

- sih-i-aj-Ø > sih-y-aj-Ø for 's/he was born'

- Spellings

  - **SIHYAJ**

  - **SIHYAJ-ja**

  - **SIHYAJ-ya-ja**

  - **si-ya-ja**

SIHYAJ

SIHYAJ
-ja

SIHYAJ
-ja
-ya

si
-ja
-ya

Polyukhovych 2012

Verbal expressions

WA?
Copan *incensario*

WA?-la-ja
Yaxchilan Stela 11

- Verb roots cannot occur bare in Mayan languages

- As noted by Houston and Stuart (1994:17, Fig. 17), the verbal expression is lacking explicit spelling of its grammatical suffixes

- Yaxchilan Stela 11 provides a more typical **logosyllabic** spelling

Inalienable nouns with possessive prefix *y-*

yo-to-ti
y-otot
A3-home
'her/his/its home'
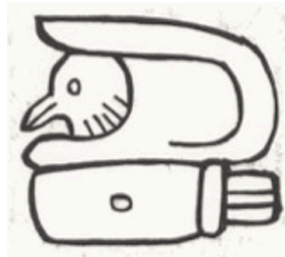
YOTOT-ti
y-otot
A3-home
'her/his/its home'

y-otot 'his/her house/home'

From proto-Mayan *ʔatyooty

Modifiers with *CVC-VI* shape

SKY-GOD

chan-al k'uh 'heavenly god'

CHAN-na-nal-la K'UH

a

b

EARTH-SKY

KAB'-la K'UH

kab'-al k'uh 'earthly god'
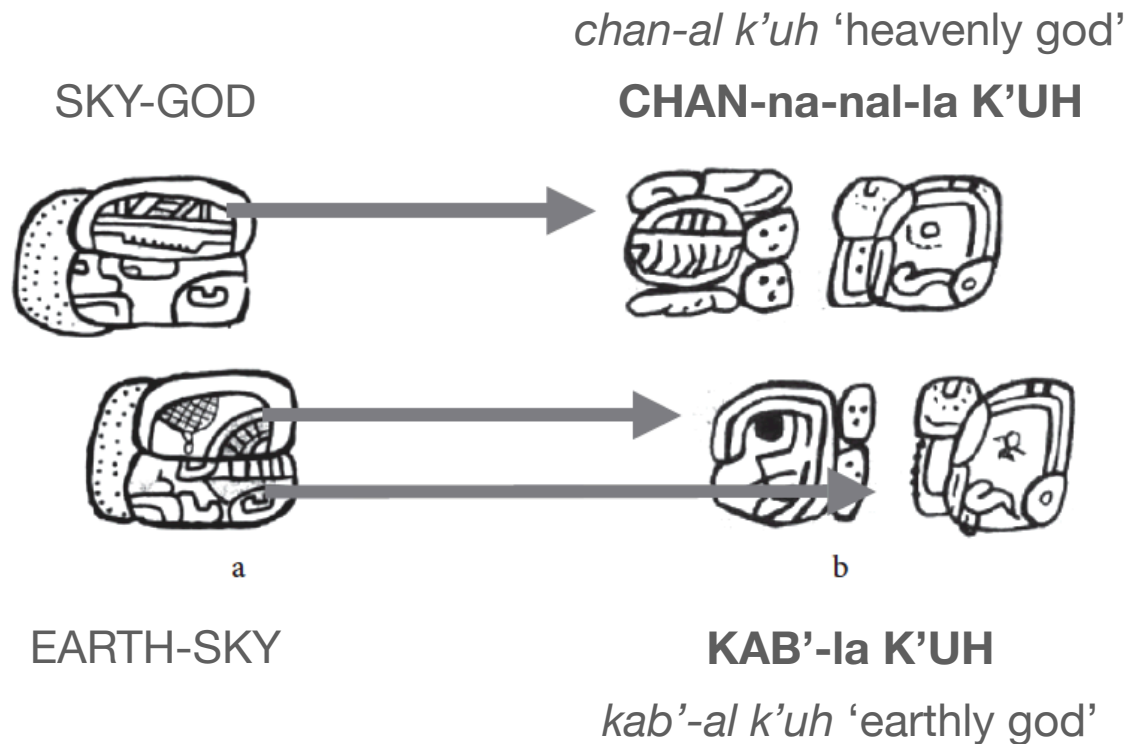
Syntax: modifier + modified

Many modifiers can be derived by means of -VI 'participial' suffixes (from verbs) or -VVI > -VI 'abstractivizer' suffixes (from nouns)

Purely logographic terms on the left

Syntax allows reader to "read" the -VI suffixes required in such a context

More explicit terms on the right

More examples

- Mora-Marín (2005, 2010)

- No need to claim anything special about the seemingly disharmonic spelling: it is simply a case of underspelling of a final consonant

ma-
s<u>u</u>

-la

(?ma/
ka-)?AJAW
-wa

ma

?AJAW

-s<u>u</u>

la

a

b

Both attest to a suffix of the shape *-u(u)l*
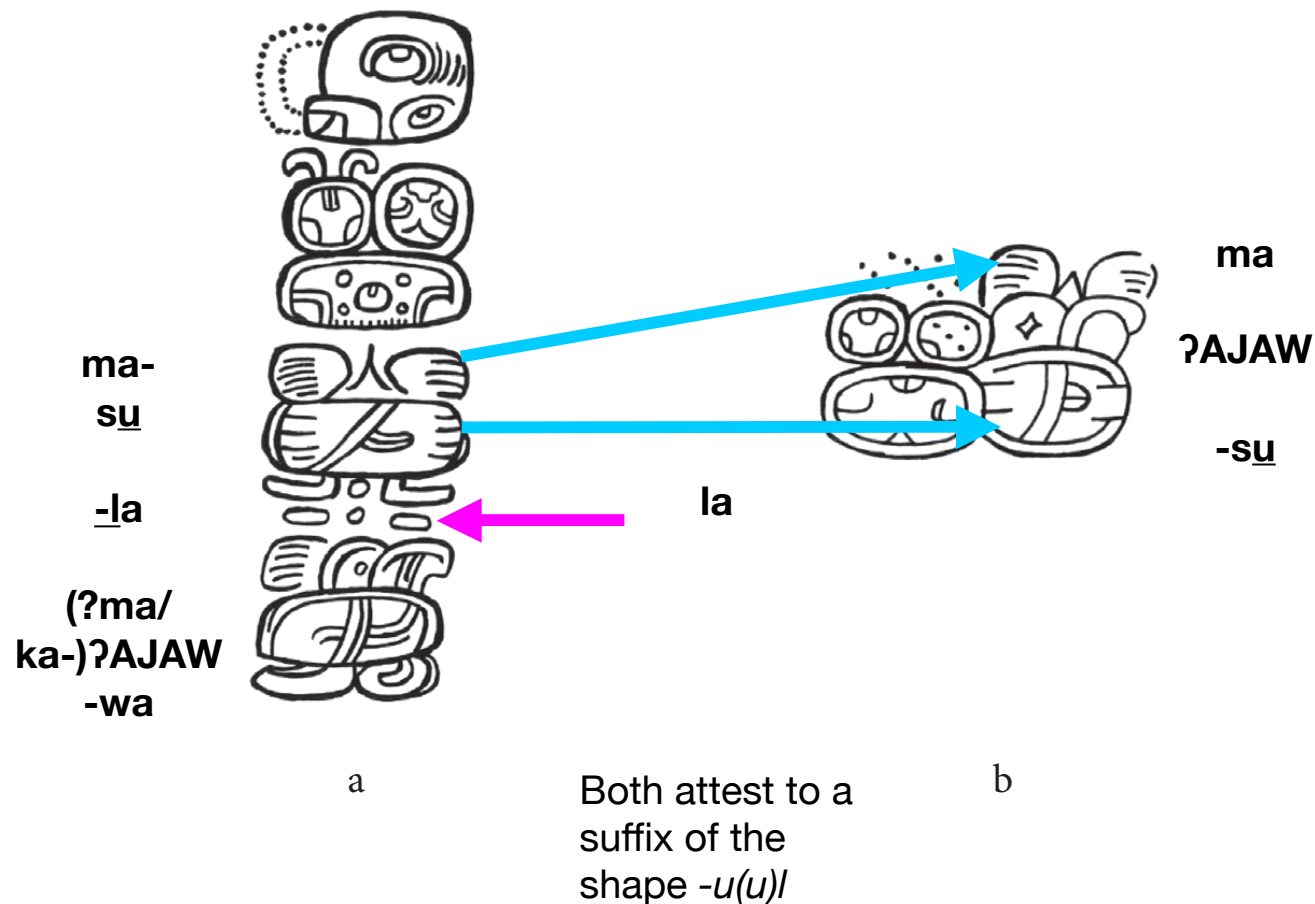
More examples

ʔu-WEʔ-(ʔ)i-b'i
u-weʔ-ib'-il (u-weʔ-b'(-il))
A3-eat-INSTR-P4
'the plate for…'
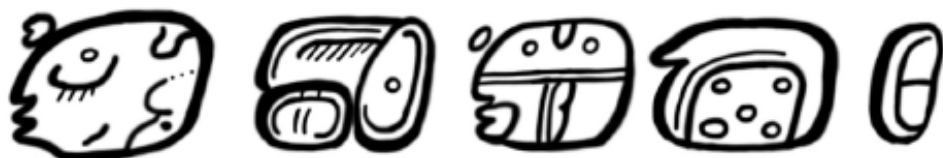
ʔu-WEʔ-ʔIB'/ʔib'-b'i-li
u-weʔ-ib'-il (u-weʔ-b'-il)
A3-eat-INSTR-P4
'the plate for…'

Stone cylinder

- Mora-Marín (2019, 2020)

- See also Houston and Stuart (1998)
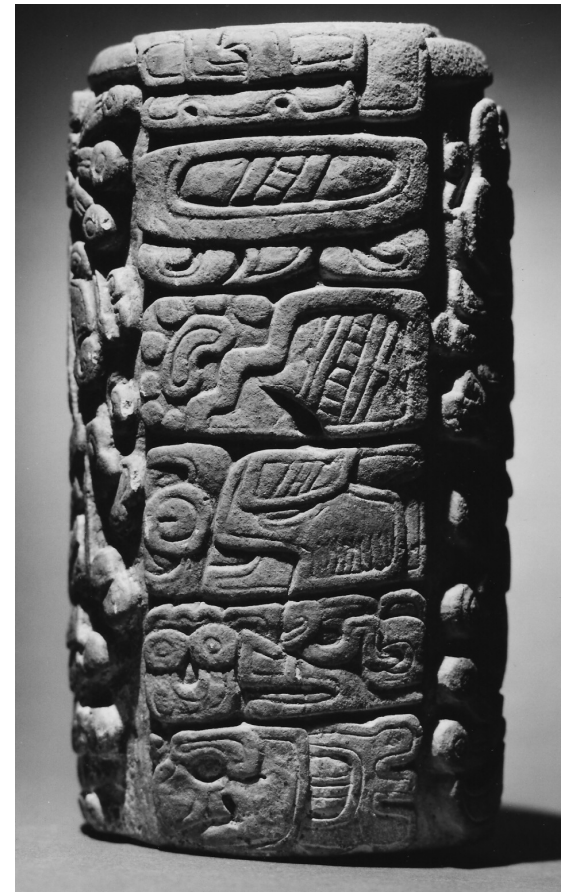
Photo courtesy of Donald Hales

Typical pattern for verbs with -V_1y 'inchoative'

- Typical text with dedicatory verb with -V_1y suffix (cf. Mora-Marín 2007)

Verb uses -*V₁y* 'inchoative' suffix

ʔa-ʔAY(AL)-ya	STEP[yi]-yi	ʔu-tz'i-b'a li

ʔa-ʔAY(AL)-ya   STEP[yi]-yi   **ʔu-tz'i-b'a-li**
ʔay-Ø-al/la(h)   DEDICATE-Vy-Ø-Ø   **u**-tz'ihb'-al
EXIST-3sABS-PARTC/DEMS dedicate-INCH-CMP-3sABS 3sERG-writing-DAT:POSS

'It is the case that his/her writing became "dedicated"'

Syllabogram **yu** links two words
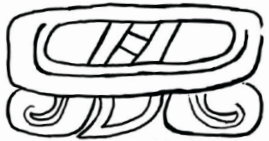
ʔAY-ya
ʔay-Ø
exist-B3

STEP
?-V$_1$y-Ø-Ø
"dedicate"-inchoative-completive-B3

y]u-b'ah/B'AH
u-b'ah(-il)
A3-head(-abstractivizer)

ch'a-?
Proper Name

?-?YAX
Proper name

'It is the case that the portrait of *Ch'a… Yaʔx* became STEPed (dedicated/inaugurated/blessed)'
'The portrait of *Ch'a… Yaʔx* has become STEPed (dedicated/inaugurated/blessed)'

Other cases
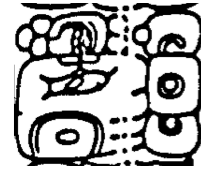
- Several other examples are seen here to be discussed in detail in upcoming paper

- They all use a **Cu** sign as vowel-insertion ligature between two words, the second of which begins with the clitic *u-* 'A3' which typically attaches phonologically to a preceding word within the same phrase (unless *u-* is clause- or phrase-initial)

?HACH-chi-yu

ma-yu-yu

2x

CHAPAT

tu

cha₂

pa

tu

lu[K'IN]

K'IN

pa

Dresden 54b

lu[pa]

Dresden 55b

pa-lu[K'IN]
paal u-k'iin
'its sun is a child'

Vowel conditioned by vowel of typical -V(C)… suffix

- Identified by comparing variable spellings of lexeme in **different contexts with different meanings**

- Mora-Marín (2001, 2005, 2010, 2019)

- Kaufman with Justeson (2003)

- We see

No suffix   With suffix

ʔu-tu-p(a)
u-tuup
3sE-earring
his/her earring

tu-pa-j(a)
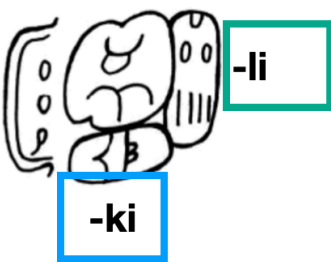tuup-aaj-Ø
earring-IVZR-3sA
s/he/it was adorned

yo-(ʔ)OL(-la)
y-ohl
3sE-middle/heart
his/her middle/heart

ʔo-la-s(i)
ʔohl-as
middle/heart-UNPOSS
(someone's) middle/heart

Vowel conditioned by vowel of typical -V(C)… suffix

- Mora-Marín (2001, 2005, 2010, 2019)

- Kaufman with Justeson (2003)

Actual suffixal/enclitic vowels

- Hofling (1989)

- Hopkins (1997)

- Mora-Marín (2001, 2005, 2009, 2010)

- Lacadena (2004)

- Some cases interpreted by some as fictitious vowels are meant to represent a vowel-initial suffix or enclitic

?u-tz'i-b'a

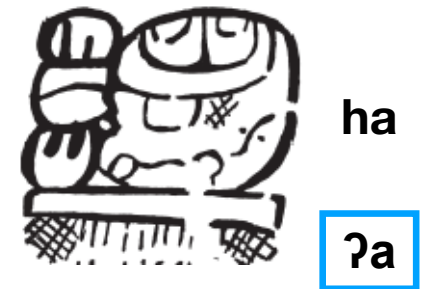u-tz'ihb'-<u>a</u>-Ø-Ø

3sE-writing-<u>APPL</u>-3sA-CMP

she wrote it

tz'i

?u

b'a

ha[?i]

ha

?a

ha?-i

demonstrative-dist.deictic

'that one'

ha?-a

demonstrative-prox.deictic

'this one'

Some examples

ya-la-ji-ya

yä.la.ji

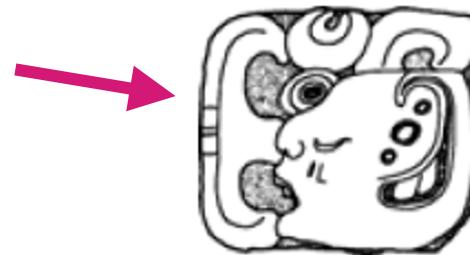y-äl-(a)j-Ø-i

A3-say-PERF-B3-EARLIER
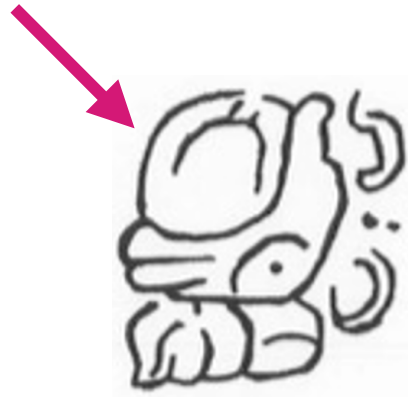
YAL-ji-ya

k'uhtz

tobacco

tzi-K'UH/k'uh
(K'UH/k'uh-tzi)

NAH/nah-wa-ja

na[h]w-aj-Ø-Ø

adorn[PASS]-PASS-CMP-B3

's/he/it was adorned'

Gronemeyer (2011:9, 488-489)