

Writing with an Accent: Phonology as a Marker of Ethnic Identity

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Abstract

A study of the development of phoneticism in Maya hieroglyphic texts is presented. Phoneticism is measured by the number of syllabic signs in proportion to all signs in hieroglyphic texts. Results indicate an average, progressive increase of phoneticism throughout the Classic period, which correlates closely with amounts of innovation in the inventory of syllabic signs as reported by Grube (1990). Yucatan stands out as a region where phoneticism is particularly high. The findings are interpreted in the light of a theory of the evolution of writing according to which phonological transparency is motivated by language contact and made possible by a situation where the expression of regional identities through writing is politically licensed. The higher degree of phoneticism in Yucatan supports this theory inasmuch as a diglossic situation was prevalent in this region.

Resumen

Se presenta un estudio del desarrollo de fonetismo en textos jeroglíficos mayas. Como una medida de fonetismo se contó la proporción de signos silábicos en los textos jeroglíficos. Los resultados indican un incremento de fonetismo durante el período clásico, y se observa una correlación muy precisa con grados de innovación en el signario silábico estudiado por Grube (1990). El grado de fonetismo es más alto en Yucatán que en otras regiones. Hemos interpretado los resultados de la investigación bajo la luz de una teoría del desarrollo de sistemas escriturarias según el cual la transparencia fonológica está motivada por contacto entre lenguas y hecho posible bajo las circunstancias de una situación política que deja los pueblos expresar sus identidades regionales por medio de la escritura. El grado más alto de fonetismo en Yucatán apoya esta teoría, dado la presencia en esta región de una situación de diglosia.

Introduction

As we all know, the Maya writing system is a unitary one. Its orthographic rules are the same throughout the area where writing was practiced, and its basic sign inventory, although it developed over time, was shared among all sites, give or take a few regionalisms. Nevertheless, there is a large amount of variation in preferences with regard to the style of individual signs, the way that they are organized into graphic units, the media on which they are inscribed, the genres of texts that they encode, etc. In this paper we shall look at one such variable, namely the degree of phoneticism. Because of its nature as a mixed script that makes use of both syllabic signs and logograms, the Maya writing system in many cases offers different possibilities of writing one and the same word. A textbook example of such variation would be that of 'jaguar', which could potentially be written with just a single

logogram, as **B'ALAM**, with a combination of logograms and one or more syllabic signs (**B'ALAM-ma**, **b'a-B'ALAM**, **b'a-B'ALAM-ma**), or with syllabic signs only (**b'a-la-ma**). Although all these possible ways of spelling the word for 'jaguar' are equally adequate, they represent different degrees of phonological specification. The fully syllabic spelling specifies all segments as well as the nature of the nucleus of the last syllable. A spelling such as **B'ALAM-ma** only specifies the last of the segments (*m*) and indicates the nature of the nucleus of the last syllable. How can we account for such differences in spelling? While the existence of spelling variants is a natural consequence of the structure of the writing system and need not be explained individually, any larger spatio-temporal patterning in the distribution of spellings would need to be explained as choices - be they conscious or unconscious - on the part of the scribes. In this paper we investigate the quantitative proportion

of syllabic signs vs. logograms throughout the Maya lowlands and throughout the history of the Maya writing system. Our aim is to look for spatio-temporal patterns in the quantitative distribution and to search for explanations that are ultimately sociological in nature.

The investigation relates both to the theme of ethnic identity and to the general theory of writing. We would like to propose a very general hypothesis about the evolution of writing systems according to which developments toward greater phonological transparency are triggered by the either unconscious or conscious wish of scribes to clearly set off their pronunciations of words from other possible pronunciations by speakers of other dialects or languages. Such a need to clearly indicate phonological differences only arises in situations of language contact, most pressingly in diglossic situations where different languages are used by speakers for different purposes. Thus, we believe that what drives a development towards greater phonological transparency of a writing system is ultimately language contact. It is generally recognized that language contact may spur phonological transparency because the need arises to spell foreign words, particularly names (e.g., Justeson 1978:141). However, one does not so often encounter the observation that more transparent renderings of *native* words may also be motivated by language contact (but see Grube 1990:26). While language contact is probably a necessary condition for such a development, it is not sufficient. The socio-political circumstances should also be such that 'writing with an accent' is licensed. In the city-states of Ancient Greece or the petty kingdoms of the Classic Maya it would have been natural to express differences in pronunciations of cognate morphemes in writing, and the writing systems that developed under these circumstances were therefore to a relatively phonologically transparent. However, in large, centralized states that subsume a variety of ethnic groups, such as China, Ancient Egypt or the Aztec Triple Alliance, it would be a disadvantage to have writing systems that are designed to indicate subtle differences of pronunciation. Here the contact among different languages produces the opposite effect, namely writing systems that are relatively opaque phonologically. Our theory of the development of phonological precision in writing systems is opposed to one which assumes that there is an inherent tendency throughout the history of the

development of different writing systems in the world towards the relatively high phonological precision represented by the alphabet. This evolutionistic theory, advanced by authors such as Gelb (1952), Diringer (1962:17), and Huxley (1960:30), is problematical because it fails to offer any explanations for the evolutions observed, and simply stipulates euro-centrally that the alphabet is a highly desirable system of writing and should therefore be the logical endpoint in the evolution of writing. Our point is not simply to attack an outdated theory that has been questioned by several authors before us. We bring it up because there is a grain of truth in the observation that some writing systems may develop towards greater phonological transparency, even if it not a universal tendency. Gelb may have been wrong in his explanation, but to our knowledge no alternative theory has actually been put forward. Instead, his baby has been thrown out with its euro-centric bathwater.

Maya inscriptions offer an opportunity to test our global sociolinguistic theory of writing systems on a local, micro-scale. Since the writing system allows for variation with respect to the degree of phonological transparency of individual spellings we may test whether there is a spatio-temporal patterning in this variation that correlates with degrees of language contact. Although we are very far from knowing everything there is to know about language contact situations in the Classic lowland Maya realm, the research of Lacadena (2000; 2003), Lacadena and Wichmann (2002; n.d.) and Wichmann (2002) has provided some insights. This research will be fundamental as background for the present study.

Methodology

As a simple way of quantifying the degree of phonological transparency in different inscriptions we have counted the number of syllabic signs vs. the number of logograms in a given text. In order to obtain comparability among text which have few calendrical passages and texts where such passages are more abundant, we have excluded from the counts all long counts, lunar series, distance numbers, and calendar round dates. Since the overwhelming majority of the signs in such passages consist of logograms (including bars-and-dots numbers), they would skew the proportion of logograms in comparison to texts having little calendrical data. Signs that are

eroded or remain undeciphered to the degree that it cannot be determined whether they are syllabic signs or logograms are simply excluded from the counts.

When distinguishing between syllabic and logographic signs it is of course relevant how one distinguishes between the two categories. We consider a syllabic sign to be any sign which in one or more occurrences in the hieroglyphic corpus has a syllabic function (however, a sign with phonetically unrelated values as logogram and syllabic sign, such as **TUN/ku**, is obviously not counted as syllabic when it is used as a logogram). We do not reckon with the category of ‘morphosyllables’ proposed by Houston et al. (2001). There is no need presently for us to defend our positions on these matters, since the relevance of the counts are not the absolute numbers of syllabic signs vs. logograms but their relative proportions seen in relation to the date and provenience of a

text. A method of counting which counted as logograms some signs that we consider to be syllabic would produce different absolute figures, but it would show the same tendencies with regard to changes of the proportions in the temporal and spatial dimensions.

Our counts have involved 245 securely provenanced and dated texts and represent the majority of such texts which are available.

For the purpose of studying regional differences in phoneticism the overall division of Sharer (1994) of the Classic Maya realm into three major zones was followed: the Northern Lowlands (here labeled ‘Yucatan’), the Central Lowlands, and the Southern Lowlands. The last was divided into the Lower Usumacinta, Pasión, and Motagua. The sites represented in our counts are listed in Table 1. Parentheses indicate the number of texts included in the counts for each site.

| | |
|-------------------------|---|
| Yucatan | Chichen Itza/Yula (8), Dzibilchaltun (1), Edzna (5), Ek’ Balam (7), Hobomo (1), Kabah (1), Mopilá (1), Uxmal (3), Xcalumkin (13) |
| Central Lowlands | Calakmul (1), Caracol (5), Ixkun (2), Ixtutz (1), Jimbal (1), Naranjo (21), Rio Azul (1), Tikal (16), Ucanal (1), Xultun (1) |
| Lower Usumacinta | Bonampak (6), El Cayo (3), Palenque (16), Lacanja (1), La Pasadita (2), Piedras Negras (3), Tonina (12), Tortuguero (3), Yaxchilan (33) |
| Pasión | Aguateca (5), Arroyo de Piedra (1), Cancuen (1), Dos Pilas (4), Machaquila (7), Seibal (8) |
| Motagua | Copan (32), Quirigua (11) |

Table 1. The geographical subdivision and the sites represented in the corpus studied

| | Yucatan | Central lowlands | Lower Usumacinta | Pasión | Motagua | Total |
|------|---------|------------------|------------------|--------|---------|-------|
| 8.17 | | 42 | | | 20 | 62 |
| 8.18 | | 41 | | | | 41 |
| 8.19 | | 145 | | | | 145 |
| 9.0 | | 304 | | | | 304 |
| 9.1 | | 24 | | | | 24 |
| 9.2 | | 29 | | | 59 | 88 |
| 9.3 | | 15 | | | | 15 |
| 9.4 | | | 123 | | 42 | 165 |
| 9.5 | | 45 | 331 | | | 376 |
| 9.6 | | | | | | 0 |
| 9.7 | | | | | | 0 |
| 9.8 | | 130 | 130 | | | 260 |
| 9.9 | 5 | | 17 | 34 | | 56 |
| 9.10 | | 263 | 47 | | | 310 |
| 9.11 | 9 | | 406 | | 105 | 520 |
| 9.12 | 9 | | 2259 | 309 | 568 | 3145 |
| 9.13 | 13 | 399 | 455 | | | 867 |
| 9.14 | 96 | 414 | 1439 | 100 | 62 | 2111 |
| 9.15 | 157 | 300 | 990 | 232 | 23 | 1702 |
| 9.16 | 307 | 19 | 1448 | 164 | 491 | 2429 |
| 9.17 | 49 | 308 | 515 | 294 | | 1166 |
| 9.18 | 10 | 218 | 357 | 81 | | 666 |
| 9.19 | 6 | 230 | | 87 | | 323 |
| 10.0 | 72 | 55 | 15 | 115 | | 257 |
| 10.1 | 10 | 51 | 34 | 175 | | 270 |
| 10.2 | 1542 | 20 | | 12 | | 1574 |
| 10.3 | 73 | | | | | 73 |

Table 2. Number of signs counted for each k’atun period and area

Due to the limitations of the corpus not all regions and periods are equally well covered. Table 2 shows the number of individual hieroglyphs counted for each of the 5 regions and k'atun periods. While we do not venture to state exactly how many signs it would take for a count to be statistically significant, it is clear that less than 50 is inadequate, even if this is what we have to content ourselves with in some cases. One use of the table, then, is to provide a background for judging the validity of the individual data points resulting from our counts.

Results

The results of the investigation of the overall development of phoneticism are shown in fig. 1. As indicated by the stippled line, there is an overall average increase in phoneticism throughout the history of the Classic inscriptions. Disregarding the earliest points at 8.17-18, which are based on too limited materials to be reliable (see table 2), the increase may be described as neatly step-like with an average of around 40% during the Early Classic period of 8.19-9.2 (416-476 A.D.), around 50% by the transition to the Late Classic (9.4-9.10 or 514-633 A.D.), around 60% during most of the Late Classic (9.11-10.1 or 652-849 A.D.), and around 70% during the Terminal Classic period of 10.2-10.3 (869-889 A.D.).

Not included in the graph are the extremes of the history of the writing system, represented by proto-Classic inscriptions on cave walls and portable objects on the one hand and the codices on the other. A count of the glyphs on a small sample of proto-Classic objects (a jade clamshell from Costa Rica, a jaguar figurine at the Peabody Museum, and the Dumbarton Oaks pectoral) shows a 30.8% proportion of CV signs. If this proportion corresponds to the average, represented by the stippled line, the

inscription should date to the k'atun period 8.11 (around A.D. 265). This dating may be compared with that of paleographic indications suggesting that the texts date to roughly 100 B.C.-200 A.D. The earliest would be the Dumbarton Oaks pectoral, probably falling within the period 100 B.C.-100 A.D. (Davletshin 2003: 109). Obviously we cannot draw too many conclusions from these figures. The sample is very small and at this very early stage it becomes difficult to distinguish syllabic signs and logograms.

A count of some representative sections of Codex Dresden (pp. 2-19 on the affairs of Gods and pp. 65-68 containing the Chak almanacs) shows a 59.9% proportion of CV signs. If the slope of the stippled line in Figure 1 remained constant it should have reached 90% by the time the Dresden Codex was produced (assigning a date around 1500 A.D. as a rough estimate). Instead, the 59.9% phoneticism corresponds to the average of k'atun 9.15. This might suggest that the glyphic texts of the codices relate in different ways to the actual language spoken by the scribes than the Late Classic texts do or that the writing system has somehow stagnated. Another possible explanation for the low proportion, however, is that the codex texts represent a different genre. They are highly formulaic and contain many logograms for the names of gods and auguries. Possibly other kinds of texts, such as historical narratives, would show a higher degree of phoneticism, exhibiting an increase with respect to the Late Classic monumental inscriptions.

We shall now look at whether there are differences in the development in various regions. This is going to be important for our argument that phoneticism is driven by language contact and varies according to the amount of such contact in different regions. The results are shown in Figures 2-4.

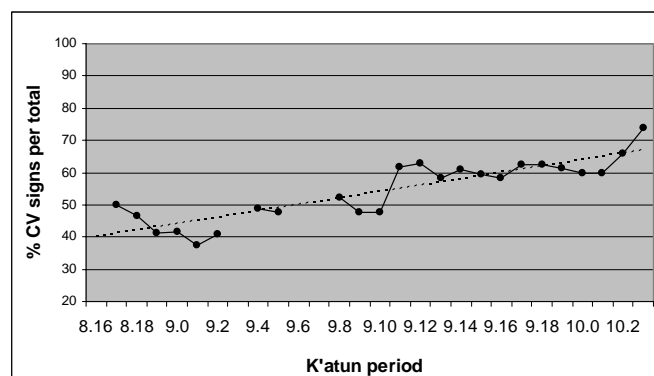


Fig. 1. Overall development of phoneticism during the Classic period

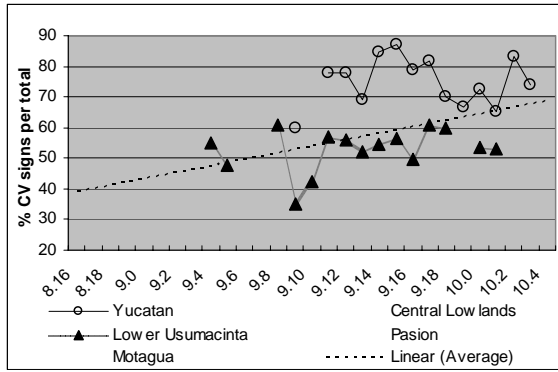


Fig. 2. Regional developments of phoneticism: Yucatan and Lower Usumacinta

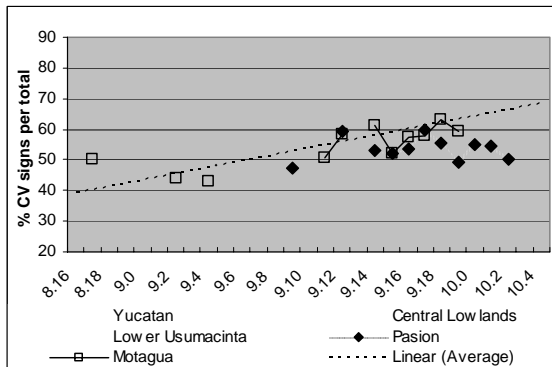


Fig. 3. Regional developments of phoneticism: Motagua and Pasion

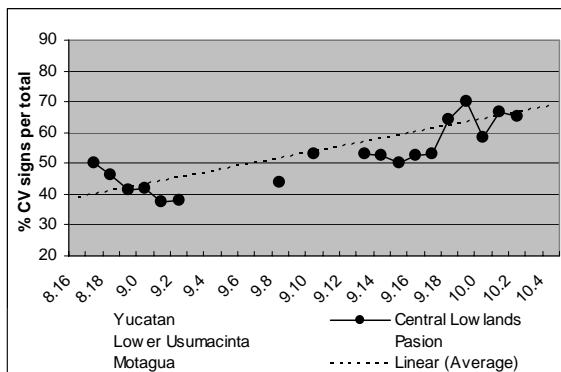


Fig. 4. Regional developments of phoneticism: Central Lowlands

The clearest result of these preliminary probings is that Yucatan has a much higher degree of phoneticism than other areas. Even though the inscriptions date to the latest period of the monumental inscription when phoneticism is also high in the southern lowlands, the northern lowlands still far outdo the south. As regards the three southern regions, there do not seem to be any great differences. The Pasion region overall has the slowest rise in phoneticism. In fact, a linear slope fitted to the Pasion data only shows a 1-2% rise throughout the Classic period. Lower Usumacinta has a slightly steeper slope, and then follows Motagua. It is not clear how

significant these differences are, however. The most remarkable feature of the developments in the southern lowlands is the stagnation in phoneticism in the Late Classic in the Pasion and Lower Usumacinta regions.

For the moment, what we may allow ourselves to conclude is primarily that the northern lowlands stand out as markedly more phonologically transparent due to the greater degree of use of syllabic signs. This is explained by our theory that language contact will lead to a higher degree of phoneticism, provided that the political circumstances allow it. The occurrence of Yucatecan morphological forms in these inscriptions, identified by Lacadena (2000, 2003) and Lacadena and Wichmann (2002), shows that there was a diglossic situation in northeastern and north-central Yucatan. It is remarkable that we see a higher degree of phoneticism exactly in the area where a strong presence of vernacular forms is attested. The diglossic situation would have spurred the greater degree of phoneticism.

This observation is in a good agreement with a well-known observation that some logographs are substituted by fully syllabic spellings in the very late period only, mostly in the texts from northern Yucatan. For example, **cha-na** substitutes for the usual spellings **CHAN** or **CHAN-na** 'sky' (Uxmal, Ballcourt Rings 1-2; 901 A.D.), **t'a-b'a-yi** for **T'AB'-yi** (Ikil, Lintel 1), **k'a-wi-la** for **K'AWIL-la** (Chichen Itza, Casa Colorada; 928 A.D. & Chichen Itza, Monjas, Lintel 2A, 880 A.D.), and **k'a-k'a** for **K'AK'** (Chichen Itza, Casa Colorada).

We may also conclude that both the Central Lowlands and the Lower Usumacinta overall show an increase in phoneticism, even though both areas experience peaks and valleys. Thus, these two areas also make their contributions, relatively great or relatively small at various times, to the overall increase in phoneticism that was illustrated in Figure 1. The developments suggest that the increase of phoneticism is a partly irreversible process. It is only partly irreversible because, as we have seen, there are valleys in the curves and stagnation seems to set in towards the end of the Classic in some regions. The evidence presented nevertheless suggests that there is a kind of inertia at work, keeping the degree of phoneticism constant all else being equal. "All else" are the socio-linguistic factors, which always seem to prompt an *increase* in phoneticism. We might imagine a decrease if the use of phonetic complements was all of a sudden abandoned and if logograms

were always preferred over full syllabic spellings. This could happen if the writing system were used to represent a variety of dialects or closely related languages in a standard, uniform way. But such a situation does not occur and is not expected to occur in the politically fragmented Maya realm.

Comparison with the results of Grube (1990)

In his dissertation, published in 1990, Nikolai Grube also studied the development of phoneticism in Maya writing. This was at a time when the decipherment of individual signs was at its peak, and Grube concentrates on the inventory of signs rather than their frequency in texts. Thus, our approaches differ in a complementary way. Grube's work focused on the inventory of signs, whereas ours focuses on the frequencies of signs. To use a terminology standardly employed in quantitative linguistic studies, Grube focuses on types, whereas we focus on tokens. Specifically, Grube looked at syllabic signs to see whether their share of the total inventory of signs changed over time and whether there were patterns to be observed with regard to periods of innovation of CV signs.

In Figure 5, we compare our figures for the proportion of CV signs with the figures that Grube arrived at for the degree of changes in the inventory of signs in relation to the total inventory of signs for given k'atun periods. Grube's measure of changes is expressed by the variable μ , which is calculated by dividing the sum of new signs and signs falling out of use with the total sign inventory in the immediately preceding period (Grube 1990:41).

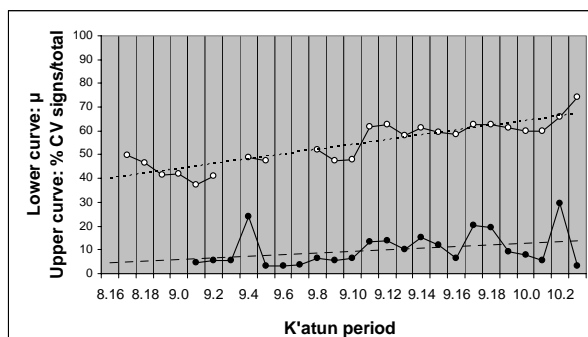


Fig. 5. A comparison of changes in the sign inventory (μ) with overall phoneticism in texts.

A comparison of the two curves reveals astonishing similarities, particularly during 9.8-10.1. Before and after this period we observe major differences relating to the peak in the μ

values at 9.4 and 10.2. It is possible, though, that these peaks are mostly apparent and largely due to the relative scarcity of texts from the k'atun period(s) immediately preceding each of the two peaks. Using the convenient listing of texts and their associated dates in Lacadena (1995) we can determine that roughly around the time of Grube's writing the availability of dated texts from relevant periods was as follows:

9.2: 11 texts; 9.3: 12 texts; 9.4: 17 texts
10.0: 13 texts; 10.1: 20 texts; 10.2: 19 texts

Such a small corpus is not adequate for drawing conclusions regarding developments in the total sign inventory. It is hardly a coincidence that the fit between the two curves is best for the period when the writing system is best documented.

We hypothesize that the close correlation between the degree of phoneticism as measured by the proportion of CV signs and the amount of innovation in the sign inventory indicates that sign innovation relates to an increased attention to phonological representation of the spoken language.

It is not the case that the innovations in the sign inventory relate to the sheer innovation of CV signs. As Grube shows, the proportion of CV signs and logograms in the sign inventory remains relatively constant. There is actually an overall fall from a little over 30% to around 30% CV signs in the inventory if we average over the entire Classic period. Moreover, the total number of signs in the inventory does not change significantly either. Thus, the nature of the writing system stays the same. An investigation worthwhile making would be to count the vocabulary represented for each k'atun period in proportion to the total number of words found in the texts for the given period. Along the lines of Grube's methodology for the study of signs, one would need to look at both changes in the vocabulary with respect to previous periods as well as the overall number of different words attested for each k'atun period. Such an investigation would clarify whether increased phoneticism and innovation in the sign inventory relate to the need to write new lexical items (a question raised by Juliette Blevins, in personal communication). Our educated guess is that this would turn out not to be the case. From the earliest to the latest times monumental inscriptions refer to the same sorts of themes: the lives of rulers, historical events,

and rituals. While new vocabulary items do steadily occur throughout the history of the inscriptions, the amount of changes in the vocabulary may well be constant in proportion to the amount of texts available. Thus, while we do not completely exclude this alternative explanation and encourage others to investigate the matter, our hypothesis is that increase in phoneticism, whether measured as changes in the sign inventory or as increases in the proportion of CV signs in texts, is ultimately due to attempts to increase the phonological transparency of hieroglyphic texts.

Conclusions and prospects for future research

Our investigation has shown that phoneticism increases overall throughout the Classic period. We believe that this increase in phoneticism is prompted by language contact resulting in situations of diglossia. Our best evidence comes from the texts of northern Yucatan where phoneticism is high and where we know that both Yucatecan and Ch'olan are represented in inscriptions. Hieroglyphic Ch'olan would have been a major literary language, whereas early varieties of Yucatecan were mainly used for oral interaction although also sometimes for monumental inscriptions, entering into competition with Hieroglyphic Ch'olan. Thus, the situation is clearly one of diglossia. The use or lack of use of syllabic signs are in most cases probably just to be regarded as scribal habits, but in some cases a scribe would consciously strive to clarify the pronunciation of a word by using syllabic signs. Some renderings of Yucatecan personal and place names provide examples of this, e.g., **'u-ki-ti ka-na-le-ku** (Ek' Balam, Mural of 96 Glyphs, O-P), **'u-k'u-wi cha-CHAN-na cha-ki** (Dzibilchaltun, carved bone), and **ka-la-ke ji-to-TOK'** (Yula, Lintel 1).

While we do not embrace an evolutionistic approach to the diachrony of writing, we grant the evolutionists that writing will apparently not tend to become less phonologically transparent all else being equal. While we can explain increases in phoneticism which are local in time and place sociolinguistically, we need an additional factor to explain why there is an overall increase and not just peaks and valleys in the curve. This additional factor seems to be constituted by a cultural conservatism which maintains conventions no matter whether the

conditions which gave rise to them still pertain or have ceased to exist.

Even though phoneticism increases progressively throughout time in Maya texts, one should be careful about extrapolating this development too far back in time, reconstructing an early stage where syllabic signs were absent or almost absent. We know from the study of the world's writing systems that purely logographic scripts are not attested, likely because such a system would be dysfunctional. One should be equally careful not to extrapolate forward to a situation where logograms fall out of use and a purely syllabic script emerges. Even though late phases of some logosyllabic scripts are known to exhibit a high percentage of phonetic signs - e.g., the Ptolemaic inscriptions of Egypt (Loprieno 2000) - there are no attested cases of a logosyllabic script transforming into a syllabic one.

This investigation is preliminary in several respects, raising new questions in addition to having answered some. One new question relates to the relatively low degree of phoneticism in the codices. A possibility is that at this late point in time, Ch'olan forms pertain to an esoteric, literary language only, unlike the time of Late and Terminal Classic monumental inscriptions of Yucatan, where there is certainly a widespread, active bilingualism involving both Ch'olan and Yucatecan varieties. This hypothesis needs further testing, however. Crucially one would need to investigate whether the Ch'olan forms encountered in the codices could be regarded as representing some Ch'olan variety as it might have been spoken not long before the conquest or whether they better seen as archaisms. It would be worthwhile to make a count of the proportion of CV signs in the Madrid, Dresden, and Paris codices to see whether there is any variation among them or among different sections of each, and then to relate this investigation to phonological and morphological evidence for the languages represented in the texts.

Our suggestions should be tested against other writing systems. As mentioned, our general hypothesis regarding developments toward greater phonological transparency may shed light on the overall difference between scripts that are relatively opaque phonologically, such as those of China, Ancient Egypt or the Aztec Triple Alliance, and scripts that provide for a more transparent rendering of phonology, such as those of the Ancient Greeks or Mayas. Thus,

while there seem to be good prospects for the application of our theory to the range of the world's writing systems, a more detailed application is still a project for the future, and, to boot, a huge project. It would be particularly interesting to look at developments *within* different writing systems, as we have done for Maya writing, but this usually requires a terrifying amount of expertise. Thus, progress in the understanding of the development of writing from the kind of sociolinguistic point of view that we have adopted in this paper will require the collaboration of numerous scholars.

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