

A new look at linguistic interaction in the lowlands as a background for the study of Maya codices

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Introduction

The linguistic affiliation of the Maya codices is still not well understood. The texts seem to contain a mixture of Ch'olan and Yucatecan grammatical elements. Are we dealing with different scribes writing different languages? With scribes mixing up languages? With some sort of lingua franca containing elements from both varieties of Ch'olan and Yucatecan? Or with texts which, in the process of being copied, have been influenced by the languages of the copyists?

This paper does not represent an attempt to answer these questions, only an attempt to describe some aspects of the language situation in the Maya lowlands which are of relevance for solving the puzzles regarding the linguistic identities of the codices.

The first part of the paper contains a brief, updated characterization of the lowland and greater lowland Mayan linguistic areas and some general remarks on the concept of linguistic areas. It is stressed that the very concept of a linguistic area may be misleading, since it suggests a stable entity that has a kind of ontological status. Neither is true: linguistic areas are highly dynamic entities, and the only reality that can be assigned to them consists of local, asymmetrical interactions during certain periods between different pairs of languages. Different languages may interact in different places at different historical periods and different diffused features may have their own, individual

histories even if, *post festum*, roughly similar distributions suggest roughly similar histories. If we want to understand the language situation in the Post-Classic period, then, we need to look carefully at the histories of individual, diffused features, and we need to abstract from what we think we know about prior periods, preparing ourselves for the possibility that the linguistics of the lowlands in the Post-Classic period may have had its own peculiarities.

This approach will be demonstrated by an analysis of the origin and diffusional history of the phoneme *p'*, which represents one of the features said to define the greater lowland linguistic area. A phonological account for its development differing from previous approaches to the problem is suggested. It is also proposed that its introduction into Ch'olan probably does not date earlier than the transition to the Post-Classic. Finally, it is argued that the phoneme may be used as a sort of litmus test for the status of different lowland languages vis-a-vis each other in the Post-Classic. Thus, Yucatecan stands out as a significant innovating group in this period in so far as the phoneme likely has its origin on one or more languages of this group; Ch'olti' appears to be an active participant in the language area in so far as it seems to have borrowed the phoneme; but Ch'orti', somewhat surprisingly, does not have the phoneme, suggesting that this language has become relatively

isolated with respect to the other lowland languages in the Post-Classic, even though (an earlier stage of) Ch'orti' played a major role in Classic-period cities of the eastern lowlands.

Areal linguistics of the Maya lowlands and in general

Justeson et al. (1985) define both an area constituted by the lowland languages and a wider area called the greater lowland linguistic area. The features that define respectively the lowland area and its extension are the following:

The lowland Mayan linguistic area

- Split ergativity with ergative vs. absolutive alignment governed by incompletive vs. completive aspect.
- Most intransitive verbs take a *-l* suffix in the “present tense” (read: imperfective aspect).
- A large class of ‘verbal nouns’, words that, without derivational modification, can be inflected either as nouns or as intransitive verbs.
- A number of suffixes and grammatical particles: *-tal* ‘positional’, *-na* ‘affect verb’, *tuhl* ‘numeral classifier’, *iwaal* ‘progressive aspect marker’.
- A large body of shared vocabulary.

The greater lowland Mayan linguistic area

- *b'* and *p'* contrast phonemically.
- Some causative verbs are formed with a *-t* suffix, others with an *-s* suffix. The stem formatives in *-t* may be a feature that was actually inherited from proto-Mayan, but in a different function, and that acquired

comparable new functions in the greater lowland group.

- Ch'olan, Tzeltalan, and Yucatecan share exclusively a large body of vocabulary.

It would be reasonable to consider the following three Eastern Mayan languages marginal members of the greater lowland area: Q'eq'chii' and the Poqomchii' and Poqomam members of the Poqom subgroup. Q'eqchii' has borrowed heavily from the lowland languages (Justeson et al. 1985; Wichmann and Brown 2003). Poqomam and two easternmost dialects, San Cristóbal Verapaz and Belejú, of Poqomchii' have the *b' : p'* contrast (Malchic Nicolás et al. 2000: 52). As Zender (2004) has shown, Poqom also shares an absolutive suffix *-is* with hieroglyphic Ch'olan. Finally, Poqom languages, perhaps Poqomam to the greatest extent, have some words that are generally restricted to the greater lowland languages, suggesting that these words were borrowed. They include Poqomam *chapaat* ‘centipede’, *ilool* ‘curer’, *r-iis* ‘broth, juice’, *juhk* ‘to rub’, *tun* ‘four hundred’, *ucha* ‘mosquito’, *xisij* ‘gift’, *xiip* ‘tick’, and Poqomam/Poqomchii' *maat'* ‘corn gruel’ *pooch* ‘(a type of) tamal’ *tz'iet/tz'eeet* ‘left’ (see appendix 1 for cognates of these in other Mayan languages).¹

Having given a brief characterization of the lowland and greater lowland linguistic areas we shall now move on to an overview of recent trends in areal linguistics. Although necessarily brief, the overview may perhaps help us to see the linguistic areas of the Maya lowlands in an adequate perspective.

Much general literature has emerged in recent years on areal linguistics. After the concept of linguistic areas was first

proposed by Nikolai Trubetzkoy in 1928 and elaborated by Roman Jakobson (1931) there were for many years only occasional studies directed towards these issues. They included Kristian Sandfeld's (1930) study of the Balkan linguistic area, Murray Emeneau's (1956) of India (or rather South Asia), Jeffrey Heath's (1978) work on Arnhem Land in Northern Australia, and the paper on the Mesoamerican linguistic area by Campbell, Kaufman and Smith-Stark (1986). More recently, several other linguistic areas have been proposed, including the Circum-Baltic area (Koptjevskaja-Tamm and Wälchli 2001, Koptjevskaja-Tamm 2002), Amazonia (Aikhenvald and Dixon 1998), and our own area, Europe (Dahl 1990, Haspelmath 1998). At the same time it is becoming increasingly apparent that the concept of a linguistic area is somewhat problematical (Stolz 2002, Campbell 2002). For one thing, it is not clear how linguistic areas are to be defined or delimited. It can be argued that there are areas as huge as all of Africa or the Pacific Rim since these are just as well defined in terms of shared linguistic features as some of the more classical linguistic areas, and one might even go so far as to argue that in a sense the entire earth constitutes a linguistic area. It is also now becoming clear that there are never single historical explanations that account for any of the known linguistic areas. For these and other reasons it should be borne in mind that a linguistic area is not an ontological entity in its own right, but rather a construct which simply serves the heuristical purpose of identifying linguistic contact phenomena (see Campbell 2002 to that effect). Koptjevskaja-Tamm and Wälchli (2001) (conveniently summarized in

Koptjevskaja-Tamm 2002) have carried out a detailed investigation of the Circum-Baltic linguistic area showing that the various features that constitute this area all have local, idiosyncratic explanations. Instead of 'linguistic area' they prefer to use the term 'contact superimposition zone,' since the Circum-Baltic area is to be likened to a patchwork where many different features for a variety of reasons are superimposed on one another. It is probably true that 'contact superimposition zone' is a better designation for all linguistic areas, but the terminology is not so important as long as we are aware that this is actually what we mean when we talk about linguistic areas.

In the context of Native American languages, Brown (1999: 157, 161) has proposed that a lingua franca may contribute to the creation of linguistic areas. This is a hypothesis which is only rarely seen in studies directed towards other parts of the world. So to judge from the literature the hypothesis should be applied with caution, but it is well worth bearing it in mind.

The general picture that emerges from these various studies of linguistic areas is that the causes are diverse and that there are always diffusions of linguistic features going in various directions and that these directions may change over time as different languages acquire different statuses in the area. Nevertheless, there are generally some languages which seem to contribute more than others to the bundle of shared features. Following the methodology of Van der Auwera (1998), this can be seen by drawing up maps of so-called isopleths, i.e. maps where languages that share an equal (iso-) number (-pleth) of features are marked off similarly. For an

implementation of this method, see Haspelmath (2001: 1505).

If we made a similar map of features shared among Ch'olan, Yucatecan, Tzeltalan, Q'eqchii' and Poqom we would find that Ch'oland and Yucatecan belong to a core area and that Tzeltalan, Q'eqchii' and Poqom belong to the periphery.

The case of p'

The offshot of the above is that linguistic areas are not in themselves very interesting. They do not constitute entities which are greater than the sum of their parts. Nor do they carry any explanatory force. Since different features often have individual histories and extensions, the diffusion of a given feature within an area is not explained by the area within which it diffuses. Moreover, when applied as a sociolinguistic model for language contact, the model of a linguistic area suggests a situation where a whole group of languages participate on equal terms in a linguistic exchange. This, however, is a very unlikely situation. In real life linguistic diffusion takes place in an asymmetrical situation between pairs of languages of unequal status. What this means is that we can only expect to gain insight into the real history of a linguistic area if we study the diffused features one by one and the trails of their diffusion step by step. In this paper, then, we shall zoom in on one of the features of the greater lowland area, the new phoneme p' (an ejective, voiceless, bilabial stop). For the present, we choose to limit ourselves to the study of just this feature. There are two reasons to take a special look at p' . The first is that it has a rather surprising distribution, being absent from Ch'orti' but probably present in Ch'olti'. The second is that we need to know more about this phoneme in order

to know what to expect from the hieroglyphic inscriptions. Can we expect the phoneme to occur in the Classic-period inscriptions or perhaps in the codices? Or perhaps not at all? In other words, should our syllabary for Maya writing or for part of the history of Maya writing leave space for an extra column? The phoneme is found in all of Yucatecan, in Western Ch'olan, probably in Ch'olti, in Tzeltalan, in Poqomam, and, as mentioned earlier, in the eastern dialects of Poqomchii'. It is not found in Q'eqchii' and Ch'orti', or better said, there is no contrast between an implosive b' and an ejective p' in these two languages.

First a few words about its origin. The development of the new sound has so far resisted straightforward explanation. Kaufman and Norman (1984: 85) state that Greater Tzeltalan and Yucatecan share the innovation of a contrast between b' and p' . They note that p' occurs both in initial and final position, roughly with the same frequency. Regarding the possible phonological contexts that could have given rise to p' they observe that "with the exception of $p'ch$, all the roots in which $/p'/$ occurs contain one of the apical consonants $/t s l n ch x/$. However, $/b'/$ also occurs in roots that contain apicals . . ." (1984: 85). Apparently, the conditions for the sound change from the implosive b' to the ejective p' can be stated, but there are also many cases where b' should have changed because the conditions are as stated, but fail to do so. There are two reasons why the picture is so unclear in the account of Kaufman and Norman (1984). One is that they restrict themselves to looking at Ch'olan data although they recognize that the innovation is shared by Greater Tzeltalan and Yucatecan. Another reason is that

they mainly look at the distribution of *p'* in the set of reconstructed proto-Ch'olan forms at large. It is likely, however, that the phonological context that gave rise to *p'* is more restricted than the contexts in which it is found in the shared Ch'olan vocabulary. Once the phoneme was in existence it could presumably occur in newly formed lexical items in phonological contexts different from the ones that originally licensed its creation. Thus, in order to trace the origin of the phoneme one should concentrate on items that have cognates in languages other than Greater Tzeltalan (and Poqom). In this regard the dataset of Kaufman and Norman was too limited since they were able to trace only three items back to proto-Mayan, namely **p'*us - 'piled up' (as occurring in the compound **p'*us-pat 'hunchback') < pM *b'*us, **p'*is 'measure; weigh' < pM **b'*is, and **läp'* 'sticky' < pM **lab'*. These three forms allow for the meagre conclusion that "[s]ome instances of /*p'*/ come from earlier /*b'*/, some from /*p'*/..." (Kaufman and Norman 1984: 85), but they are not sufficient to identify the phonological contexts that gave rise to the new phoneme.²

As the database has augmented we can get closer to discerning the origin of *p'*. I have searched the database of Wichmann and Brown (in preparation) for all Greater Tzeltalan or Yucatecan roots containing *p'* that have cognates beyond these two subgroups (for lack of data the Poqom languages have only been cursorily investigated). Table 1 shows reconstructed forms and the shapes of the roots in individual greater lowland languages. Full documentation, including cognates in non-greater lowland languages, is given in appendix 2. There are different ways to state the environments licensing *p'*. The narrowest state-

ment would mention only the exact environments attested and the exact language groups where the change took place in the given environment. Obviously, the narrowest statement gives less counterexamples. But a narrow statement excludes a possibility of making significant generalizations that have an explanatory force. One could broaden the statement but make two different statements, one describing **b'* > *p'* and another describing **p* > *p'*. Or, alternatively, a statement for **b'*/*p* > *p'* in initial position and another for **b'*/*p* > *p'* in final position. It turns out, however, that the kinds of consonants that may occur in the root along with the bilabial turning into *p'* are much the same throughout Table 1. So a general statement like the one below seems warranted:

CONDITIONS FOR THE RISE OF THE
BILABIAL EJECTIVE (PRELIMINARY
STATEMENT)

**p* and **b'* become *p'* in CVC roots where the other consonant is either a fricative /*s*, *j*, *h*/, a stop /*t*, *ch*, *k*, *ʔ*/ or a lateral /*l*/ (and where V may be any type of nucleus).

The next step would be to search through comparative databases for exceptions to the 'rule'. There are many exceptions to the 'rule' just stated. The exceptions are in fact too numerous to be listed here. Many can be found by simply going through the cognate sets in Brown and Wichmann (2004: 166-183).

Exceptions will be found among the reflexes of the following reconstructions: **b'*aj 'to nail', **b'*aj- 'interrogative morpheme', **b'*aty 'hail', **b'*a'h 'gopher, mole', **b'*aal 'brother-in-law', **b'*aaq 'bone', **b'*Ah 'first', **b'*Aty, **b'*ehl 'to carry', **b'*Eh 'road', **b'*oq 'to uproot', **ch'*i'p 'youngest child', **haa'*b' 'year', **jap* 'to open (mouth)',

Table 1. Etyma for forms that contain *p'* in one or more greater lowland languages

*CVb' > CVp'	*b'VC ₁ > p'VC ₁
(none)	*b'is > p'is (Yuc, Mop, Itz, Chl, Chn, Tzo) *b'ehj > p'eh (Yuc, Mop, Chl) *b'o'l > p'o(l)l (Chl, Tzo, Tze) *b'ol > p'ol (Yuc, Mop, Tzo, Tze) *b'us > p'us (Yuc, Cht, Tze, Pqm)
*C ₁ Vp > C ₁ Vp'	*pVC ₁ > p'VC ₁
*kup > kup' (Yuc) *lip > lip' (Tze) *sep > sep' (Itz, Chl, Tzo) *sip > sip' (Yuc, Mop, Itz)	*pich > p'ich (Chl, Cht) *pa'j > p'ah (Chl, Tzo) *paak > p'a(a)k (Yuc, Lac, Mop, Itz, Cht) *po' > p'o' (Chl, Chn) *puu's > p'u's (Yuc, Lac, Mop, Itz)

*jeb' 'to open, pour out', *kab' 'earth, land, world', *kaab' 'bee, honey', *lojb' 'digging stick', *luhb' 'to fall, to be tired', *ojb' 'cough', *pa'hj 'sour', *paq 'to fold', *paat 'back, shell, house', *peq 'toad', *peehty 'circular, to make round', *pohq 'to singe, toast, roast', *pojs 'dust, powder', *poohl 'to fry, to burn', *poohl 'head, forehead', *poohs 'bubbling, steam, steam bath', *qeeb' 'belch', *sehb' 'rapid', *tyuhb' 'to spit', *xee'p 'tamal with bean filling', *xihb' 'male'. In all of these, a *b' or a *p should go to *p'* in Greater Tzeltalan or Yucatecan reflexes, but fail to do so. An inspection of the larger database of which the cognate sets in Brown and Wichmann (2004) represent a mere selection, shows that there are about 150 cognate sets containing Yucatecan or Greater Tzeltalan reflexes which should have changed a *b' or *p to *p'* in order to comply with the above 'sound law', but which fail to do so. Moreover, it does not appear to be the case that some language groups have fewer irregularities than others. The irregularities are found everywhere in roughly the same amount.

Apparently we are dealing with a rather peculiar sound change. I believe, however, that we can make some sense of it by changing the formulation of the conditioning factors. If we look at the conditions under which the sound change does *not* take place it begins to look more natural from a phonological perspective. By subtracting the set of consonants that may occur with *p'* from the total set of consonants in Yucatecan and Greater Tzeltalan languages, it is seen that the innovation of *p'* does not occur in CVC roots where the other consonant belongs to the set /p, t', tz', ch', k', b', m, n, y, w/. That is, *p'* fails to arise when the other root consonant is either a voiceless bilabial stop, a glottalized stop or – with the exception of *l* – a voiced consonant. In recent phonological theory glottalized and voiced consonants are often treated as forming a natural class (something which is formally recognized by ordering the features [constricted glottis] and [voice] under a 'laryngeal node' in feature geometric representation, cf. Clements and Hume 1995: 269-270). This would explain the blocking of

*b'/*p > p' in the environment of voiced consonants as being dissimilatory in nature, just as the blocking of *b'/*p > p' in the environment of a voiceless bilabial stop *p* is also obviously dissimilatory in nature. The occurrence of the sound change in the environment of *l* remains problematical, given that *l* is a voiced consonant. However 'liquids' like *l* and *r* often pattern in languages in unique ways, so I consider the fact that *l* does not block the sound change a minor problem.³

In summary, we get a better grasp of the sound changes involving the new *p'* phoneme if we state the conditions as follows:

CONDITIONS FOR THE RISE OF THE
BILABIAL EJECTIVE (FINAL
STATEMENT)

*p and *b' optionally become *p'* in CVC roots unless the other consonant is a voiceless bilabial stop, a glottalized stop or a voiced consonant (other than *l*).

This rule is natural and without exceptions. It is of course without exceptions because of the word "optionally." Still, it does absolutely exclude that a greater lowland word in which a *p'* co-occurs with a voiceless bilabial, glottalized or voiced consonant (other than *l*), could be inherited from earlier Mayan stages.

Even though we have shed some new light on the origin of *p'*, we still have not explained it. We have treated the sound change as a spontaneous one not triggered by anything in the phonological context, only sometimes blocked. The hypothesis is that any *b'* or *p* could turn into *p'* except when circumstances hindered this from happening. Why the change should happen is left unexplained. Campbell (1996) makes an attempt to explain the sound changes involving *p'* as at least partly regular, but

also notes that the changes not explained by his-flawed⁴-regularities could be due to onomatopoeia or affective symbolism. I would explain *all* occurrences of *p'* as due to spontaneous changes, whether to do with onomatopoeia, affective symbolism or simply a wish to increase the articulatory expressiveness. Thus, my disagreements with Campbell's proposed regularities (see note 4) only mean that I agree all the more with his general point, which is that sound changes can be spontaneous. In traditional comparative linguistics it is taken for granted that sound changes need to be phonetically conditioned and there is no place in the theory for the possibility that speakers themselves may choose to change their languages. Even though historical linguists are now beginning to address these issues open-mindedly (e.g., Blust, in press, and Milroy 2003) it is hard to come by really good examples, like the one concerning *p'*, that straightforwardly suggest both that phonetic conditions may sometimes be absent and that speakers sometimes have a choice.

We have now established that a new phoneme *p'* came about in the greater lowland languages as the result of a spontaneous sound change from *b'* and *p*. We must then go on to address the questions of when and where this change first took place. Kaufman and Norman (1984) and Campbell (1996), with their exclusive focus on Ch'olan, lead us to believe that the sound change was a proto-Ch'olan innovation. I wish to contest this hypothesis.

In order for *p'* to be reconstructable for proto-Ch'olan, we should expect it to appear in all four Ch'olan languages. It clearly occurs in Ch'ol and Chontal (the data in appendix 2 alone would suffice to establish this). Now let us go on to look

at Ch’olti’, where identifying the contrast is more difficult due to the nature of the available data. There are a number of cases where forms containing *p’* in Yucatecan are shared with Ch’olti’ but not with other Ch’olan languages,

suggesting that Ch’olti’ has borrowed these forms. The following is a list of these possible borrowings. I cite the Ch’olti’ forms in Morán’s original orthography:

Table 2. Possible Ch’olti’ borrowings containing *p’*

Ch’olti’ form	Meaning	Cognates in greater lowland languages
<pece, petze>	‘cortar cabello’	ITZ <i>p’e’es</i> , YUC <i>p’é’es</i> , LAC <i>p’e’s</i>
<map>	‘nudo’	MOP <i>maap’</i>
<paac>	‘tomate’	MOP <i>p’ak</i> , ITZ <i>p’ak</i> , YUC <i>p’Bak</i> , LAC <i>p’Bk</i>
<pa>	‘polilla propiamente’	YUC <i>x p’ah</i>
<palbi>	‘destorcer’	TZO <i>p’al</i> , MOP <i>p’äl-</i> , ITZ <i>p’äl</i>
<pati>	‘dejar’	MOP <i>p’at-</i> , ITZ <i>p’ät</i> , YUC <i>p’at</i>
<pen>	‘fornicio’	YUC <ppen> ‘coire, pecar con mujer’
<pentac>	‘esclavo’	YUC <i>p’entak</i> ‘esclavo comprado o vendido’
<pilpilna vut>	‘parpadear’	ITZ <i>p’il</i> , YUC <i>p’il</i> , LAC <i>p’iir</i>
<po>	‘laver’	MOP <i>p’o’</i> , ITZ <i>p’o’</i> , YUC <i>p’o’</i> , LAC <i>p’o’</i>
<puyu>	‘desmenuzar’	MOP <i>p’uy-</i> , ITZ <i>p’uy</i> , YUC <i>p’uy</i>
<zupul bihil>	‘sendero’	ITZ <i>suup’</i> , YUC <i>suup’</i>

As can be seen, the segment that corresponds to the ejective *p’* in Ch’olti’ is consistently represented with a <p> in Morán’s orthography. This makes it possible that the sound was actually borrowed into Ch’olti’, because it is differentiated from *b’*—represented as in Morán.

Turning to the fourth language, Ch’orti’, we note, as mentioned earlier, that no contrast between an implosive *b’* and an ejective *p’* occurs here. Thus, in this language there is only one phoneme where Western Ch’olan has two. Wisdom (1950) consistently renders this

phoneme with a “ p’ ” symbol, while publications from the Proyecto Lingüístico Francisco Marroquín—e.g., Pérez Martínez et al. (1996)—consistently render it with a “ b’ ” symbol. The phonetic character of the sound is not so important. What matters is that there is phonologically no contrast among two different bilabial stops with a glottal component.⁵ This means either that Kaufman and Norman (1984) were in error when they reconstruct the ejective **p’* for proto-Ch’olan or else we have to assume that the contrast was lost again in Ch’orti’. Kaufman and Norman do not

explicitly say that the contrast was lost in Ch'orti', although this is a necessary supposition if the phoneme *p' is to be reconstructed for proto-Ch'olan. I find it very unlikely that a phoneme which is relatively recently created and is enjoying a still ongoing spread throughout the vocabularies of the greater lowland languages, should already have been lost again in Ch'orti'. Thus, I consider it a more likely hypothesis that the sound did not occur in proto-Ch'olan. This leaves Tzeltalan, Yucatecan, and Poqom as the potential language groups where *p'* could have originated, and we should decide on which one of the three is the most likely candidate.

In the collection of cognate sets of Brown and myself there are about 100 sets where words having *p'* occur. In 71% of these sets these are Yucatecan forms, in 47% of the sets there are Ch'olan forms, and in 26% of the sets there are Tzeltalan cognates (for Poqom we still lack sufficient data). This indicates that at some early stage corresponding roughly to proto-Yucatecan or proto-Tzeltalan, *p'* emerged. But it would have been more frequent in Yucatecan than in Tzeltalan. This suggests that the phoneme originated in Yucatecan, a hypothesis which fits the general picture that Tzeltalan is more of a receiver than a donor with respect to greater lowland linguistic features. Poqom is unlikely as a donor since it is only a marginal player in the greater lowland area.

Having suggested an answer to the place of origin of *p'*, we may now approach the problem of dating the innovation. The fact that the phoneme does not occur in Ch'orti' not only means that it was absent in proto-Ch'olan times, but even that it was absent in proto-Eastern Ch'olan times. There is some evidence

to suggest that Eastern Ch'olan began to split up already during the Late Classic. Wichmann (2002) notes some features from inscriptions of the Late Classic with distinctive Ch'orti' signatures, including a verbal form *su[h]saj* from Copan Stela A. Copan Stela A is dated to 9.15.0.0.0 (AD 731), so this is probably the time around which Eastern Ch'olan began to break up. Thus, by the transition to the Terminal Classic, at the earliest, the sound change that had originated in proto-Yucatecan or pre-proto-Yucatecan could have begun to diffuse into the Eastern Ch'olan realm. It is possible that the sound change reached Western Ch'olan earlier, but no earlier than the break-up of Western and Eastern Ch'olan—dated epigraphically by Lacadena and Wichmann (2002) to around the mid-fifth century. It is also possible that the sound change did not reach Ch'olan languages until around 1000 AD, which is the time of the breakup of proto-Yucatecan according to the glottochronological estimates of Kaufman (1974a).

The presence of Ch'orti' features in the inscriptions identified in Wichmann (2002) was surprising since Ch'olti' could conceivably be considered the direct ancestor of Ch'orti'.⁶

It is impossible to uphold a view that Ch'orti' is a direct descendant of Ch'olti' when Ch'orti' has innovations in common with the language of Late Classic inscriptions that are not shared with Ch'olti'. Instead, it has to be assumed that there were different eastern Ch'olan dialects already in the late Classic, one of which eventually gave rise to Ch'orti', and the other of which gave rise to Ch'olti'. The little investigation of the history of the *p'* phoneme adds something to this story. And again the findings are surprising. It

appears to be the case that this phoneme, which is a strong diagnostic marker of the greater lowland linguistic area, is not found in Ch'orti', the ancestor of which was a major player in the linguistic make-up of Classic inscriptions.

The picture emerges of an isolation of Ch'orti' speakers from the greater lowland zone of linguistic interaction from around the time of the Terminal Classic. Ch'olti', on the other hand, seems to play a significant role in the Post-Classic. In Wichmann and Brown (2003) my coauthor and I looked at borrowings into three Mayan languages from other Mayan languages. The cases we studied were Ixil, Q'eqchii', and Chicumuceltec. We noted with respect to the many borrowings into Q'eqchii' that Ch'olti' seems to have played a special role:

Among all of the possible Ch'olan donors, the Eastern Ch'olan language Ch'olti', now extinct and known only from seventh-century documents, seems to have contributed a disproportionately large number of loans to Q'eqchii'. This large proportion is especially remarkable in light of the fact that we possess only very limited lexical data for the language. Ch'olti' forms appear fifty-nine times in the list of candidates for the origins of the 134 possible Mayan-language loans into Q'eqchii'. Speakers of Q'eqchii' and of Ch'olti' would have been linguistic neighbors before the latter language became extinct, so the apparently great contribution of Ch'olti' is not surprising (Wichmann and Brown 2003: 69).

Again the picture that one might have of Ch'olti' as the 'older' and Ch'orti' as the 'younger' language is turned on its head. In Wichmann (2002) I found that the apparently 'younger' one of the two actually played a greater role early on, in the Classic, and now we find something that corroborates this picture, namely

that the supposedly 'older' Ch'olti' plays a greater role *later on*, in the post-Classic. This is the time when Ch'olti' participated in the diffusion zone involving the phoneme *p'*, and in all likelihood Ch'olti' was also involved in donating loanwords to Q'eqchii' during this period. The above is intended to demonstrate the value of looking at individual features, time periods, and languages, rather than to concentrate one's efforts on assembling ever more evidence for the existence of a linguistic area. The really useful information is to be gleaned from the behavior of the individual features of the bundle, whereas the bundle itself is not particularly interesting.

Epigraphic ramification of the case of *p'*

The consequence of the non-occurrence of *p'* in proto-Ch'olan for our interpretation of the Maya script is that we should not expect a column of **p'V** syllabic signs to occur in the writing system used in most of the Classic period. Potentially, some Late Classic inscriptions of the western part of the lowlands and some Terminal Classic inscriptions of the eastern realm could contain words with **p'V** signs in them, but the likelihood is not great.

On the other hand, such signs could occur in Yucatecan inscriptions of northwestern Yucatan or in the post-classic codices. We should not be surprised if these signs would bear formal resemblances to **pV** or **b'V** signs since it is a common feature of the evolution of writing systems that signs for new sounds are derived from older signs representing phonetically related sounds.

Conclusions

The picture that is beginning to emerge of the greater lowland linguistic area bears some resemblances to the European linguistic area. According to Haspelmath (2001) it is difficult to trace the origins of this area since there are many factors involved. Nevertheless, he assumes that a major factor explaining some of the diffusion may have been the great migrations. As far as the *p'* diagnostic is concerned, this feature seems to be associated with the Maya parallel to the European period of migrations, i.e. the post-Classic, where the political situation changed radically, probably with migrations as one consequence. Whereas directions of linguistic diffusion would probably have been rather stable in the Classic, with Ch'olan influencing other languages in the area due to its high prestige, things are shaken up in the post-Classic, and languages begin to influence each other in more multilateral ways.

It is in this linguistic context that we should see the hieroglyphic codices. The apparent mixture of Yucatecan and Ch'olan traits is not surprising, given that the political situation would have opened up for more interaction among languages of these two groups. A possibility that should be tested is whether there is actually a unitary lingua franca involved such that the apparent mixture is inherent to the written language itself or whether different languages are represented as suggested by Wald (2003) and Lacadena (1997). An important hypothesis that also emerges from the preliminary probings presented here is that while Ch'orti' is the modern language that most resembles the Classic-period Ch'olan inscriptions, we might expect to find that Ch'olti' gains special relevance when it

comes to looking at the post-Classic codices.

Appendices

The list below indicates language abbreviations and the major sources used in the appendices. When the source for a given linguistic form is one from the list, the reference is not given following the cited form; when the source is different it will be indicated by an overt reference following the cited form. Glosses for individual forms cited are only given when they differ from the gloss heading a cognate set. Sources where the phonological interpretation is not certain are cited in original orthography, indicated by < >. Barrera Vásquez (1980), Kaufman (2003), and Dienhart (1989) are secondary sources and indicate their primary sources; these primary sources, however, are not indicated here.

Aka	Akateko	Andrés et al. (1996)
Awa	Awakateko	López Pérez et al. (1999)
Chl	Ch'ol	Aulie and Aulie (1996)
Ch'r	Ch'orti'	Wisdom (1950)
Cht	Ch'olti'	Morán (1695)
Chu	Cluj	Felipe Diego (1998)
Hua	Huastec	Larsen (1955)
Itz	Itzaj	Hofling and Tesucún (1997)
Ixh	Ixhil	Kaufman (1974b)
Jak	Jakalteko	Ramírez Pérez et al. (1996)
Kaq	Kaqchikel	Cojti Macario et al. (1989)
K'ich	K'iche'	Ajpacaja Tum et al. (1996)
Lac	Lacandon	Canger (1970)
Mam	Mam	Maldonado A. et al. (1986)
Moch	Mocho	Kaufman (1967)
Mop	Mopan	Ulrich and Ulrich (1976)
Pqch	Poqomchii'	Sedat (2001)
Pqm	Poqomam	Malchic et al. (2000)
Q'an	Q'anjob'al	Diego Antonio et al. (1996)
Q'eq	Q'eqchii'	Sam Juárez et al. (1997)
Sak	Sakapulteko	Dubois (1981)
Tek	Teko	Kaufman (1969)
Toj	Tojlab'al	Lenkersdorf (1979)
Tuz	Tuzanteko	Kaufman (2003)
Tze	Tzeltal	Slocum et al. (1999)
Tzo	Tzotzil	Delgaty and Ruíz (1987)
Tz'ut	Tz'utujil	Pérez and Hernández (1996)

Usp Uspanteko Kaufman (2003)
 Yuc Yucatec Bricker et al. (1998)

Appendix 1: Words which are found in Poqom and greater lowland languages, but generally not in other Mayan languages, suggesting borrowing

In a few cases, attestations are found outside of Poqom and the lowland languages, but then the attestations will be from Western Mayan languages or from Q'eqchii', a heavy borrower of lowland words.

CENTIPEDE: Pqm <chahpaat> (Zinn and Zinn, n.d.), Yuc <(ah) chapat> 'ciempiés' (Barrera Vásquez 1980), Mop *chupaat*, Cht *chapaht*, Ch'r *chapajt* 'insect said to resemble the centipede', Tze *chapat*.

FOUR HUNDRED: Pqm 'cuatrocientos' (Kaufman 2003), Yuc <tun> 'year' (Colonial literature), Hieroglyphic Ch'olan *tuun*.

GIFT: Pqm *sii* (Kaufman 2003), Pch *siih*, Yuc <sihil> 'procedente cosa, que procede o sale de otra' (Barrera Vásquez 1980), Lac <sijil> (Dienhart 1989), Itz <siil> (Dienhart 1989), Mop <sjil> (Dienhart 1989), Q'eq *si:h* Kaufman (2003) [the related verb 'to give' has a similar distribution].

HEALER (CURANDERO): Pqm *ilool*, Mop *ilil*, Chl *x'ilo*, Tzo *ilol* 'curandero, hierbero', Q'eq *ilol yaj* 'comadrona'.

LEFT (HAND): Pqm *tz'eeet* (Kaufman 2003), Pch *tz'eeet* 'zurdo, da; izquierdo, da', Cht <tzit-ic>, Tzo *tz'et* (Kaufman 2003).

MOSQUITO: Pqm *uch'a'*, Pch *uch'a'*, Chl *uch'ja'*, Ch'r *uch'a'*, Cht <ucha>.

PALM TREE, SPECIES OF (COYOL): Pqm *naq'ach tuuk* (Kaufman 2003), Yuc *tuk'* 'acromia mexicana... palm tree whose flowers are used in hiccup remedy', Lac *tuk'* 'coyol; anillo de malacate', Itz *tuk'* 'cocoyol palm'.

SAP, RESIN: Pqm <riis> 'broth, juice' (Zinn and Zinn, n.d.), Yuc *iitz* 'sap, resin, perspiration', Mop *itz* 'resina, savia. .orín, óxido', Itz *itz* 'resin', Chl *yetzel* 'savia', Ch'r *ich* 'secretion, water of an organism', Cht <yitz> 'resina de todo árbol; humo de el palo', Jak *itz* 'amate' [a heavily resined tree], Toj *yetzel* 'grasa, manteca, zumo'.

SCRAPE, TO: Pqm <-juhc'a> 'to rub' (Zinn and Zinn, n.d.), Pch *juk'uuj* 'afilar; alisar; raspar', Chl *juk'ilan* 'restregar', Ch'r *juk'i utz'ijk'* 'scrape one's (newly-made) pottery'.

TAMALE: Pqm *pooch* 'tamal de masa grande en forma de bola' (Kaufman 2003), Pch *poch wi'k* 'tamalito', Mop *pooch* 'tamal de frijol' (Schumann 1997), Q'eq *poch* 'tamal de masa (pequeño)' (Kaufman 2003).

TICK: Pch *xiiip'* (Malchic et al. 2000), Mop *xip'i* 'nigua' (Schumann 1997), Ch'r *xip* 'a tick (shipe)'.

Appendix 2: Reconstructions⁷ and cognates for roots containing p' whose etymologies can be traced beyond the greater lowland languages

pM *b'ehj 'to break' Yuc *p'éeh*, Mop *p'eeh*, Chl *p'ih-* [for additional cognates see Brown and Wichman 2004: 167].

pM *b'is 'to measure, weigh'. Yuc *p'is*, Mop *p'is*, Itz *p'is* 'medir', Chl *p'is*, Chn *p'is*, Ch'r *b'is* 'medir' (Pérez Martínez et al. 1996), Cht <piz> 'medida, peso', Tzo *p'is* 'measure, serve' (Laughlin 1975), Tze *p'is-* 'persignarse', Mam *b'is* 'pensar' (Kaufman 2003), Q'eq *b'is-*, Moch *b'iis-* 'pensar', Q'an *b'is* 'contar', Aka *b'is* 'contar, enumerar', Jak *b'is* 'contar', Toj *b'is* 'medir, pesar, persignarse, santiguarse', Chu *b'is* 'contar'.

pM *b'ol 'swelling'. Yuc *p'ol* 'swell up', Mop *p'olmi* 'tener callos', Hua *bolchal* 'loma', Chl *b'oltäl* 'cerro', Ch'r *b'or ha* 'increase of water, rain, rise in streams and lakes, swelling of streams', Tzo *p'ol* 'aumentar' (Kaufman 2003), Tze *p'ohl* (Kaufman 2003), Kaq *b'oolooj* 'scurco, camellón', Tz'ut *b'oolooj* 'camellón, ola, tendal', Q'eq *b'ool* 'arista, haz, collado, loma'.

pM *b'o'l 'to pay'. Yuc *b'ó'ol* 'payment', Mop *b'o'ol*, Itz *b'o'ol*, Chl *p'olmal* 'tienda', Tzo *p'olmal* 'cosas para vender, mercancía', Tze *p'olmal* 'mercancía', Toj *b'olmal* 'mercancía, artículos, trueque, trocar'.

pM *b'us 'bend'. Yuc *p' us* 'bend, arch; hump', Chl *b'us-ul* 'montón (de tierra)', Ch'r *b'us-* 'ponerse deforme' (Pérez Martínez et al. 1996), Cht <puzpat>

- ‘jorobado’, Tzo *b’us-* ‘amontonado’, Tze *b’us* ‘estar amontonado’ / *p’us-pat* ‘jorobado’ (Kaufman and Norman 1984), Mam *b’us* ‘abultado, hinchado’, Ixh *b’us-* ‘empacar, enrollar ropa’, Pqm *p’us* (Kaufman 2003), Pqch *b’us-* ‘doblado’ (Malchic et al. 2000), Kaq *b’us-* ‘doblarse, rechinar algún árbol, haber en abundancia algo doblado como tela, billetes, etc.’, Tz’ut *b’us-*, Q’an *b’us* ‘jorobado’, Aka *b’us* ‘joroba, tumorcillo’, Jak *b’usb’akanh* ‘amontonarlo (solo de tierra y arena)’, *b’us-* ‘atizar’ [the changed form *p’us* must have diffused from some lowland language, perhaps Yucatec or Ch’olti’; the simultaneous presence of the pair *b’us* and *p’us-* in Tzeltal may then be explained by the borrowing of the latter].
- pM *kup ‘to cut’. Yuc *kup*’ (Lehmann 2002: 115), Tzo *kup* ‘saw, rend /rope/, cut self /with grass/’ (Laughlin 1975), Ixh *kup-’m* ‘hacer corto’, Q’eq *kup-* (Sedat 1955), Toj *kup-* ‘aserrar, cortar, serrar’.
- pWM *lip ‘to pry’. Tze *lip*’ ‘tocar con los dedos (cosa despreciada)’, Q’an *lip* ‘palanquear’, Aka *lip* ‘palanquear’, Jak *lip-* ‘palanquear (cosa chiquita), Chu *lip* ‘palanquear’.
- pM *pa’j ‘to fall (as drops)’. Hua *pa’iil* ‘se baja’ (Larsen 1955), Chl *p’ahtel*, Tzo *p’ah* ‘fall /from height/’ (Laughlin 1975), Tz’ut *pa’jeem*, Q’eq *pajajnak* ‘regarse granos anodando, caer la lluvia’, Moch *pa’* ‘tirar’, Q’an *pajaj* ‘catarata’, Chu *pájaw* ‘waterfall’ (Hopkins 1967). [The reconstruction of this is somewhat uncertain because of the fluctuation in the presence of *j* and *’*].
- pM *paak ‘custard apple’. Yuc *p’àak* ‘tomato’, Lac *p’aaak* ‘tomate’, Mop *p’ak* ‘tomate’, Itz *p’ak* ‘tomate’, Cht <paac> ‘tomate’, Pqch *pak* ‘cherimoya’, Pqm *pak* ‘anona de tierra fría, anona de tierra caliente’, Kaq *pák* ‘anona, palo de anona’, Sak *pak* (Dubois 1981: 112), Q’eq *pak* ‘cherimoya’ (Dienhart 1989).
- pWM *pich ‘to wrap’. Chl *p’ich* ‘hacer tacos’, Cht <pichi> ‘enbutir’, Q’an *pichil* ‘hojas o tela para envolver comida (servilleta), Aka *pich-* ‘envolver, empacar; vender; vestir’, Jak *pich-*, Chu *pich* ‘envolver, vestir’.
- pWM+GrLL *po’ ‘to tear out’. Chl *p’o’* ‘sacar tripa; operar’, Chn *p’o’-* ‘rajar, aserrar, partir (madera, fruta, jicara), Pqm <po’> ‘to ruin’ (Zinn and Zinn, n.d.), Q’eq *po’* ‘ser descompuesto’, Aka *po’* ‘partir, dividir; rajar; repartir; apartar’.
- pM *puu’s ‘musky’. Yuc *p’ú’us* ‘stinky (smell of urine)’, Lac *p’u’s* ‘hendiendo’, Mop *p’u’us* ‘olor acre’, Itz *p’u’us* ‘strong-smelling, musky’, Ixh *pus* ‘maíz manchado’ [*pu’s* expected], Tz’ut *puus* ‘moho que sale sobre el pan’, K’ich *puus* ‘mohoso, enmohecido’ [this set is not so strong, given the semantic leap from ‘smelly’ to ‘molded’ and the irregular Ixh form].
- pM *sep ‘to cut off’. Itz *sep*’ ‘cortar con tijeras’, Chl *sep*’ ‘pellizcar’, Tzo *sep-* ‘cortar’, Tek *sep-* ‘split’, Mam *sep* ‘momento de cortar algo suave de un machetazo’, Moch *sep* ‘cortar’.
- pM *sip ‘to swell up’. Yuc *sip*’, Mop *sip-* ‘hinchado/a’, Itz *sip*’, Ch’r *sib*’ ‘sentir malestar estomacal, inflarse’ [lest two different etyma be reconstructed—a lowland one of the shape **sib*’ and a pM one of the shape **sip*—the Ch’r form may be interpreted as a borrowing from other lowland languages having *sip*’], Ixi *sip-* ‘get upset stomach from overeating’, Awa *sip-* ‘sentir dolor por un raspón’, Pqm *sip-*, Pqch *sip-* (Malchic et al. 2000), Tz’ut *sip-*, K’ich *sip-* ‘hincharse; crecer cosas como pan’, Usp *sip*, Q’eq *sip-*, Tuz *sip* ‘abultarse’, Moch *si(i)p* ‘embotarse, hincharse, rendirse, aventarse, abultarse, acedarse, hacer mal la comida’.

Notes

1. Kaufman (2003) has noted the restricted distribution of two of these (‘mosquito’, ‘four hundred’), but for others he either has no Poqom entries in the relevant cognate sets (‘centipede’, ‘broth, juice’) or no set at all (‘to rub’, ‘tick’), or else he reconstructs etyma at the Common Mayan or Proto-Mayan levels in spite of the limited distributions of the forms.
2. The three forms should even be reduced to two to judge from later work by Kaufman. In his 2003 etymological dictionary the etymology for *láp’ ‘sticky’ is only reconstructed back to the Greater Tzeltalan stage, although the vague possibility of an older origin is alluded to by the comment “cf. TUZ lab’.a7 vt remojar tortilla muy

- tiesa. . .” The semantic leap from ‘sticky’ to ‘soak’ apparently has made Kaufman more cautious. I, too, would be cautious not to reconstruct the form beyond Greater Tzeltalan based on the Greater Tzeltalan and Tuzanteko evidence alone.
3. Potentially the fact that the glottal stop /ʔ/ allows the sound change to take place could also be considered problematical since many would regard this consonant to be specified for the features [+constricted glottis] under the laryngeal node. It might, however, be argued that the feature of glottalization is to be regarded as simply a place feature, which amounts to saying that the glottal stop is a stop patterning with the unglottalized oral stops, conforming to the way it is usually treated in descriptions of the phonologies of Mayan languages.
 4. Campbell misquotes Kaufman and Norman as stating that “...the roots in which /pʔ/ occurs contain one of the apical consonants /t s n [s]/...” leaving out /l ch x/ from the set, which leads to confusion (cf. his discussion of reflexes of pM *bʔax). He goes on to try to reduce the conditioning environment by stating that *bʔ does not change to pʔ before *a* or *ä* (i.e. before long *aa* or short *a* in the current understanding of proto-Chʔolan phonology). But it could just be an accidental gap in the attestations. Table 1 clearly shows that there is no patterning to apparent ‘conditions’ involving vowel qualities. The major problems with Campbell’s account, however, are, first, that he does not involve other greater lowland languages but simply seems to take it for granted that the sound change can be looked upon as an internal Chʔolan affair, and, secondly, that he treats proto-Chʔolan forms having pʔ as evidence for the sound change whether or not they have cognates allowing for reconstructions beyond proto-Chʔolan.
 5. Confusingly, Campbell (1984: Table 2) lists all three of the phonemes *p*, *bʔ*, and *pʔ* as being present in Chʔorti’.
 6. According to Robertson (2004) I have erred in associating him with this precise view. I think I have done my best to cite him correctly. Whether or not he actually holds or has held the view, it is still a theoretical possibility one, and so should be dealt with in any case.
 7. When, following the system of Brown and Wichmann (2004), alternative recon-

structions are possible I have only given the simplest alternate. The sets of alternative reconstructions for the individual items on the list are: pM *bʔis / *bʔIs; pM *bʔol / *bʔOl / *bʔoʔhl; pM *bʔoʔl / *bʔooʔl; pM *bʔus / *bʔUs / *bʔuʔs; pM *kup / *kUp / *kuʔhp; pM *lip / *lIp / *liip / *liihp; pM *paak / *paahk; pWM *pich / *pIch / *piich / *piihch; pWM+GrLL *poʔ / *pooʔ / *poʔs; pM *sep / *sEp; pM *sip / *sIp. We can allow ourselves to ignore the various alternatives because we are interested in the consonants involved, not the syllable nuclei.

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