CHAPTER 3

MAYAN HISTORY AND COMPARISON

Lyle Campbell

1 INTRODUCTION

The intention of this chapter is to present an overview of Mayan historical and comparative linguistics and to point to areas where further investigation and fresh thinking may prove rewarding. While each language has its own complex history, due to space limitations I concentrate on aspects of Mayan reconstruction and linguistic changes relevant to the family as a whole.1

2 BACKGROUND

Relationships among Mayan languages were recognized already in Spanish colonial sources. For example, Francisco Ximénez (1702:1) had a clear understanding of the family relationship among many of the Mayan languages, Tzotzil [Tsotsil], Zendal [Tseltal], Chanabal [Tojolabal], Coxoh, Mame [Mam], Lacandón, Peten [Itzaj], Q’aq’chiquel [Kaqchikel], Q’aq’chi [Q’eqchi’], and Poq’omchi, [Poqomchi’]. He remarked that for the languages to be related in this way was no miracle, since that kind of relationship is seen in the “daughters of Latin” (the Romance languages). Lorenzo Hervás y Panduro (1800:304) in his catalogue of the world’s languages reported that “the languages Maya [Yucatec Maya], Cakchiquel [Kaqchikel] and Pocoman [Poqomam] are related”; his evidence included number words, many other words, and “not a little of their grammatical structure.” Some highlights in the history of Mayan comparison and reconstruction were Karl Hermann Berendts’s (1876) collection of materials and classification; Otto Stoll’s (1884, 1885) classification, comparative word lists, and postulation of sound correspondences and some regular sound changes; Charles-Félix-Hyacinthe Gouhier Comte de Charencey’s (1870, 1872) classification and sound correspondences; Alfred Kroeber’s (1939) classification and his confirmation of the close connection between Huastec and Chicomuseltec; and Abraham M. Halpern’s (1942) set of sound correspondences and the first real reconstruction of several Proto-Mayan sounds. (Proto-Mayan is henceforth abbreviated PM.) Often Norman McQuown (1955, 1956) is credited as founder of modern Mayan comparative linguistics. Several PM phonemes postulated by McQuown were eliminated in later refinements (see Kaufman 1964, 1969, 1976, 1990; Campbell 1977:89–90, 97–101, 1988:6–12; Kaufman and Norman 1984; Kaufman with Justeson 2003; see below). The view of PM reconstruction in Campbell and Kaufman (1985) still represents the consensus view, for the most part.
The documentation of Mayan languages has increased dramatically since the 1980s, with dictionaries and grammars now available for most of the languages. This has greatly facilitated comparison and reconstruction, and provides a rich and needed foundation for Mayan historical linguistic advances yet to come.

3 CLASSIFICATION

There are some thirty Mayan languages. The most widely accepted classification of the family is given in Table 3.1 (degree of indentation corresponds to degree of relatedness).

Note that the spelling of the names of Mayan languages in Guatemala follows recommendations of the Academia de Lenguas Mayas de Guatemala (http://www.almg.org.gt/), and those in Mexico the spellings of INALI (2009).

The only extinct Mayan languages are Chicomuseltec and Choltí, though some others are highly endangered, for example Itzaj (Itzá) and Mocho’ (Motozintleco). Sometimes the language of Maya hieroglyphic writing is also listed as extinct, although it probably did not disappear, but rather was the ancestor to one or more of the modern Ch’olan

<table>
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<th>TABLE 3.1 CLASSIFICATION OF THE MAYAN LANGUAGES</th>
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<tr>
<td>Huastecan</td>
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<tr>
<td>Huastec, Chicomuseltec</td>
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<td>Core Mayan (Central Mayan)</td>
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<td>Yucatecan</td>
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<td>Maya (Yucatec Maya), Lacandón</td>
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<td>Itzaj (Itzá, Itza’), Mopan</td>
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<td>Western Mayan</td>
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<td>Cholan-Tseltalan</td>
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<td>Cholan</td>
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<td>Ch’ol, Chontal (Yokot’an)</td>
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<td>Choltí (extinct), Ch’ortí</td>
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<td>Tseltalan</td>
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<td>Tseltal, Tsotsil</td>
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<tr>
<td>Greater Q’anjob’alan (Q’anjob’alan-Chujean)</td>
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<td>Q’anjob’alan</td>
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<td>Q’anjob’al, Akatek, Jakaltek (Popti’)</td>
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<td>Mocho’ (Motozintlec) (with Tuzantec)</td>
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<td>Chuj-Tojolabal</td>
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<td>Chuj, Tojolabal (Tojol-ab’al)</td>
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<td>K’ichean-Mamean (Eastern Mayan)</td>
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<tr>
<td>K’ichean</td>
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<tr>
<td>Q’eqchi’</td>
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<td>Uspantek</td>
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<td>Poqom</td>
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<tr>
<td>Poqomam, Poqomchi’</td>
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<tr>
<td>Central K’ichean (K’ichean Proper)</td>
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<td>K’iche’</td>
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<tr>
<td>Kaqchikel, Tz’utujil</td>
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<tr>
<td>Sakapultek</td>
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<td>Sipakapense</td>
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<td>Mamean</td>
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<tr>
<td>Mam, Tektitek (Teko)</td>
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<td>Awakatek, Ixil</td>
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languages into which it evolved (much as Latin did not become extinct but evolved into modern Romance languages). Coxoh, much talked about in colonial sources from Chiapas, may be another extinct Mayan language, though Campbell and Gardner (1988) argue that it was probably a dialect of Tseltal. Newly discovered Mayan languages have been added to the family since 1965: Akatek, Sakapultek, Sipakapense, and Tektitek (Teko) (Kaufman 1969, 1975). Sometimes Achi and Chalchiteko are listed as additional Mayan languages, though here Achi is considered a variety of K’iche’ and Chalchiteko a variety of Awakatek, not distinct languages, though recognized as distinct ethnic entities in Guatemala. Finally, it has never been resolved whether Tuzantec is a dialect of Mocho’ or a separate language. Whatever its status, it is sufficiently different from Mocho’ to merit investigation. Unfortunately, both Mocho’ and Tuzantec are critically endangered.

The most generally accepted view of the Mayan subgrouping is presented in Table 3.1. The groupings Huastecan, Yucatecan, Ch’olan-Tseltalan, Greater Q’anjob’alan, and Eastern Mayan (Mamean-K’ichean) are clear and for the most part uncontroversial. Opinions have differed about whether Tojolabal belongs to Greater Q’anjob’alan or to Ch’olan-Tseltalan (Law 2014 for a survey of opinions). The most generally accepted view holds that the Huastecan branch was the first to separate from the rest of the family. Next, Yucatecan branched off, and later the remaining Core Mayan groups separated into distinct branches. It has generally been accepted that Ch’olan-Tseltalan and Greater Q’anjob’alan belong together in a single branch (sometimes called Western Mayan), though this has never been completely confirmed. K’ichean and Mamean (Eastern Mayan) clearly belong together in a single branch. (See Campbell and Kaufman 1985; Kaufman 1990, this volume).

Any uncertainties about aspects of Mayan subgrouping may be due to some scholars’ confusion over some diffused characteristics among Mayan languages, making it difficult to distinguish shared innovations (the only reliable evidence of subgrouping) from changes shared due to diffusion across language boundaries, as for example, borrowing in the Greater Lowland Mayan Linguistic Area and in the Huehuetenango diffusion area (see §8). For example, because Huastecan shares several sound changes with Ch’olan-Tseltalan and with Yucatecan, it was sometimes thought these groups should be classified together in a single subgroup (see for instance Campbell 1977:100–1; Robertson 1977, 1992; Law 2014). Nevertheless, Huastecan grammar and lexicon are so different from the other Mayan languages, it seems highly probable that it has indeed been split away from them for a considerable time. This means that several of the similarities it shares with Ch’olan-Tseltalan and Yucatecan, including some shared sound changes, must be due to language contact after Huastecan had separated from the others or to independent parallel developments. For example, it is clear from several of the seemingly shared sound changes in several of the languages that they were not shared innovations but rather took place independently at distinct times in slightly varying phonological environments in different branches of the family (see Justeson et al. 1985).

Comparative work dedicated to individual subgroups has made significant contributions to Mayan historical linguistics generally, for example, for Ch’olan Kaufman and Norman (1984), for K’ichean Campbell (1977), for Huastecan Norcliffe (2003), for Tseltalan Kaufman (1972), and for Yucatecan Fisher (1973). A serious reconstruction of the Greater Q’anjob’alan subgroup is much needed and would no doubt clarify subgrouping issues, particularly that of disputed Tojolabal and uncertain broader connections with Ch’olan-Tseltalan, and would help to determine which traits are due to areal diffusion and whether some potential cognates are actually loanwords instead.
4 RECONSTRUCTION

As mentioned, many take Norman McQuown’s (1955, 1956) reconstruction of PM phonemes as the point of departure for modern Mayan comparative linguistics. Kaufman (1964, 1969, 1976) refined this reconstruction in several ways, for example, by showing that McQuown’s tonal contrast did not belong to PM, that PM had no labialized velars and no complete series of palatalized sounds, and that *b’ (imploded b) should replace McQuown’s *p’ (see below in this section for discussion of these). Campbell (1977:89) refined the reconstruction further by showing that PM distinguished *r from *y, and that *ə could be eliminated (see below). These refinements resulted in the phonemic inventory of PM given in Table 3.2 (see Campbell and Kaufman 1985).

Most Mayan morphemes are monosyllabic, and PM had the possible syllable shapes (canonical forms) CVC, CV:C, CVC₂, and CV₁:VC₁:C₁, where in CVC₁:C₂ the C₂ of the consonant cluster was limited to h, ?, or a fricative s, š, or x. In each of these, the initial consonant is in fact optional. That is, traditionally Mayanists have followed Terrence Kaufman’s canonical shapes, which have initial C under the belief that those that might appear to be vowel-initial instead began with a glottal stop as their onset. However, since Proto-Mayan has a different set of possessive and ergative pronominal markers that attach to vowel-initial roots distinct from the set that attaches to consonant-initial forms, it is clear that not all Mayan morphemes should be considered consonant-initial, that PM also had vowel-initial morphemes. Thus, in the conventional canonical forms, the first C should be understood as optional, as (C)VC, (C)VC₁:C₁, and (C)VC₁:VC₁:C₁. Note that Kaufman sometimes interprets CV₁:VC₁:C₁ as equivalent to CV₁:VC₁:C₁.

While this reconstruction is accepted by most scholars, the phonetic nature of some of the sounds has not gone without question, and future research ought to investigate the phonetic content of these as well as that of some other sounds that have not received attention. For example, it seems secure that PM *b’ was imploded ([ɓ]) (possibly with a voiceless allophone syllable finally) – its reflexes are imploded in most of the languages. Nevertheless, some scholars expect symmetry and so would reconstruct it as a voiceless and ejective *p’ to match the other consonants of the glottalic series (*t’, *t’, *ts’, *č’, *k’, *q’), which are assumed to be ejective. However, it is not unusual for languages to have a glottalic series which combines some implosive sounds together with some ejective sounds, and if glottalic series have any implosive sounds, these tend to favor the labial position, i.e. the bilabial implosive ([ɓ]) (see Greenberg 1970; Campbell 1973a), making PM with an imploded ɓ not at all unusual.

Although PM is typically reconstructed with only a single imploded sound in its glottalic series, labial *b’, some Mayan languages underwent a conditioned sound change which

<table>
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<th>TABLE 3.2 PROTO-MAYAN PHONEMES</th>
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<tr>
<td>p t t’ t’’ ts č k q ? l</td>
</tr>
<tr>
<td>b’ t’ t’’ ts’ č’ k’ q’ r</td>
</tr>
<tr>
<td>m n η s š x w y h</td>
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<tr>
<td>i e a o u V: (vowel length)</td>
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created an ejective \( p' \) in addition to \( b' \) (cf. Campbell 1977:38, 115–16, 1996; Kaufman and Norman 1984:85; Law 2014; Wichmann 2006b). This began in Ch’olan-Tseltalan and Yucatecan, and then diffused to Poqomam and dialects of Poqomchi’. Different scholars have suggested different conditioning environments for the change (see Campbell 1996; Kaufman and Norman 1984; Wichmann 2006b). Campbell (1996) postulated that the change appeared to affect original \( *b' \) in words which had an apical consonant, and then the new sound, \( p' \), was extended by onomatopoeia (and sound symbolism) to additional words that did not have that environment. That does not, however, account for all cases. Wichmann (2006b:51), in contrast, concludes: “\( *p \) 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 \( h \)).” His opinion, however, that “sound changes can be spontaneous,” with its seeming suggestion that sound changes need not be regular (p.51), will be disputed.

The \( *q' \), on the other hand, has not received any particular attention and is generally thought to have been a voiceless ejective uvular stop in PM. However, its phonetic character may profit from closer consideration. In most of the K’ichean and Mamean languages, syllable-initial /q’/ is phonetically a voiceless imploded uvular stop (and imploded in other positions as well in several of the languages), [qˁ] (see, for example, Pinkerton 1986; England 1983). Based on the number of languages in which this sound is imploded, it is possible – I would say probable – that PM \( *q' \) was also imploded (phonetically [qˁ]).

This imploded uvular goes against Greenberg’s (1970) original proposed implicational universal, that in the glottalic series the presence of an imploded sound at any point of articulation further back in the mouth implies that the members of the series at points of articulations further towards the front of the mouth should also be imploded (for example, the presence of /ɗ/ implies /ɓ/ (and not /p’/), though the presence of /b/ does not imply anything for sounds further back in the mouth, so the language could have either /t’/ or /ɗ/). The imploded uvular in the glottalic series of these Mayan languages has forced this proposed implicational universal to be revised (Campbell 1973a). Also, until the facts of the voiceless imploded uvular stop in K’ichean languages became known, it was hypothesized that all imploded sounds must be voiced; this claim had to be abandoned.

There has been occasional curiosity about the phonetic nature of PM \( *ŋ \) and its non-nasal reflexes in some subgroups (cf. Fox 1978). Nevertheless, there seems to be little basis for serious doubt that it was a velar nasal in PM. The reconstruction is based on the sound correspondence: \( h/w/y \) in Huastecan; \( n \) in Yucatecan, Ch’olan-Tseltalan, and a few of the Greater Q’anjob’alan languages; \( y \) in the rest of the Greater Q’anjob’alan languages; and something like but different from \( x \) in Eastern Mayan languages (details below). Those with \( n \) underwent the change \( *ŋ > n \). There really is no plausible alternative reconstruction for \( *ŋ \), since there are straightforward sound correspondences that support the reconstruction of \( *w, *h, *n, \) and \( *x \), the other sounds encountered in reflexes of \( *ŋ \) in some of the languages. Nevertheless, curiosity leads us to wonder what might have been in the phonetic makeup of this sound or in its reflexes in Huastecan and Eastern Mayan languages – which are at opposite geographical extremes of the Mayan family – that could lead it to lose its nasality and to become a voiceless fricative in Eastern Mayan and \( w/h/y \) in Huastecan (under different conditions). These are not common phonological changes.

There is verification of the change \( *ŋ > n \) both in the comparative evidence and in loanwords from Ch’olan in some Q’anjob’alan languages from the time before Ch’olan had changed its \( y \) to \( n \). For example, Mocho’ čo:ŋ ‘to sell’ was borrowed from Ch’olan, which has \( *čon \) (cf. Proto-Mayan \( *ko:ŋ \)), after Ch’olan had undergone the change \( *k > č \) but before it had changed \( *ŋ > n \) (compare native Mocho’ koŋob’ ‘market’, which preserves original sounds, \( *koŋ ‘to sell’ + -Vb’ ‘instrument, place of’) (Kaufman 1976).
The relationship between the reflexes of PM *ŋ and PM *x in K’ichean has implications for the phonetic makeup of PM *x. The reflex of PM *x is x in all the K’ichean languages; the reflex of PM *ŋ is also x in K’ichean languages with the exceptions of Q’eqchi’, where it is h, and Uspantek, where it is also x but is distinct from the reflex of PM *x in that a vowel preceding x from PM *ŋ has falling tone, but a vowel before x from PM *x does not. Since the two correspondences sets contrast, it is necessary to reconstruct two separate sounds in Proto-K’ichean (PK) – both cannot be *x. I proposed that the one from PM *ŋ should be reconstructed as something more fronted than the one from PM *x; I argued that PM *ŋ > PK *x (velar) and PM *x > PK *χ (uvular), and that what has been reconstructed as PK *x probably was phonetically uvular, making *χ a better symbol to represent it (Campbell 1977, 2013:184). What is written as x (<j> in practical orthography) in all Eastern Mayan languages is phonetically [χ] (a voiceless uvular fricative). Since Eastern Mayan and some Greater Q’anjob’alan languages contrasted uvular and velar stops, as did PM, it is not implausible that K’ichean languages once also contrasted uvular and velar fricatives, as seems to be supported by the difference in the K’ichean reflexes of conventionally reconstructed PM *x and PM *ŋ, and by extension, that conventionally reconstructed PM *x phonetically was actually *χ, as are its reflexes in Eastern Mayan and some Greater Q’anjob’alan languages. It might seem odd to assume PM had *χ (uvular) but no corresponding *x (velar), but this situation is not so uncommon. Castilian Spanish (various Peninsular dialects), for example, has only χ with no corresponding x. Perhaps a motivation for the shift of PM *ŋ to Eastern Mayan *x was to fill in the missing gap for the velar fricative x in the presence of uvular χ (though later the *x from *ŋ and the *χ merged in all Eastern Mayan languages except Q’eqchi’ and Uspantek). In short, I propose that PM had *ŋ and *χ, and no *x, a situation which may have contributed to *ŋ losing its nasality and becoming x in some of the languages.

The sounds *r and *r’ are unusual within the PM system, and the sound correspondences upon which they are based have complicated reflexes, as seen in Table 3.3 (sets (4a) and (4b)), where they are compared with other similar sounds.

Note that the Huastecan reflexes of these sounds are not as straightforward as those of some of the other subfamilies, as seen in the comparisons in Table 3.4. Clearly there has been considerable shifting among these sounds in Huastecan from PM times.

We may wonder if it is possible to eliminate *r and *r’ from PM, given that neither shows up as such in any Mayan language and, though we reconstruct four distinct sounds, *t, *ts, *č, and *ty (and their glottalized counterparts), no language in any of the subgroups shows more than three different contrasts for the four correspondences

<table>
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<tr>
<th>TABLE 3.3 SOUND CORRESPONDENCES RELATED TO *r and *r’</th>
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<tr>
<td>Huastecan</td>
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<tr>
<td>(1a) t</td>
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<tr>
<td>(1b) t’</td>
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<tr>
<td>(2a) t</td>
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<tr>
<td>(2b) t’</td>
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<tr>
<td>(3a) ć</td>
</tr>
<tr>
<td>(3b) ć’</td>
</tr>
<tr>
<td>(4a) t</td>
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<td>(4b) t’</td>
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⁴Note that in Yucatecan, *t and *r merged to t (and *r’, *r’’ > t’); then t (from both sources) > ć word-finally and before front vowels (also t’ from both earlier sounds > ć’ in this same environment).
sets. Yucatecan and Ch’olan-Tseltalan lack evidence that \(*t\) and \(*t’\) might ever have been distinct from \(*t\) and \(*t’\); K’ichean and Greater Q’anjob’alan show no indication that they ever contrasted with \(*č\) and \(*č’\). We might wonder whether it is possible to reduce the number of PM sounds by showing that \(*t\) and \(*t’\) can be derived from some other PM sounds in some conditioning environment. Or at least we might think it should be possible to find a phonetically more plausible reconstruction to represent these sounds. However, no convincing solution has suggested itself that would allow us either to combine these with other sounds (conditioned in some environment) or to come up with a more phonetically plausible reconstruction. Alternative reconstructions involving \(*ts\) or \(*č\) (and their glottalized counterparts) do not seem possible, since these logical candidates are already taken up, reconstructed to represent the sounds of other correspondence sets (as in sets (2) and (3) of Table 3.3) which contrast with these.

Nevertheless, a more plausible reconstruction would be satisfying. The likely phonetic nature of \(*t\) and \(*t’\) in PM is not clear from the sounds in the correspondence sets upon which they are based – sometimes the reconstruction has been characterized as palatalized alveolar stops, sometimes as dental stops in contrast with alveolar or some other more backed articulation. It is suspicious that no other sounds in the dental-alveolar(-alveopalatal) region share a palatalized or front/back contrast such as that between \(*t\) and \(*t’\). Nevertheless, Huastecan with its retroflexed \(*t\) (and \(*t’\)) from PM \(*t\) (and \(*t’\)) and its \(*t\) (and \(*t’\)) from PM \(*č\) (and \(*č’\), respectively) suggests that a PM contrast in terms of some more anterior \(t\)-like sound contrasting with some more posterior one may be in the right direction. In fact, a reconstruction with PM \(*č\) (and \(*č’\)) (retroflex stops) replacing \(*t\) (and \(*t’\)) and with \(*t\) (and \(*t’\)) replacing \(*č\) and \(*č’\) might be more appealing – at least it has the slight advantage that sounds equivalent to the reconstructed ones actually occur somewhere, if only in the Chontla dialect of Huastec. Still, a dental/alveolar vs. retroflex contrast is no less suspicious than a palatalized (or dental) vs. alveolar contrast when it affects no sounds in series other than the stops.

In particular, the Mamean reflexes of \(*t\) and \(*t’\) align differently from those of other subgroups. The sound correspondences in Table 3.3 become clearer when the Mamean chain shift is taken into account:

*č > č
*t > č
*r > t

(adapted from Norcliffe 2003; see also Kaufman 1985)
For example, Mamean č of set (1a) (Table 3.3) comes from an earlier *t and thus matches the t correspondences in other subgroups, making the reconstruction of *t clearer. We might ask, though, why an r would shift to a t. Neither r > t nor č > č (retroflex) is a natural nor expected change.4 If the sequence of changes was a pull chain, why would č > č, leaving a gap into which t was pulled (r > č), leaving a gap for t into which r was pulled (r > t)? A change from an ordinary č to a retroflex č is highly unusual and not at all expected. However, if the language came to lack t (because it changed to č to fill the gap left by *č > č), that might have been some motivation for the unusual *r > t change.

Some scholars are skeptical of the existence of push chains; many oppose teleological explanations in linguistics and thus object to reliance on the need or intention to maintain phonological distinctions on which push chains are assumed to depend. Nevertheless, the existence of push chains is an empirical matter, and there is solid empirical evidence that some chain shifts were indeed push chains. For example, in the vowel shift in New Zealand English, historical documentation confirms that the stages in the shift took place in a push chain. First, the “trap” vowel (the vowel in words like trap) raised, impinging on the space of the “dress” vowel; second, as a consequence the “dress” vowel raised; and, third, this raised “dress” vowel crowded the “kit” vowel, which in reaction centralized (towards barred “i”). This historically attested sequence of shifts allowed the vowels to avoid merger and to maintain their phonemic contrasts from the vowels that shifted into their space. (See Gordon et al. 2004, especially pp. 264–5, for details.)

Conventionally, PM is reconstructed with contrastive vowel length, five long vowels matched by five short ones: i, e, a, o, u, and V: (vowel length). The question can be asked, was this opposition phonetically one of a pure length difference and nothing else, or was there possibly a vowel-quality distinction involved (in addition to the length difference or instead of it)? In a majority of the Mayan languages that maintain the contrast, the “short” vowels are typically also more open or slightly lower than their “long” counterparts, except that “short” /a/ is phonetically [ə] or schwa-like. Whether the contrast originally was one of pure length and nothing else, or whether it involved also a vowel-quality difference, might be of no particular significance, involving merely notational variants of the same thing. However, phonetically the opposition does involve a vowel-quality difference between the “long” and matching “short” vowels (a close/open contrast, a tense/lax contrast in some of the languages, for example in most K’ichean languages). This suggests that perhaps the opposition involved phonetically a vowel-quality distinction in PM as well. Viewing the contrast this way could have some satisfying implications. In most of the languages that have the contrast, what is represented as short /a/ is phonetically [ə] and long /a:/ is [a]. Most of the Mayan languages (and dialects of languages) which have lost the “length” contrast nevertheless maintain the opposition in the low vowels, between the conventionally rendered /a:/ and /a/, the latter as ø (except in certain environments, e.g. before h or ?, where it is a) (see Campbell 1977:89–90). If PM had had solely a straightforward length contrast, there would be no strong phonetic motivation for why the contrast traditionally represented as /a:/ vs. /a/ should not have been lost along with the loss of the length contrast in the other vowels in those languages. Rather, it appears that PM also had a vowel-quality difference between the vowels traditionally reconstructed as “long” vs. “short” rather than merely a pure length contrast, and this helps make clear why phonetic ø (or something ø-like) shows up as the counterpart to a in so many of the languages, even in those that otherwise lost the length opposition – the distinction between ø and a is phonetically more salient, more distinct, than that, say, between /i/ and /i/, or between /u/ and /o/. Thus, while it was correct to eliminate ø from the PM inventory as reconstructed earlier, perhaps we should resuscitate PM
*[^a] phonetically as the “short” counterpart to “long” *[^a], as part of the overall vowel opposition in PM which contrasted “long” (phonetically higher, closer, or tenser) vowels with “short” vowels (phonetically lower, more open, laxer). Terrence Kaufman (personal communication, about this paper) does not believe that a tense/lax opposition is sufficient to describe the phonetic character of the vowel distinctions in question, though he accepts that in most of the languages, the “length” opposition involves also a quality distinction between vowels of the opposing sets. I propose, as a hypothesis for further testing, that the PM length contrast involved a vowel-quality difference between conventionally reconstructed long and short vowels in addition to or instead of a pure length-only contrast.

McQuown (1956) had postulated a tonal contrast for PM. Only four Mayan languages have tone: Yucatec Maya, Lacandón, Uspantek, and Mocho’ – and they belong to three different subbranches of the family. Tonal contrasts in these languages developed from segmental phonology involving vowels followed by laryngeals (h or ŋ) and from long vowels, though the changes involved are not the same in each language. In Yucatec Maya, *[^V]:[^C] > [^V]C (long vowel gave low tone), and *[^V]h[^C] > [^V]^C and *[^V]ʔ[^C] > [^V]i[^V]C – high tones when laryngeals were involved. In Uspantek, in word-final syllables only, low tone (i.e. falling) developed from *[^V]h[^C] > [^V]^C and *[^V]ʔ[^C] > [^V]^C when the C was a stop or affricate; word-final *[^V]ʔ > [^V]; and *[^V]ŋ > [^V]^C; otherwise, long vowels in final syllables have high tone, *[^V] > [^V]: (Campbell 1977:38, 89). In Mocho’, PM *[^V]ʔ[^C] and *[^V]h[^C] developed an echo vowel, becoming [^V]i[^V]^C and [^V]i[^V]^C and then *[^V]ʔ[^C] > [^V]^C with falling pitch. (See Palosaari 2011:95–106 for details.) The fact that the laryngeals produce high (rising) tone in Yucatec Maya but low (falling) tone in the other languages has implications for general claims about tonogenesis (see Palosaari 2011).

5 LEXICAL RECONSTRUCTION

Kaufman with Justeson’s (2003) 1,505-page Mayan etymological dictionary, with over 3,000 etymologies, is a particularly important and valuable contribution to Mayan linguistics – something which nearly all other language families of the Americas lack. This is a rich, ripe resource, available to be exploited for contributions to Mesoamerican prehistory, Mayan linguistic prehistory, Mayan epigraphy, and much more. It follows and provides further support for the now most generally accepted classification of the languages and reconstruction of the phonology (as described above). (See Kaufman, this volume, for discussion of PM lexical items.)

6 PM MORPHOSYNTAX

We should expect much more to be discovered in the future about PM morphosyntax and particularly about the history of the grammar of the various subgroups and individual languages. Nevertheless, the study of Mayan historical syntax is considerably in advance of that of most other language families in the Americas and, it is safe to say, also of most of those of the rest of the world. Studies include England (1991) on word order, Kaufman and Norman (1984) on Ch’olan morphology, Mora-Marín (2003) on reconstruction of applicative and antipassive constructions, Norman (1978) on “instrumental voice,” Norman and Campbell (1978) about PM syntax generally, Robertson (1992) on tense/aspect/mood/voice in verbs, and especially Kaufman’s (2002) detailed treatment of Mayan morphosyntax. These studies reveal that PM was an ergative language, with associated antipassive constructions. In Mayan languages, transitive verbs bear ergative markers that cross-reference their subjects; these ergative markers are equivalent in form
to the possessive pronominal prefixes that nouns bear. The subjects of intransitive verbs and the objects of transitive verbs both bear absolutive cross-referencing markers, which are distinct from the ergative ones. It is argued that PM had VOS (Verb-Object-Subject) basic word order when the subject was higher than the object on the “animacy” hierarchy (where ‘human’ is highest, ‘animate’ next highest, and ‘inanimate’ lowest), but had VSO word order when subject and object were equal in animacy. PM nominal possession was of the form, for example, [her-house the woman] for ‘the woman’s house’. PM also had relational nouns for locative functions, i.e. possessed noun root in construction, for example the equivalent of [his-head] for ‘on him’ and [your-stomach] for ‘in you’. (For a much more complete reconstruction of PM morphosyntax, see Kaufman 2002).

7 CONTRIBUTIONS FROM WRITTEN SOURCES

Several Mayan languages have abundant written attestations beginning shortly after earliest Spanish contact. There is extensive room for continued investigation of these sources to find out about changes in Mayan languages, though there have been a number of contributions to understanding several changes in Mayan languages based on the linguistic study of these documents (see Campbell 1973b, 1974, 1977, 1988, 1990, 2013; Kaufman 1980, for some examples). The findings from these investigations have served (1) to document former contrasts now lost and sound changes that have taken place; (2) to refine some reconstructions of PM phonology; (3) to distinguish diffused changes from legitimate shared innovations, and to clarify evidence for subgrouping; (4) to uncover and explain grammatical changes; (5) to identify ancient extinct languages with scarce attestation (Coxoh, for example); (6) to determine the relative age of changes; and (7) to aid deciphering Mayan hieroglyphic writing, to use Mayan historical linguistics to understand Mayan epigraphy, and to use findings in the writing system to study changes in the languages. For example, Campbell (1973b, 1977) showed that the change in Poqomam, Poqomchi’, and Q’eqchi’ of ts to s took place in relatively recent times, based on earlier colonial attestations. Campbell (1974, 1977) examined older sources to show that the change of k and k’ to ky and k’y respectively when the next consonant after an intervening non-round vowel was a uvular (q, q’, χ) had diffused across dialects of several K’ichean languages. Similarly, Yucatec Maya older written sources reveal that the language contrasted h and x, though these have merged to h in modern Yucatec Maya (Campbell 1990). Huastecan sources reveal that modern Huastec labialized velars kʷ and k’ʷ developed from earlier sequences of velar stop (k or k’) followed by a round vowel (u or o) followed by a glide (w, y, h, ŋ) followed by a vowel (Kaufman 1980; Campbell 1990). Campbell and Gardner (1988) identified Coxoh as an extinct dialect of Tzeltal based on scant lexical attestations in colonial sources. Campbell (1990) traced the development in Kaqchikel morphology from aspect to tense markers.

In recent years many studies, too numerous to survey adequately here, have applied findings of Mayan historical linguistics to the interpretation of the language (languages) in which the Maya hieroglyphic texts are written and to examining the Maya script for what it can reveal about changes in Mayan languages. A few examples include Campbell (1984, 1990, 2013), Justeson and Campbell (1984, 1997), Houston et al. (2000), Wichmann (2006a, 2006b), Law (2013a, 2014), and the papers in Wichmann (2004), among many others. They show that the language of the Maya script is definitely Ch’olan (though opinions vary about details of which Ch’olan language(s) may have been involved). For example, Campbell (1984) argued that attestations in Maya hieroglyphic writing demonstrate that the changes in Ch’olan of *k > č and e: > i took place at a time before the
texts were written, establishing a terminus ante quem for these changes. Almost certainly much stands to be gained in future historical linguistic work involving Maya hieroglyphic writing.

8 LANGUAGE CONTACT

Very significant for Mayan historical linguistics is the study of language contact, what Mayan languages have received from others, what they have contributed to others, and diffusion among Mayan languages themselves – both loanwords and structural influences. See, for example, Kaufman 1964, 1976, 1980, this volume; Campbell 1973b, 1977, 1997b; Campbell and Kaufman 1976; Justeson et al. 1985; Campbell et al. 1986; Barrett 1996, 2002; Kaufman and Justeson 2009; Law 2009, 2013a, 2013b, 2014, this volume; Wichmann and Hull 2009, etc. Opinions differ concerning the identification of some borrowings; for example, Wichmann and Brown (2003) include as loans numerous cases that many other linguists would not accept based on standard criteria for loanword identification. Mayan languages participate in the Greater Lowland Mayan Linguistic Area (Justeson et al. 1985; Law 2014; Kaufman, this volume), in the Huehuetenango diffusion area (a.k.a. the Huehuetenango Sphere, involving Mamean and Greater Q’an-job’alan languages except Tojolabal and Mocho’) (Kaufman 1974, 2002, this volume; Barrett 2002), and in the broader Mesoamerican Linguistic Area (Campbell et al. 1986).

As Law (2014:31) points out, changes shared among languages of the Lowland Mayan Linguistic Area include phonological borrowings, diffusion of specific sound changes, direct borrowing of several bound morphemes, and much convergence or borrowing of syntactic patterns and morphosyntactic structures. Law (2014:175) identifies features shared through contact among two or more languages in the lowlands that range from diffused phonological innovations (phonemic mergers, sound changes and even new phonemic contrasts), to syntactic and semantic patterns (the loss of the agent focus antipassive, the development of an inclusive/exclusive distinction in person marking, aspect-based split ergativity), to the direct replication of actual morphological forms, linguistic ‘matter’ (several person markers, voice and aspect suffixes, auxiliaries, plural markers, numeral classifiers), etc.

These linguistic areas/diffusion zones all deserve more attention, and it is in particular in the study of diffusion among Mayan languages that we can hope to untangle some of the remaining issues involving subgrouping and whether certain shared changes happened independently or are due to diffusion.

9 PROPOSALS OF REMOTE RELATIVES OF MAYAN LANGUAGES

Numerous proposals of distant genetic relationships have attempted to link Mayan with other families, for example with Araucanian (Mapudungun) (Stark 1970), “Amerind” (Greenberg 1987), Arawakan, Chipaya-Uru, Hokan, Hokan-Siouan, Huave, Lenca, Mixe-Zoquean, Paezan, Penutian, Tarascan, Totonacan, and Yunga, among others. Suffice it to say, most of these have been discredited. For most, the evidence presented is insufficient to eliminate accident or diffusion as possible explanations, and often either flawed methods or inappropriate application of appropriate procedures were involved, resulting in proposals that fail to reach a level of reasonable plausibility (see Campbell 1997a; Campbell and Poser 2008). The proposal that initially seemed suggestive to join Mayan with Chipaya-Uru (Olson 1964, 1965), to which Yunga was added (Stark 1972), has not held up under examination (Campbell 1973c). The so-called Macro-Mayan
hypothesis, actually a series of interrelated hypotheses, would link Mayan with Mixe-Zoquean and Totonacan, sometimes also with Huave (see Radin 1924; McQuown 1942, 1956; Brown and Witkowski 1979, among others). The evidence presented was insufficient to support the claimed connections. The only proposal of an external kinship between Mayan and some other family so far which seems to have a chance of holding up is with Mixe-Zoquean. Though the proposal seemed plausible, earlier work on the topic failed to show that borrowing and accidental similarity could not have accounted for the evidence presented on the proposal’s behalf (see, for example, Brown and Witkowski 1979). However, David Mora-Marín’s (2016) recent investigation, utilizing careful methods, makes this proposal of genetic relatedness much more plausible. Attempts to find other remote relatives of Mayan will no doubt continue. It is impossible to anticipate how successful they may be, but it is unlikely that striking breakthroughs are in store, and proposals that do not follow careful, appropriate methods will surely not hold up to scrutiny.

10 PM LINGUISTIC PREHISTORY

Studies of Mayan linguistic prehistory have reached numerous rich conclusions (see in particular Kaufman 1976, this volume). Kaufman (1976) had hypothesized that PM was spoken in the Cuchumatanes Mountains of Guatemala, around Soloma, c.2200–4200 BP, where speakers exploited both highland and lowland ecological zones. He has revised that now to locate the PM homeland around Uspantán (Kaufman, this volume). Reconstructed vocabulary shows PM speakers to have been highly successful agriculturalists, with the maize complex at the core of a full range of Mesoamerican cultigens. The reconstructed vocabulary of PM reveals a culture characterized by various Mesoamerican cultigens and domestic animals, the maize complex, various Mesoamerican and Mayan items of material culture, aspects of commerce, its own ritual and religion, and social organization. (See Kaufman, this volume, for a full description of the lexical items that reflect these cultural domains.)

A brief summary of Mayan diversification follows (for a fuller account, see Kaufman 1976, this volume). The glottochronological dates associated with these various events are Kaufman’s; many dispute the accuracy of glottochronology, but at least the dates can be taken as reflecting a general relative chronology. PM diversified around 4,200 years ago, ultimately occupying the areas of the present-day languages, when Huastecan separated from the rest of the family, leaving the highlands, going down the Usumacinta River. Yucatecan split off from the remaining body of Mayan next, c.3900 BP, then moved down into the lowlands c.3500 BP. Eastern Mayan branched off from the main remaining body of Mayan next at c.3600 BP, and then branched into Greater K’ichean and Mamean c.3400 BP. Both Greater K’ichean and Mamean began to diversify internally at around 2600 BP. Kaufman hypothesizes that Ch’olan-Tseltalan (Greater Tseltalan) and Greater Q’anjob’alal belong to a single branch, labeled Western Mayan, which broke up c.3000 BP. Ch’olan-Tseltalan (Greater Tseltalan), in his view, moved down into the lowlands after 3000 BP. Each of these, Ch’olan-Tseltalan (Greater Tseltalan) and Greater Q’anjob’alal, began diversifying at c.2100 years ago. Tseltalan speakers moved to the Chiapas highlands from the Mayan lowlands c.2200 BP. The Lowland Mayan Linguistic Area was formed during the Classic Maya period, contributing many loanwords both within the Mayan family and to neighboring non-Mayan languages and diffused structural traits (Justeson et al. 1985). The K’ichean groups expanded into eastern and southern Guatemala quite late, after 1200 AD. Much of eastern Guatemala below the Motagua River was
occupied by Xinkan speakers, though Poqomam groups invaded their territory after the conquest of the Rabinal Valley by the Rabinal lineage of the K’iche’ had displaced the Poqomam, separating them from their Poqomchi’ relatives around 1250 AD. (See Campbell 1988, 1997b).

A persistent question is, how did closely related Huastec (in Veracruz and San Luis Potosí) and Chicomuseltec (in Chiapas) come to be separated by such a distance, and when did that happen? Ideas include: (1) Huastecan migrated north after separating from the rest of the Mayan family, later diversified, and Chicomuseltec then migrated back to be next to other Mayan languages; (2) Huastecan stayed near the other Mayan languages, diversified, and then Huastec went north and Chicomuseltec stayed behind; (3) Huastecan went partway between current Huastec territory and the rest of the Mayan area, split up there, and then Huastec continued on north to its present location while Chicomuseltec migrated back to its location next to other Mayan languages. Whatever the truth, it is clear that Huastecan was in contact with languages of the Maya lowlands, since both Huastecan languages share several sound changes and some morphological similarities due to contact with these languages (see Norcliffe 2003; Law 2014). For example, the Huastec word *tak’in ‘silver, money, precious metal’, has received commentary, since it seems clearly borrowed from a lowland Mayan language. It is analyzable, composed of pieces that in PM would be *taʔ ‘excrement’ + *q:iŋ ‘sun, day’, a Mesoamerican calque, as in Nahuatl teo:kwitlatl ‘gold, precious metal’ (teo: ‘god’ + kwitlatl ‘excrement’). However, Huastecan has *k’ih ‘day’, not *k’in, which is the form Ch’olan-Tseltalan and Yucatecan have. This thus is a borrowing from one of those languages into Huastecan, after Huastecan had changed *ŋ to h in this position (see Norcliffe 2003; cf. Campbell 1988:211; Kaufman 1980). Huastecan shares with lowland Mayan languages (Ch’olan-Tseltalan and Yucatecan) and some Greater Q’anjob’alan languages the changes: *r > y, *q > *k (and *q’ > *k’), and *k > č (and *k’ > č’). However, because the complicated conditioning environments for the changes *k > č and *k’ > č’ in Ch’olan-Tseltalan languages (see Kaufman and Norman 1984) are different from in Huastecan, this change (or at least aspects of the change) had to have happened independently in these different subgroups, thus this particular change is not compelling evidence of later contact among the languages of these subgroups.

These kinds of evidence of Huastecan contact with lowland Mayan languages would seem to favor a view of Huastecan being nearer other Mayan languages before diversifying, with Huastecan then later migrating north. With a location closer to the body of Mayan languages, the coincidence of Chicomuseltec ending up where it did is less surprising, and does not need an explanation of how it got exactly there that a surprising back migration from present-day Huastec territory would require.

Kaufman (this volume, Kaufman and Justeson 2009:68, 70–2) argues that there are six loans from pre-proto-Huastecan into languages of central and northeastern Mexico that provide evidence that Huastecan phonology differed little from PM when it arrived in or near its ethnohistorically known location, that is, supporting the view that Huastecan went north early, and then only later Chicomuseltec separated and ended up in Chiapas next to other Mayan languages. It is unlikely that most linguists will find these cases convincing, though unfortunately, there is insufficient space here for the evaluation they deserve. Briefly, one is Yemé xat ‘how many?’ < pM *xar ‘how many?’ (Huastec xay). But why would a language borrow a word meaning ‘how much?’, and /t/ is not compelling evidence of /r/ in an assumed donor language, especially not just a single example with /t/ thought to connect with /r/. It is quite possible that accidental similarity provides stronger possible explanation for this case. Another involves ‘to walk’ in Tarascan, but
verbs are rarely borrowed, especially not ones with common meanings, and Tarascan is not especially close to Huastec geographically. Another involves ‘bat’ in Proto-Oto-Pamean, a word not often borrowed anywhere. Other examples putatively reflect Huastec(an) before the change of *k(‘) > č(‘) (or a corresponding sound). However, Yemé kamaw ‘to die’, similar to PM *kam ‘to die’ (Huastec čem, čam) is probably just an accidental phonetic similarity; a verb meaning ‘to die’ is hardly ever borrowed. Tarascan khamé-ri ‘bitter’ (cf. PM *k’ah ‘bitter’) also is an unlikely loan, and together with kapárhi ‘bumblebee’ (cf. PM *ka:b’ ‘bee, honey’) is probably accidentally similar; what accounts for the extra sounds in these Tarascan forms that do not match sounds of Mayan words? In face of the evidence of later contacts with languages of the Mayan lowlands, the case for Huastecan being in Huastec territory early and then Chicomuseltec coming back later seems less likely.

There are very few cases such as the tak’in ‘precious metal’ one of later loans from other Mayan languages into Huastecan. John Justeson (personal communication) points out that there was arguably Mayan presence in the epi-Classic period in central Mexico at Cacaxtla and Xochicalco, and that Chontal were known travelers, so that Huastecan could have gotten Mayan loans long after Huastec was in its present location.

NOTES

1 I thank John Justeson and Terrence Kaufman for valuable comments on an earlier version of this paper. They do not, however, agree with everything presented here.


The phonetic symbols employed here are those common to Mayanists and Americanist scholars. Their IPA equivalents where different are:

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2 Kaufman (2015) has a different analysis and presents arguments in favor of an original and underlying morpheme-initial glottal stop and against vowel-initial forms. While all the cases he points out indeed point to initial glottal stops, I believe that in all (or nearly all), the insertion of a phonetic glottal stop before vowel-initial morphemes can be predicted from context when morphemes come together. This is an important issue, however, and deserves careful consideration.
3 PM *

underwent several conditioned changes in Huastecan; the exact conditions for
the Huastecan reflexes are complicated:

*ŋ > w /# (sometimes Ø, conditions yet to be determined)
*ŋ > h /__# (and *ŋ > w / u, o __#, though with some variation)

4 Some have speculated that a change of r > d followed by d > t might not seem unnat-
ural; however, creation of a voiced stop d in a system that has no other voiced stops
would be highly unlikely.

5 Formerly, the Tsotsil of San Bartolomé de los Llanos (a.k.a. Carranza Tsotsil) had been
reported also to have a tonal contrast; however, Herrera Zendejas (2013) argues convinc-
ingly that it does not have phonemically contrastive tone, but rather that a vowel before
a glottalized consonant becomes predictably laryngealized and has a falling pitch.

REFERENCES


Barrett, Rusty. 2002. “The Huehuetenango Sprachbund and Mayan language standardiza-
tion in Guatemala.” In Proceedings of the 38th Chicago linguistics society: The panels,
ed. by Mary Andronis, Erin Debenport, Anne Pycha, and Keiko Yoshimura, 309–18.
Chicago: Chicago Linguistics Society.

Berendts, Carl Hermann. 1876. “Remarks on the centres of ancient civilization in Central
America and their geographical distribution.” Bulletin of the American Geographical


Campbell, Lyle. 1973c. “Distant genetic relationships and the Maya-Chipaya hypothe-


Campbell, Lyle. 1977. Quichean linguistic prehistory (University of California Publica-

In Phoneticism in Mayan hieroglyphic writing, ed. by John Justeson and Lyle Campbell,

Campbell, Lyle. 1988. The linguistics of Southeast Chiapas (Papers of the New World

Campbell, Lyle. 1990. “Philological studies and Mayan languages.” In Historical linguis-

Campbell, Lyle. 1996. “On sound change and challenges to regularity.” In The compar-
ative method reviewed: regularity and irregularity in language change, ed. by Mark

Campbell, Lyle. 1997a. American Indian languages: the historical linguistics of Native


Hervás y Panduro, Lorenzo. 1800–05. *Catálogo de las lenguas de las naciones conocidas y numeracion, division, y clases de estas según la diversidad de sus idiomas y dialectos*. Madrid: Administracion del Real Arbitrio de Beneficiencia. (See also: 1784–87. *Catalogo delle lingue conosciute e notizia della loro affinità e diversità.*)


Law, Danny. 2014. Language contact, inherited similarity and social difference: the story of linguistic interaction in the Maya lowlands. Amsterdam: John Benjamins.


Ximénez, Francisco. c. 1702. *Arte de las tres lenguas cakchiquel, quiche y tzutuhil*. (Published in 1993 as: *Arte de las tres lenguas kaqchiquel, k’iche’ y tz’utujil* [Biblioteca Guatemala, 31]. Guatemala: Academia de Geografia e Historia de Guatemala.)