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Proto-Mayan *ŋ was a voiced dorsal fricative /ʁ/: a typological approach to reconstruction

Proto-Mayan (PM) is reconstructed with a phoneme *ŋ, which corresponds to a nasal, /ŋ/ or /n/, in Western Mayan and Yucatecan, and to a back fricative /x/ or /h/ in Eastern Mayan (Campbell 1984: 6ff.). Previous phonetic reconstructions have agreed on /ŋ/ as the probable phonetic value of this proto-phoneme, with Campbell stating that "[t]here really is no plausible alternative reconstruction for *ŋ" (2017: 47f.). This paper argues that PM *ŋ is better reconstructed as /ʁ/, making it the voiced counterpart to PM *x /χ/. The reflexes of these two proto-phonemes are summarized in Table 1.

Table 1: Reflexes of the PM dorsal fricatives (Campbell 1984: 6, Can Pixabaj 2007)

PM	Huastecan	Yucatecan	Western Mayan			Eastern Mayan		
			Ch'olan	Q'anjob'al		Mamean	K'ichean	
	Huastec[1]	Yucatec	Ch'ol	Popti', Mocho'	Chuj	Mam	Q'eqchi'	Uspantec
*ŋ	*w, Ø, h, j*	*n*	*n*	*ŋ*	*ŋ*	*x*	*h*	*/ˋːχ/*
*x	*h*	*x*	*h*	*h*	*x*	*x*	*x*	*/χ/*

Uspantec provides the most direct evidence for our reconstruction of PM *ŋ and *x as a voiced-voiceless pair. These two proto-phonemes merge as /χ/ in Uspantec, except in word-final position, where the distinction is maintained on the preceding vowel, which lengthened and acquired a low tone only before PM *ŋ. These effects receive a natural explanation if pre-Uspantec had /ʁ/ for PM *ŋ: voiced obstruents are well known to trigger tone depression, for example in Bantu languages (Hyman 2013), and to induce lengthening of preceding vowels, for example in English (Scheer 2017). Note that there are no other voiced obstruents in Uspantek, apart from an implosive *b'* [ɓ], whose status as an obstruent or sonorant is debatable. Phonetically, implosives in Mayan languages are not associated with lowering of F_0 (Frazier 2011), and in Bantu languages, implosives have not been found to pattern as depressor consonants (Hyman 2013).

The remaining EM reflexes of PM *ŋ, as well as the Huastecan reflexes, are all consistent with an earlier value /ʁ/. On the other hand, Western Mayan and Yucatecan show uniformly nasal reflexes that point to earlier /ŋ/. Typological considerations favour reconstructing /ʁ/, rather than /ŋ/, as the proto-phoneme. Those who reconstruct /ŋ/ must assume that Eastern Mayan and Huastecan underwent an unconditioned denasalization of /ŋ/ — a type of sound change which, to my knowledge, has no parallel in world's languages (Kümmel 2007: 75f., 157, 250). There are, however, some parallels for the reverse change — the development of a voiced back fricative or approximant into a velar nasal. For example, the Western Sephardic pronunciation tradition of Hebrew realizes *ʿayin* (earlier /ʕ/) as /ŋ/ in all positions (di Leone Leoni 2008). Similarly, the Mandarin "zero onset", which is often realized as a dorsal approximant or fricative, has developed into /ŋ/ in some dialects (Li 1999: 97–101).

The revision to the phonetic reconstruction of PM proposed here may have consequences for the subgrouping of the Mayan languages. The phonetic development /ʁ/ > /ŋ/ is a shared innovation between Western Mayan and Yucatecan, perhaps suggesting that these groups together constitute a major branch of the language family.

[1] According to Campbell (2017: 57) we find *w* or Ø in word-initial position and *w*, *j*, or *h* in final position.