A summary reconstruction of proto-maweti-guarani segmental phonology
Uma reconstrução resumida da fonologia segmental proto-mawetí-guaraní

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Abstract: This paper presents a succinct reconstruction of the segmental phonology of Proto-Maweti-Guarani, the hypothetical protolanguage from which modern Mawe, Aweti and the Tupi-Guarani branches of the Tupi linguistic family have evolved. Based on about 300 cognate sets from the authors' field data (for Mawe and Aweti) and from Mello's reconstruction (2000) for Proto-Tupi-Guarani (with additional information from other works; and with a few changes concerning certain doubtful features, such as the status of stem-final lenis consonants *r and *ß, and the distinction of *c and *č), the consonants and vowels of Proto-Maweti-Guarani were reconstructed with the help of the traditional historical-comparative method. The development of the reconstructed segments is then traced from the protolanguage to each of the modern branches. A comparison with other claims made about Proto-Maweti-Guarani is given in the conclusion.

Key words: Historical-Comparative Method. Diachronic Linguistics. Linguistic Reconstruction. Tupi Languages. Maweti-Guarani Languages.

Resumo: Este artigo apresenta uma reconstrução resumida da fonologia segmental do Proto-Maweti-Guarani, a protolíngua hipotética intermediária, dentro da família linguística Tupi, da qual se desenvolveram o Mawé, o Aweti e as línguas Tupi-Guarani atuais. Baseando-se em cerca de 300 conjuntos de cognatos, provenientes dos dados de campo dos autores (Mawé e Aweti) e dos dados lexicais publicados por Mello (2000, Tupi-Guarani), em informações adicionais de outras fontes publicadas (com algumas modificações relativas a certos aspectos duvidosos das reconstruções atuais do Proto-Tupi-Guarani, como o *status* das consoantes lenes *r e *ß em fim de palavra, e a distinção entre *c e *č), reconstruímos as consoantes e vogais do Proto-Maweti-Guarani com o auxílio do método histórico-comparativo tradicional. Ao fim do artigo, traça-se o desenvolvimento dos segmentos reconstruídos desde a protolíngua até cada um dos três ramos modernos. Na conclusão, oferecemos uma comparação rápida com outras hipóteses sobre o Proto-Maweti-Guarani.

Palavras-chaves: Método Histórico-Comparativo. Linguística Diacrônica. Reconstrução Diacrônica. Línguas Tupi. Línguas Maweti-Guarani.

INTRODUCTION

Of the ten branches of the Tupi family – one of the largest language families in South America, with about 50 languages spoken in lowland South America, mostly south of the Amazon river (see figure 1) (Rodrigues, 1999, Rodrigues; Cabral, 2012) – three (Mawe, Aweti, Tupi-Guarani) form a single superordinate branch, here called Maweti-Guarani (abbreviated from **Mawe**-**Aweti**-Tupi-**Guarani**) (see figure 2). First proposed by Rodrigues (1984/85), this branch has found further support in the literature (Rodrigues; Dietrich, 1997), Meira (2006), Drude (2006), Corrêa da Silva (2007, 2010), Galucio *et al.*, (2015). Working on these three branches and also in the larger context of the Tupi Comparative Project, we found many confirmations for this hypothesis and take it here for granted as our starting point.

The main purpose of this paper is to report on some of the results obtained by the authors in their ongoing efforts to reconstruct the protolanguage of the Maweti-Guarani branch, for which basic reconstructions of segmental phonology have been proposed (Rodrigues; Dietrich, 1997), Rodrigues (2005, 2007), (Rodrigues; Cabral, 2012), and the subordinate Proto-Tupi-Guarani, which has been reconstructed in more detail, including phonology and aspects of morphosyntax in Lemle (1971), Jensen (1998, 1999), Schleicher (1998), Mello (2000), and implicitly in (Rodrigues; Dietrich, 1997). Given space restrictions, the results are here simply presented and illustrated with a few examples, without much attention to exceptions or problematic cases. More detailed arguments and a full list of cognates will be given in Meira; Drude (in prep.).

The reconstruction presented here is based on the traditional 'bottom-up' historical-comparative method (Campbell, 2004). The available lexical data for three independent sub-branches were examined, and approximately 300 cognate sets involving Mawe, Aweti, and Proto-Tupi-Guarani (= PTG) were identified (the Mawe and Aweti lexemes were taken from the authors' field data; the PTG lexemes came mostly from Mello, 2000, with a few items taken from Rodrigues; Dietrich, 1997). By comparing these cognates, regular correspondence sets were established, on the basis of which specific protosegments were reconstructed for Proto-Maweti-Guarani (= PMAG). (Note that in this work, we do not offer comparisons and possible correspondences to Tupi languages outside Maweti-Guarani.) This 'bottom-up' approach differs from the 'top-down' or 'sandwich' approach taken for instance in Corrêa da Silva (2010), in which the probable PMAG reflexes of Proto-Tupi segments as proposed by Rodrigues were investigated on the basis of cognates from the three sub-branches. This approach has its own merits, as well as its own problems: by using Proto-Tupi segments as the starting point, it assumes the correctness of said segments and is thus unable to identify potential flaws in the Proto-Tupi reconstruction. The traditional, bottom-up approach used to obtain the results presented here avoids this difficulty[1].

PMAG SEGMENTAL PHONOLOGY

Table 1 below summarizes the segment inventory of the three branches of Maweti-Guarani, as well as the reconstructed PMAG inventory proposed in this paper.

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[1] To mention one important example: with the bottom-up approach, we were able to identify one problem with the reconstruction of the so-called "relational prefixes" to Proto-Tupi. As explained in detail in Meira; Drude (2013), the reconstructed consonant *T (for PMAG we here label it *ti; see section 'Labial and velar stops', below) and its reflexes can account for the current distribution of forms in the present-day languages without positing the reconstruction of a proto-"relational prefix" to PMAG, and, *a fortiori*, also to Proto-Tupi, thus challenging the Proto-Tupi "relational prefix" *t^2-, reconstructed implicitly in Rodrigues; Dietrich (1997), and explicitly in Rodrigues (2005) and Rodrigues; Cabral (2012).

MONDE
Gaviao, Cinta-larga,
Zoro, Arua, Surui

RAMARAMA
Karo (Arara)

PURUBORA

ARIKEM
Karitiana

TUPARI
Makurap, Mekens,
Tupari, Wayoro, Akuntsu

JURUNA
Juruna, Xipaya

MUNDURUKU
Munduruku, Kuruaya

MAWETI-GUARANI
Mawe, Aweti

TUPI-GUARANI
I. Guarani; II. Guarayo;
III. Tupi; IV. Tembe;
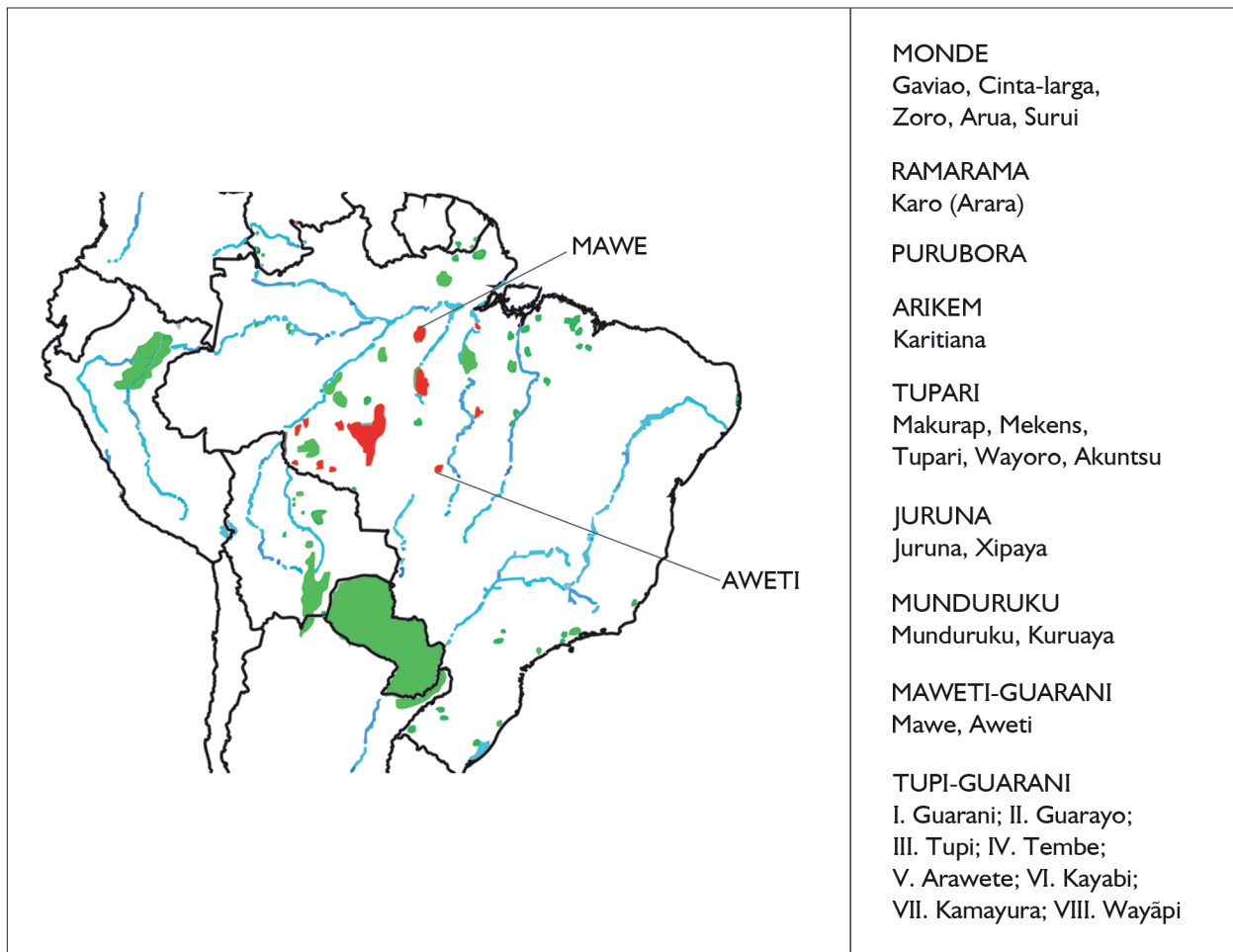V. Arawete; VI. Kayabi;
VII. Kamayura; VIII. Wayãpi

Figure 1. Geographic distribution of the languages of the Tupian family in South America (Tupi-Guarani branch in green, others in red; Mawe and Aweti branches indicated)
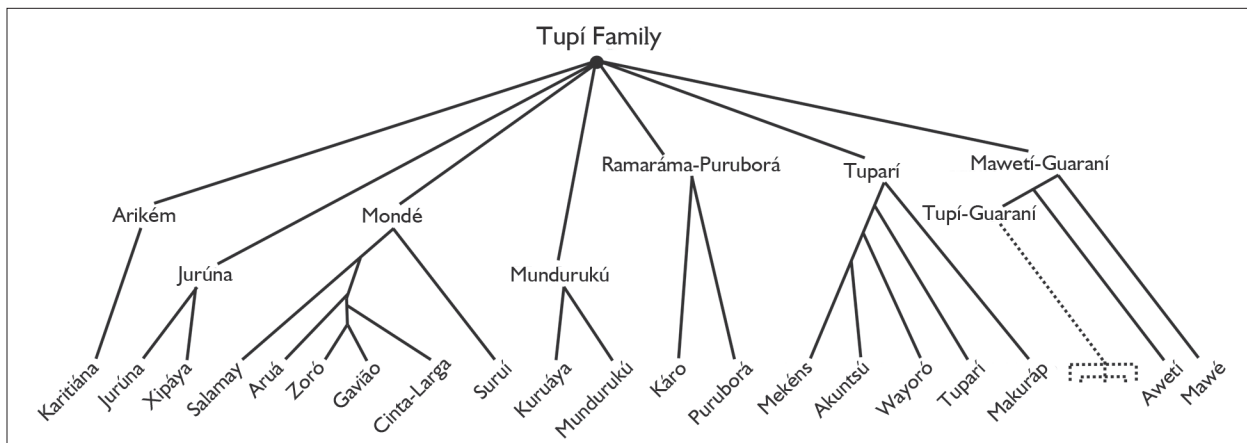
Figure 2. Currently hypothesized internal classification of the Tupian family

Table 1. Maweti-Guarani segmental inventories (PTG from Rodrigues; Dietrich, 1997).

Mawe	Aweti	PTG	PMAG
i ɨ u	i ɨ u	*i *ɨ *u	*i *ɨ *u
e o	e o	*e *o	*e *o
a	a	*a	*a
(± nasality, ± length)	(± nasality)	(± nasality)	(± nasality, ± length)
p t k ʔ	p t k ʔ	*p *t *k *ʔ	*p *t *k *ʔ
s h	c [ts]	*pʷ *kʷ	*kʷ
m n ŋ	z [ʐ]	*pʲ *kʲ	*tʲ
r [ɾ]	m n ŋ	*c [ts]	*ß
w j	r [ɾ]	*č [tʃ]	*m *n *ŋ
	l	*ß	*r [ɾ]
	w j	*m *n *ŋ	*w *j
		*mʷ *ŋʷ	
		*ɾ	
		*w *j	

The vowel inventories are very similar: the three branches have six vowels with contrastive nasality (6x2 = 12 vocalic phonemes). In addition, Mawe also has contrastive vowel length, which increases the size of its vowel system to 24. In contrast, the Mawe consonant system is the poorest: only 12 consonantal segments, while Aweti has 13 and PTG, according to published reconstructions, has around 19. The most important differences are the affricates and fricatives (Mawe has *s* and *h*, missing in the other branches; Aweti has *z* [ʐ], a unique sound in the Tupian family, and *c* [ts], also found in PTG; in addition, PTG, as postulated by Rodrigues; Dietrich (1997), also has *č* [tʃ]. Note also the labialized and palatalized consonants in PTG, not found phonemically in Mawe nor Aweti.

The fact that the PTG segmental inventory is reconstructed should not be forgotten. It is here implicitly assumed that the PTG forms are generally correct. There has been, however, criticism of current PTG reconstructions (most notably, in Schleicher (1998)), some of which, in our view, is indeed accurate: we believe that there are problematic points in the current reconstruction of PTG segments in need of careful attention from specialists. Meira; Drude (in prep.), and especially Meira (in prep.), provide further details on these problematic points. Here, however, the current reconstructions (Mello, 2000; Rodrigues; Dietrich, 1997; Jensen, 1998) are assumed to be basically correct, with the following remarks:

(a) we assume that word-final consonants should be reconstructed as *fortis* (*p*, *t*), not *lenis* (*ß*, *r*), given several *fortis* reflexes in present-day languages (e.g. Kamayura, optionally in Tupinamba) and the higher likelihood of lenition rather than fortition in this position, especially when followed by vowel-initial words; e.g., PTG 'leaf' was probably phonologically *op*, not *oß*. Consequently, we adjust the spelling of reconstructed segments, changing the *lenis* consonants of the original sources to their *fortis* counterparts. (Note that intervocalic *ß*, *r* are kept, since they have no *fortis* reflexes in the modern languages and were thus probably already *lenis* in PTG.)

(b) following Schleicher, we provisorily assume that PTG *c* (= [ts]) and *č* (= [tʃ]) were not distinct segments (their reflexes are only different in Guarani and its dialects, and different dialects have different reflexes, which makes

dialectal mixing a plausible possibility in need of further research). In this case, we do not alter the spelling of the reconstructions, since dialectal mixing in Guarani dialects has not yet been investigated; but the reader should keep in mind that correspondences differing only by a *c vs. *č in PTG in our view are most probably one and the same.

Of course, as the reconstruction of PTG evolves and better solutions for these and other problems are found, the reconstruction of PMAG will also evolve. The reader should bear this in mind while considering the results exposed below.

VOWELS

As was seen in Table 1 above, the vowel systems of Maweti-Guarani languages are quite conservative: the same six vowel qualities are found in all branches in identity correspondences, as can be seen in (1). (Sets are identified with a semantic label in small caps; the cognates are always in the order: Mawe : Aweti : PTG.)

(1) ***a** GOOD *kahu* : *katu* : **katu*, DIE (pl) *pap* : *pap* : **pap*, FRUIT *ʔa* : *ʔa* : **ʔa*

   *e BACK *ape* : *ʔape* : **ape*, BLOW *pehu* : *petu* : **peju*, ABOUT *ete* : *eze* : **ece*

   *i EGG *upiʔa* : *n-upiʔa* : **upiʔa*, 3SG *i-* : *i-* : **i-*, SMOKE *i-hiŋ* : *tiŋ* : **tiŋ*

   *ɨ MOTHER *tɨ* : *tɨ* : **čɨ*, FOOT *pɨ* : *pɨ* : **pɨ*, WIND *ɨwɨtu* : *ɨwɨt* : **ɨßɨtu*

   *o HAND *po* : *po* : **po*, LEAF *i-hop* : *op* : **op*, HOUSE *sok* : *ok* : **ok*

   *u FATHER *sup* : *up* : **up*, HOT *sakup* : *akup* : **akup*, EAT *uʔu* : *ʔu* : **ʔu*

There are also identity correspondences for nasal vowels, as shown in (2) (missing cognates are marked with a "−" dash). In addition to them, there are also correspondences involving vowels that were possibly nasalized by a following nasal consonant (e.g., FLEA *juŋ* : *tuŋ* : **tuŋ*, with **[ũ]**, FETID *nem* : *jem* : **nem*, with **[ẽ]**) or by nasal harmony (e.g., MOSQUITO in (2) below, reconstructed with a final underlying ũ and with a phonetically nasalized i − [ĩ] − in the second syllable). For a detailed reconstruction of PMAG nasality and nasal harmony, see Drude (2009)[2].

(2) ***ã** TOOTH *jãj* : *ãj* : **ãj*, BRANCH *jãŋã* : *akã* : **akã*

   *ẽ SWEET *heʔẽ* : *teʔẽ* : **čeʔẽ*

   *ĩ ASHAMED *-tĩ* : − : **tĩ*

   *ɨ̃ SEED *jaʔɨ̃j* : *aʔɨ̃j* : **aʔɨ̃j*

   *õ SHOOT − : *ʔɨwõ* : **ɨßõ*, TWO − : *mokõj* : *mokõj*

   *ũ ANU BIRD *ajũ-nʔi* : *ajũ* : **anũ*, MOSQUITO *watɨʔũ* : *tazɨʔũ* : **jatɨʔũ*

Distinctive long vowels in Mawe were found in correspondences with short vowels in the other languages, as shown in (3), where all clear cases are listed. Since there is no clear conditioning factor for the Mawe long vowels, and since some of the examples are basic, monomorphemic vocabulary items, we reconstruct distinctive vowel

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[2] Drude (2009), on the basis of distributional patterns, argues that the coda nasal consonants in these words are actually realizations of underlying (archi)phonemes not marked for orality or nasality, while the preceding vowels are intrinsically nasal. The question of the "best" analysis for these sequences is ultimately theoretical and beyond the scope of the present work. As the situation is the same in all three branches (and in our reconstruction of PMAG), there is, for the purposes of this work, no practical problem in keeping the usual analysis with a final nasal consonant that nasalizes the preceding vowel.

length to PMAG[3]. Although in principle every single oral and nasal vowel should have a long counterpart, not all combinations are attested in the available cognate sets. Note the absence of clear cases of long nasal vowels, probably a spurious gap, since long nasal vowels do occur in Mawe (e.g., *wĕĕtem* 'to exit, to go out').

(3)   ***aa**   SEARCH *(i)kaatɨ* : *(j)kat* :*ekat*, MOON *waatɨ* : *tatɨ* : **jačɨ*, SEIZE-2 *aat* : − : **(j)at*

       *ee   FLAT *peep* : *ɨwɨ-pep* : **pep*, LICK *eereep* : *ezep* : **erep*

       *ii   SKIN/BODY *piit* : *pit* : **pit*

       *ɨɨ   FLOWER *i-pohɨit* : *ʔa-potɨt* : **potɨt*, DEER − : *tɨ-wapat*, *ɨtɨɨ*

       *uu   BLACK *huun* : − : *un*

Note that not all Mawe long vowels derive from PMAG long vowels. In, e.g., BLOOD *huu* : *uwɨk* : *uwɨ*, unlike BLACK, there is an extra *w* in the Aweti and PTG cognates, which indicates that the long *uu* in the Mawe cognate results from a *uw sequence (PMAG **tjuwɨ(k)* > pre-Mawe **huw(i)* > Mawe *huu*). Similarly, the long *uu* in COME *(u)ut* : *ut* : **ut* occurs only in the third person (*t-uut* 's/he comes'), apparently simply the result of the assimilation of the vowel of the prefix *to-* (cf. *to-ket* 's/he sleeps') to a stem form *ut*[4].

Finally, let us mention here some cases of non-identical vowel correspondences illustrating an interesting combined change. The examples in (4a, c, e) have *ɨ* consistently only in Aweti; in the other branches, mostly *i* occurs.

(4)   a.   CHEST *potiʔa* : *pozɨʔa* : **potiʔa*

       b.   CLOUD *ɨwɨhiŋ* : *ɨwitiŋ* : *ɨßatiŋ*

       c.   MOSQUITO *watiʔũ* : *tazɨʔũ* : **jatiʔũ*

       d.   MAN'S DAUGHTER *sakiʔit* : *atiʔit* : **ajit*

       e.   SHOULDER *jãtiʔipɨ* : *azɨʔip* : **atiʔip*

Our hypothesis for of *i* : *ɨ* : **i* in (4a, c) is that the original PMAG sequence was **ti*, which evolved into *zɨ* in Aweti. Note that, when the sequence *ti* occurs in Aweti (as in 4b, d), it clearly belongs to other correspondences, i.e., it has a source other than PMAG **ti* (see below). Apparently, PMAG **ti* became Aweti *zɨ*, perhaps via **ri* or **rj*, both of which also yield Aweti *z*. The **i > ɨ* change after *z* is probably motivated by the phonetic (retroflex) nature of Aweti *z* [ʐ]: note that the sequence *zi* is synchronically impossible.

The correspondence in (4e) differs from that in (4a, c) only in PTG, where **ɨ* occurs instead of **i*. In this case, we propose that the original PMAG **i* assimilated to the vowel of the final syllable (also **ɨ*) in PTG[5].

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[3] Note that other branches of Tupi (e.g., Tupari, Monde) also have distinctive vowel length. In one case, PMAG vowel length correlates with length in these other branches (cf. DEER − : *tɨ-wapat* : *ɨtɨɨ* above with Tuparian languages like Wayoro *ɨtɨɨ*, Mekens *itsɨɨ*, or Monde languages like Gavião *iitɨì*, Zoro *itii*, Surui *itʃii-ááp*), which suggests that length may be reconstructible to Proto-Tupi. This possibility is worthy of further research.

[4] Some Mawe long vowels are also apparently not underlying: there seem to be certain intonational contexts in which underlying short vowels are superficially lengthened, a topic in need of further attention.

[5] In Mello's (2000) data, some Tupi-Guarani languages have *i* in this word instead of **ɨ*. It is not clear to us why Mello reconstructed **ɨ* in the protoform for this cognate set. It seems to us that PTG may have had **i* (**atiʔip*), in which case (4e) would illustrate the same correspondence as (4a, c). The assimilatory change of **i* to **ɨ* would then have happened only in some branches of Tupi-Guarani, but not at the PTG level.

CONSONANTS

In Maweti-Guarani, consonants (especially apical consonants) often change in unexpected ways, unlike vowels, which are usually quite stable. We will examine these changes in the following sections.

Labial and velar stops

In most Maweti-Guarani languages, morpheme-final stops can phonetically undergo *lenition* (basically, *p* > *ß* or *w*, *t* > *r*, and at least in Aweti also *k* > *ɣ*), when a new vowel-initial element (clitic, affix, often even following words) follows. Furthermore, because of nasal harmony, some languages will also (pre)nasalize stops (*p* > *m/[mb]*, *t* > *n/[nd]*, *k* > *ŋ/[ŋg]*, and also *j* > *[ɲ]*; see Drude (2006) for details) in nasal environments. This explains why correspondences involving stops will sometimes include also their nasal counterparts[6]. For PMAG **p*, exemplified below in (5), in addition to the (very well attested) identity correspondence *p* : *p* : **p*, there is also *p* : *p* : **m*, occurring in nasal environments; they are thus all reflexes of the same protosegment. Phonologically, we assume that (cf. section 'PMAG segmental phonology' above) PTG morpheme-final **ß* in reconstructions by others is really **p*, and the correspondence is also in these cases *p* : *p* : **p*.

(5)   *p* : *p* : **p*   AT/IN *pe* : *pe* : **pe*, BURN *apɨ* : *apɨ* : **apɨ*, ROOT *hapo* : *apo* : **apo*

        Morpheme-finally: THIGH *ʔup* : *ʔup* : **ʔup*, HAIR *hap* : *ap* : **ap*, LEAF *ɨ-hop* : *op* : **op*

        p : *p* : **m*   LIP *hĕpe* : *ĕpe* : **eme*, WOMAN'S SON *mĕpɨt* : *mĕpɨt* : **memɨt*

Likewise, PMAG **k*, in (6), also has identity (*k* : *k* : *k*) and nasal (*k* : *k* : *ŋ*) correspondences, the latter again reflecting different phonological analyses. There is in principle no lenis correspondence (reflecting the fact that PTG word-final **k*, unlike other stops, was reconstructed as *fortis* rather than *lenis*, since it apparently almost never *lenites* in Tupi-Guarani languages), although one can notice that word-final *k* in Aweti can be realized as [ɣ] when a vowel-initial clitic or suffix follows (e.g., *ok* 'house', *oɣ-ɨwo* 'in the house'). This [ɣ] is analyzed as an allophone of *k*, though there is some evidence that it may be in the process of becoming an independent phoneme in Aweti.

(6)   *k* : *k* : **k*   BONE *kaŋ* : *kaŋ* : **kaŋ*, FIELD *ko* : *ko* : **ko*, PULL *ekɨj* : *ekɨj*: **ekɨj*

        k : *k[ɣ]* : **k*   SEIZE *pɨtɨk* : *pɨtɨk* : **pɨcɨk*, HOUSE *hok* : *ok* : **ok*

        k : *k* : **ŋ*   MORTAR *wĕkuʔa* : *ʔĕkuʔa* : **ɨŋuʔa*

None of the correspondences in (5) or (6) involves PTG labialized or palatalized stops, **pʷ*, **kʷ*, **pʲ* and **kʲ*. For **pʲ*, this is not surprising, since it is a rather marginal segment (it has been proposed only in PTG **epʲak* 'to see'). For **pʷ* and **kʷ*, the few available cognates in (7) suggest that these 'segments' are or result from sequences. For **kʲ*, it would seem that the source is simply PMAG **k* when followed by **e*. In PTG, **kʲ* is an extremely rare consonant, only reconstructed before **e* (Mello (2000) has only **kʲet* 'sleep'; Rodrigues (2007) only **kʲet* 'sleep' and **ejkʲe* 'enter'),

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[6]   This depends on the analysis of nasal harmony in a given language. In (5), WOMAN'S SON and LIP have the same pronunciation ([mĕmbɨt], [(h)ĕmbe]) in all branches, but [mb] is synchronically an allophone of /p/ in Mawe and Aweti, but of /m/ in PTG. In other words, PTG postoralizes consonants followed by oral vowels, while Mawe and Aweti prenasalize consonants preceded by nasal vowels. See Drude (2006), Meira; Drude (in prep) for further details.

without clear contrast with *ke[7]. For this reason, we propose that k : c : *kʲ (= *k) and k : t : *kʲ/k both reflect PMAG *k, the former when preceded by *j.

(7)   pu : pu : *pʷ   FINGER (NAIL) puʔujã : puã : *pʷã

         ko : kw : *kʷ   PASS kosap : kwap : *kʷap

         k : c : *kʲ   ENTER we-eke : ece : *(e)jkʲe

         k : t : *kʲ/k   SLEEP ket : tet : *kʲet, DOOR oken-ipɨ : oten : *oken,

                       MAN'S OLDER BROTHER ʔikeʔet : ɨtiʔit : *ʔikeʔɨt

Palatal and alveolar stops

PMAG *t is more complicated. As shown in (8), one does find the expected identity (t : t : *t), also in morpheme-final position (other reconstructions have PTG *r in this position), and nasal (t : t : *n) in the nasal environment. Curiously, non-morpheme-final t : t : *t is a surprisingly small correspondence, with only 7 attested examples (the three in (8), and BURITI (PALM) miriti : — : *muriti, TRAÍRA (FISH) taraʔira : — : taraʔɨr-a, VILLAGE taawa : — : *taßa, and WIND ɨwɨtu : ɨwɨt : *ißitu), most of which are missing in Aweti and probable borrowings in Mawe (presumably, from PTG to Mawe via Lingua Geral: BURITI (PALM), TRAÍRA (FISH), CORN, VILLAGE, WIND; the last three were also considered possible borrowings in Rodrigues; Dietrich (1997)). SLAP could also be a borrowing (cf. Portuguese peteca 'shuttlecock'); only for ASHAMED does this seem unlikely (note that, in both cases, an Aweti cognate is missing). Given this suspicious status of t : t : *t, we propose that t : t : *č/c (assuming, as suggested in section 'PMAG segmental phonology', that PTG *č and *c actually were the same) is the basic correspondence for PMAG *t, in non-morpheme-final, non-nasal contexts.

(8)   t : t : *t   CORN awati : awati : *aßati, SLAP petek : — : *petek, ASHAMED -tĩ : — : *tĩ

         Morpheme-final: FALL aʔat : ʔat : *ʔat, NAME het : et : *et, SALT ukɨt : tukɨt : *jukɨt

         t : t : *n   SALIVA jẽti-hɨ : — : *enɨ, SEE/HEAR wan-ẽtup : (ẽ)tup : *enup

         t : t : *č   BITE ka-tuʔu : tuʔu : čuʔu, PAIN satɨ : atɨ : *ačɨ, EXIT wẽẽ-tem : tem : čem

         t : t : *c   GO to : to : *co, HEAVY potɨj : potɨj : *pocɨj SEIZE pitɨk, pitɨk, *picɨk

The correspondences below, in (9), are ascribed to *t when followed by *i. Basically, PMAG *ti evolves so that ri : zɨ : *ti (r : z : *t) results word-finally, ti : zɨ : *ti (t : z : *t) non-word-finally (i.e., word-initially or word-medially) if no other vowel follows, rj : z : *t if an oral vowel follows, and j : t : *t if a nasal vowel follows. The final correspondence, t : c : ?[8], apparently occurs if *ti is followed by *e; but note that only one example occurs in the available data. It is also

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[7]   Mello has only four cases of PTG *ke: *kerap 'to close', *keramu 'to snore', *purake 'electric eel' and *ukeʔi (doubtful) 'sister/brother-in-law' (the latter apparently related to MAN'S OLDER BROTHER). Mello claims that *k and *kʲ have different reflexes in Sirionó, Apiaka, Kayabi, Urubu-Kaapor and (sometimes) Tembe, but, in his data: (a) these languages are all missing in the sets for *kerap and *ukeʔi; (b) only Sirionó occurs in the *keramu cognate set, where it has the same reflex (kenãmu with k) as in *kʲet (> ke, also with k); and (c) in *purake, Tembe and Urubu-Kaapor both occur with k (murake, purake), while in *kʲet only the Urubu-Kaapor reflex is different (ʃer with ʃ), while the Tembe reflex is simply ker, with the same k as in *purake. There is thus almost no evidence in Mello (2000) to support a distinction between PTG *ke and *kʲe.

[8]   In correspondence sets, "?" stands for an unknown segment.

possible to account for ASHAMED, the best cognate set from *t* : *t* : *t in (7) above, by re-assigning it to *t : *z* : *t* (which is possible because Aweti lacks a cognate in this set). In sum, bringing together the *t correspondences in (8) and (9): PMAG **t#* = *t* : *t* : *r, PMAG * $V_{[+nas]}tV$ = *t* : *t* : *n*, PMAG **ti#* = *ri* : *zɨ* : *ti, PMAG *tiC = *ti* : *zɨ* : *ti, PMAG *tiV$_{[nas]}$ = *rj* : *z* : *t (but *tie = *t* : *c* : *?*), PMAG *tiV$_{[+nas]}$ = *j* : *t* : *t*; elsewhere, PMAG *t = *t* : *t* : **č/c*.

(9)	*t* : *z* : *t	CHEST *poti?a* : *pozɨ?a* : **poti?a*, MOSQUITO *wati?ŭ* : *tazɨ?ŭ* : **jati?ŭ*; see (4)
	r : *z* : *t	TORTOISE *wawori* : *tawozɨ* : *jaßoti, AGOUTI *akuri* : *akuzu* : *?jɨt* : *akuti
	rj : *z* : *t	FIRE *arja* : *aza* : *ata, MANY *-rja* : *-za* : *eta
	j : *t* : *t	FLEA *juŋ* : *tuŋ* : *tuŋ, CURASSOW *mɨjŭ* : *mɨtuŋ*: *mɨtŭ, PLACE *ejam* : *etam* : *etam
	t : *c* : *?*	SQUIRREL *kutiere* : *kuceze?jɨt* : —

In addition to *t, we reconstruct another palatal stop *tʲ for the correspondences shown in (10) below[9]. For non-nasal environments, the proposed distribution is: (a) *h* : *t* : *t after a preceding *j; (b) *h* : *t* : *c after a preceding *i; (c) elsewhere (i.e., without a preceding *j or *i), *s* : *t* : *t word-initially in oral environments, *j* : *t* : *t word-initially in nasal environments, *s* : ∅ : *∅ word-internally in oral environments, and *j* : *j* : *j word-internally in nasal environments. In sum, schematically: PMAG *jtʲ = *h* : *t* : *t, PMAG *itʲ = *h* : *t* : *c, PMAG **#tʲV*$_{[-nas]}$ = *s* : *t* : *t, PMAG **#tʲV*$_{[+nas]}$ = *j* : *t* : *t, PMAG *X$_{[≠i,j]}tʲV_{[-nas]}$ = *s* : ∅ : ∅, PMAG *X$_{[≠i,j]}tʲV_{[+nas]}$ = *j* : *j* : *j[10]. To motivate the distribution proposed for the first two correspondences, it is necessary to examine the person-marking paradigms of *tʲ-initial stems. In (11), comparing the Mawe forms for *set ~ het* 'name' (< PMAG *tʲet) and *tɨ* 'mother (< PMAG *tɨ), we see that the *h*-initial forms of 'name' occur in the same persons in which there is a prefix ending in *i-* on 'mother'. By internal reconstruction, one can restore this *i* in the paradigms that no longer have it, yielding, for 'name', PMAG *uj-tʲet, *e-tʲet, *i-tʲet, which provides the environments for *h* : *t* : *t, *s* : ∅ : ∅, and *h* : *t* : *c. Similarly, for 'tooth', PMAG *uj-tʲãj, *e-tʲãj, *i-tʲãj produces the environments for *h* : *t* : *t, *j* : *j* : *j, and *h* : *t* : *c (see also fn. 8). For further details on this reconstruction, see Meira and Drude (2013).

(10)	*s* : *t* : *t	ARMADILLO *sahu* : *tatu-pep* : *tatu, HUNGER *sɨɨ?at* : — : **tɨ?a-ßot*
	s : ∅ : *∅	PASS *kosap* : *kwap* : *kʷap, HEAD HAIR *asap* : *?ap* : **?ap*
	h : *t* : *t	GOOD *kahu* : *katu* : *katu, FLOWER *i-pohɨɨt* : *?a-potɨt* : *potɨt, SWIM *ɨha* : *ɨta-* : *ɨtap
	h : *t* : *c	'his/her tooth' *hãj* : *tãj* : *cãj, 'his/her name' *het* : *tet* : *cet; see (9) and fn. 8

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[9] As with all reconstructed protosegments, the phonetic quality of the segment we label here as *tʲ is unknown. By its current-day reflexes, it may also have been [c], [tʰ], [t͡s], [t͡ʃ], [t͡ɕ] or similar. An apical stop (component) is probable because in Aweti and PTG it developed into an apical stop or (probably later?) affricate, while in Mawe it often resulted in fricatives and sometimes [h], possibly via ([t͡s], [t͡ʃ], [t͡ɕ] and then) [s], [ɕ] or [ç]. The choice of *tʲ as the label for this protosegment was also inspired by Schleicher's (1998) suggestion, for a similar pattern (internal to PTG), that this would make the PTG reflex *t after *j (PMAG *j-tʲ > PTG *t) be describable as the result of dissimilation. See also the discussion at the end of the section 'The evolution of Maweti-Guarani segmental phonology'.

[10] The details are more complicated than that, since the reflexes of PMAG *tʲ depend also on the syntactic context (*tʲ > PTG *r within phrase boundaries; see Meira; Drude, 2013, in prep.). Note that sets like HAIR *sap* : *ap* : *ap appear to contradict the word-initial correspondence *s* : *t* : *t; this contradiction, however, is only apparent, for two reasons: (a) in Aweti (and in PTG), the originally stem-initial *t* (< PMAG *tj) in the first- and third-person forms has been reanalyzed as part of the preceding prefix – see 'name', 'tooth' in (9) – so that these stems are now vowel-initial in their non-possessed form; and (b) in PTG, the reflexes of word-initial PMAG *tʲ (which, as hinted above, depend on the syntactic context), are traditionally analyzed as ('relational') prefixes and thus eliminated (in our view, wrongly) from the reconstructed PTG stems in the available sources (Mello, 2000; Rodrigues, 2005, 2007). The non-possessed (or 'generic human') forms of these stems, with the prefix-final *t* in Aweti turned back to stem-initial consonant, do follow *s* : *t* : *t* (*set* : *(t)et* : *tet) and *j* : *t* : *t (*jãj* : *(t)ãj* : *tãj).

j : *t* : *t[11]   'non-possessed (generic human) tooth' *jãj, (t)ãj*, *tãj; see (9) and fn. 8

j : *j* : *j   'your tooth' *e-jãj* : *e-jãj* : *e-(j)ãj (pronounced [eɲãj]); see (9), (16), and fn. 8

(11)   Some Maweti-Guarani paradigms (order: first, second, third person)

	Mawe	Aweti[12]	PTG[13]
'mother'	*uj-tɨ, e-tɨ, i-tɨ*	*i-tɨ, e-tɨ, i-tɨ*	*wi-čɨ, *e-čɨ, *i-čɨ
'name'	*u-het, e-set, het*	*i-t-et, e-et, t-et*	*wi-t-et, *e-et, *c-et
'tooth'	*u-hãj, e-jãj, hãj*	*i-t-ãj, e-j-ãj, t-ãj*	*wi-t-ãj, *e-(j)ãj, *c-ãj

Finally, the two exceptional cases of *h* : *t* : *č/c in (12) need to be discussed here.

(12)   *h* : *t* : *č/c   MEDICINE *pohaŋ* : *potaŋ* : *pocaŋ,   EYE *(e)ha* : *(e)ta* : *eča/*eca

Following rule (b) in the preceding paragraph, one would posit a sequence *i-tʲ for these words, which seems odd word-internally, though it is not unthinkable that they were at first sequences of nouns the second of which was marked for third person (*po i-tʲaŋ, *e i-tʲa). A more likely explanation, however, is an earlier consonant cluster: a preceding consonant can influence the reflexes of PMAG *tʲ (e.g., PMAG *ʔip 'tree' + *tʲop 'leaf' > Mawe *ihop* 'leaf', with *h* instead of the *s* usually found intervocalically; cf. PMAG *ʔa 'head' + *tʲap 'hair' > Mawe *asap* 'head hair'). In Meira; Drude (2013, p. 15-17), the allomorphic patterns of stems co-occurring with the gerund suffix *-aw* in Aweti were used to identify the development of *C-tʲ clusters: the final consonant remained fortis if oral, and added an extra oral 'tail' at the end if nasal (*p-tʲ > p, *t-tʲ > t, *k-tʲ > k, *m-tʲ > mp, *n-tʲ > nt, *ŋ-tʲ > ŋk). Since the Aweti cognates contain *t* in both EYE and MEDICINE, we propose that these result from *t-tʲ clusters, probably involving morpheme boundaries (i.e., PMAG *pot-tʲaŋ, *et-tʲa)[14].

Fricatives and approximants (glides)

Most Maweti-Guarani fricatives and affricates were involved in the stop correspondences reviewed in the previous section. Only PMAG *ß remains, with examples like those in (13).

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[11]   Note that *j* : *t* : *t in (8) and (9) are not the same correspondence: they have different distributions. The former, from *tiV[+nas], occurs word-initially (FLEA) and word-internally (CURASSOW, PLACE), while the latter, from *tʲV[+nas], occurs only word-initially ('non-possessed tooth'). In other words, the difference between *tiV[+nas] and *tʲV[+nas] is neutralized word-initially (FLEA *tiuŋ* and 'non-possessed tooth' *tãj have the same initial segments in their reflexes), but not word-internally: compare PLACE *etiam (> *ejam* : *etam* : *etam) with 'your tooth' *etʲãj (> *ejãj* : *ejãj* : *e(j)ãj).

[12]   The Aweti third-person forms have the prefix *i-* ('his/her/its'), used only in female speech; the non-cognate *n(a)-* 'his/her/its', from the male genderlect, is a later development in Aweti.

[13]   The PTG first- and second-person forms have the coreferential prefixes, as reconstructed in Jensen (1999) and (for vowel-initial stems) in Meira; Drude (2013).

[14]   For EYE, additional evidence pointing towards morphological complexity comes from possessive paradigms. In Aweti, the non-possessed form is *ta*, so that the additional initial *e* looks like the extra *e* found in alienable nouns (e.g., *kite* 'knife', *it-e-kite* 'my knife'). In Mawe, *eha* patterns like the (not always semantically alienable) members of the *he* class, characterized by an extra initial *he*: *kise* 'knife', *u-he-kise* 'my knife'. In addition, the third-person form *heha* has an irregular variant *iha*, with the third-person prefix *i-* directly added to the final syllable *ha*, suggesting that the initial *he* may indeed not have been, at least historically, part of the stem.

(13)   *w* : *w* : **ß*   FACE *(e)wa* : *owa* : **oßa*,   TORTOISE *wawori* : *tawozɨ* : **jaßoti*

PMAG **ß* contrasts with the correspondences in (14), here reconstructed as PMAG **w*. Ø : *w* : **w* occurs if the following vowel is **u* (assuming **...uwɨ* > **...uw(u)* > *...uu*; note that the sequence *wu* cannot occur in present-day Mawe); elsewhere, *w* : *w* : **w* is found.

(14)   *w* : *w* : **w*   BIG *wato* : *watu* : **wačuu*,   TAIL *suwaj-po* : *uwaj* : **uwaj*

         Ø : *w* : **w*   BLOOD *suu* : *uwɨk* : **uwɨ*

Contrasting with **ß* and **w*, there are the correspondences listed in (15), for which we reconstruct PMAG **kʷ* (note that the Aweti reflexes are stops, including *k*). Their distribution is as follows: (a) *w* : *k* : **j* occurs before **ɨ*; (b) *h* : *t* : **j* occurs before **u*, in the final syllable of a morpheme; (c) Ø : *t* : **j* occurs before **u*, in a non-final syllable[15]; (d) elsewhere, *w* : *t* : **j* occurs.

(15)   *w* : *t* : **j*   MOON *waatɨ* : *tatɨ* : **jačɨ*, TORTOISE *wawori* : *tawozɨ* : **jaßoti*, RFL *we-* : *te-* : **je-*

         w : *k* : **j*   AX *ɨwɨ-hap* : *kɨ* : *jɨ*, COOKED *wɨp* : *o-kɨp* : **jɨp*, GO DOWN — : *e-kɨp* : **we-jɨp*

         h : *t* : **j*   RED *hup* : *tup* : **jup*, BLOW *pehu* : *petu* : **peju*, NECK *hut-ʔɨp* : *tur-ʔɨp* : **jut*

         Ø : *t* : **j*   SALT *ukɨt* : *tukɨt* : **jukɨt*, KILL *ʔa-uka* : — : **juka*

Finally, there is PMAG **j* from the identity *j* : *j* : **j* in (16), found only syllable-finally. Note that it is different from the *j* : *j* : **j* (< **tʲ*) in (10) above: the latter, unlike the former, occurs only syllable initially, in nasal contexts.

(16)   *j* : *j* : **j*   PULL *ekɨj* : *ekɨj* : **ekɨj*,   FEED *poj* : *poj* : **poj*,   TOOTH *jãj* : *ãj* : **ãj*

Rhotics and liquids

PMAG **r* could in principle be based on the two correspondences in (17). Since, however, the first one occurs only in probable borrowings (note the uncharacteristic unstressed *a* in Mawe *piira* 'fish', suggestive of a borrowing), we only reconstruct the second one as PMAG **r*.

(17)   *r* : *r* : **r*   FISH *piira* : *pira-ʔɨt* : **pira*, CHIEF *morekwat* : *morekwat* : —

         r : *z* : **r*   LICK *eereep* : *ezep* : **erep*,   VULTURE *uruwu* : *uzuwu* : *urußu*, COM.CAUS *er(e)-* : *zo-* : *(e)ro-*

The correspondences in (18) involve either PMAG **r* in nasal contexts, or PMAG **n*; the two sounds are very close, and may have been in variation in some cases already in PMAG. We propose here that *r* : *l* : **r* reflects PMAG **r* in non-word-initial nasal environments, *n* : *l* : **r* reflects PMAG **r* in word-initial nasal environments (i.e., PMAG **rõp*), and that *n* : *j* : **n/r* reflects PMAG **r* or **n* (perhaps in variation) in nasal environments with a palatal element – the *e* in

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[15] An alternative criterion determining the occurrence of this correspondence is probably stress, since, in Maweti-Guarani languages, stress usually falls on the final syllable of a word.

FETID (> PMAG *nem ~ *rem), or an extra *ɨ or *j in DO. Given, however, that the number of examples in the available data is quite reduced, we consider this reconstruction to be preliminary[16].

(18)   r : l : *r   NAVEL pɨrumʔa : pɨlup : pɨru(ʔ)ã,   RED-2 – : pɨlaŋ : pɨraŋ

       n : l : *r   BITTER nop : lop : *rop

       n : j : *n/r   FETID nem : jem : *nem/*rem,   DO nuŋ : juŋ : *ruŋ/roŋ/noŋ

Nasals

The status of nasal consonants in Maweti-Guarani languages depends on the specifics of nasal harmony: sometimes nasal consonants nasalize surrounding segments, sometimes they are nasalized versions of oral consonants (see the sections 'Labial and velar stops' and 'Palatal and alveolar stops'). The reconstruction of PMAG nasal consonants depends therefore on the reconstruction of PMAG nasal harmony, which will not be discussed here in detail (see Drude 2009; Meira; Drude, in prep.). It must be said, though, that nasal harmony makes the status of nasal consonants easier to ascertain at word boundaries than word-internally.

PMAG *m can be safely reconstructed for the identity correspondence in (19), both word-initially and word-finally. Word-internally, it seems to occur mostly in possible borrowings (BEANS kumanã : kumanaʔĩ : kumana); the two clearly non-borrowed examples are in (19).

(19)   m : m : *m O.NZ mi- : mi- : *mi-,   SNAKE moj : moj : *moj,   EXIT wẽẽ-tem : tem : *čem

       RAIN iʔama(a)n : aman : *aman,   GRANDFATHER h-amũ : amũj : *amõj

The correspondences in (20) stem from PMAG *n. The first one, n : n : *n, occurs syllable-finally, and syllable-initially if the following vowel is *i (and in a few possible borrowings: e.g., again, BEANS). The second one, n : j : *n, occurs syllable-initially if the following vowel is not *i (note the similarity with n : j : n/r in (18) above). The third one, j : j : *n, occurs only in one example in the available data; we reconstruct it as *nj or *ni + a vowel, i.e., *anjũ or *aniũ[17].

(20)   n : n : *n   MANIOC mani : mani-ʔok : *mani-ʔok,   TOUCAN jũkan : tukan : *tukan

       n : j : *n   THICK iʔ-anam : ʔajam : *anam,   MAN'S SISTER inɨt : jĩt : *enɨt,   CALL h-enoj : ejõj : *enõj

       j : j : *n   ANU BIRD ajũn-ʔi : ajũ : anũ

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[16] One might also posit an independent PMAG segment *l to account for these correspondences; but, given that most cases attested in our cognate sets involve nasal environments in at least one of the reflexes, this would be a more costly solution. For the time being, we prefer to assume that the nasal environment was lost in Aweti, and occasionally also in PTG, as in BITTER. (Note that the extent of variation in PTG in these cases — cf. FETID and DO — is unclear and in need of further research. Possible nasal alternants of PTG *rop may have been missed in Mello 2000. In this context, it is interesting to mention the Tocantins Asurini cognate -rap, from mo-rap 'to make (something) bitter' in Cabral; Rodrigues, 2003. According to Lemle (1971), Asurini oral a can reflect PTG *o, but also *õ, which merged with it in the process of loss of distinctive vowel nasality in Asurini. A source *rõp ~ *rom is thus not implausible.) However, depending on the nature of final segments and rules of nasal harmony, *rõp could not have been possible but rather realized as *rom [rõm], as is the case in Aweti and probably in PTG (final segments harmonize in nasality with preceding vowels), and the *m would be expected to be preserved.

[17] It is somewhat surprising that *n could become *j without a contiguous palatalizing factor. In section 'Labial and velar stops' above, we proposed *ti or *tj, rather than *t, for j :t : t precisely to avoid such a situation. It is indeed possible that the actual realization of the source of n : j : *n was palatal (*nʲ or *ɲ); but, given its complementary distribution with n : n : *n, and the existence of a better candidate (j : j : *n) for a palatalized segment or sequence, this *nʲ or *ɲ was, at best, an allophone of *n. Note also how phonetically similar n, ɲ and j (and also r) can be in nasal environments, especially in languages in which nasal harmony routinely affects consonantal segments. Changing a previous *n into *ɲ > *j in a nasal environment may therefore not be surprising.

Finally, PMAG *ŋ is also easy to reconstruct on the basis of (21) below, with ŋ : ŋ : *ŋ occurring word-finally and ŋ : k : k syllable-initially.

(21)   ŋ : ŋ : *ŋ   BONE *kaŋ : kaŋ : *kaŋ*,   FLEA *juŋ : tuŋ : *tuŋ*,   SMOKE *i-hiŋ, tiŋ, *tiŋ*

         ŋ : k : k   WASP *ŋap : kap : *kap*, LOUSE *ŋɨp : ʔa-kɨp : *kɨp*, BRANCH *jaŋã : akã : *akã*

         TERMITE *ŋupi-ʔa : kupi-ʔa, kupi-ʔɨ : *kupi-ʔɨ*

Glottals

Finally, there is PMAG *ʔ, a segment that can be easily reconstructed on the basis of the identity correspondence in (22). There are also examples with non-identity correspondences – usually with the glottal being absent in one of the languages – but it is difficult in these cases to know whether the missing glottal stop is really absent or its absence results from mistranscriptions. We will therefore not consider these cases in detail, for which see Meira; Drude (in prep.).

(22)   ʔ : ʔ : *ʔ   FALL *aʔat : ʔat : *ʔat*,   WATER *ɨʔɨ : ʔɨ : *ʔɨ*,   EGG *upiʔa : n-upiʔa : *upiʔa*

THE EVOLUTION OF MAWETI-GUARANI SEGMENTAL PHONOLOGY

Except for the PMAG *i > Aweti *ɨ change in *ti > zɨ (see the correspondences in (9), in section 'Palatal and alveolar stops'), vowels remained mostly unchanged in Maweti-Guarani, with only sporadic cases of assimilation (cf. the discussion of 4e) and a few irregularities (most notably u : o / o : u in, e.g., BIG *wato : watu : waču* or GRANDFATHER *h-amũ : amũj : amõj*) which remain as objects for future research[18]. Consonants, however, underwent several complicated changes, as summarized below.

Of all PMAG consonants, only *m, *j and *ʔ underwent no changes (excluding apparently irregular cases of loss of the former two; see Meira; Drude, in prep.).

PMAG *p, *t ,*k were nasalized (phonemically, though not phonetically) to *m, *n, *ŋ after a nasal vowel in PTG (WOMAN'S SON *mẽpɨt > *memɨt*); in current reconstructions, *p and *t also lenited to *ß and *r word-finally, though it seems more likely that they had not yet lenited in PTG times (DIE *pap > *pap*, not *paß*; NAME *tʲet > *(r)et*, not *(r)er*). The PTG labialized and palatalized stops (*pʷ, *pʲ, *kʷ, *kʲ, *ŋʷ, *mʷ) appear to result from earlier vowel sequences (PASS *kotʲap > *kʷap*) or palatalization (SLEEP *ket > *kʲet*, *kʲ having a doubtful status in PTG). Aweti shows an unusual change of *k to t before e and i, and to c in that position after j (ENTER), probably also via palatalization.

PMAG *ß and *w merged in Mawe and Aweti (TORTOISE *kʷaßoti > wawori, tawozi*). PMAG *w and *kʷ merged also in Mawe, both being lost before *u (but *kʷ > h if the syllable was stressed: SALT *kʷukɨt > ukɨt*, RED *kʷup > hup*); in Aweti, *kʷ > t (TORTOISE), except before *ɨ, where *kʷ > k (COOKED *kʷɨp > o-kɨp*). In PTG *kʷ > j (TORTOISE *kʷaßoti > *jaßoti*).

PMAG *ni (or *nj), when followed by a vowel, changed to j in Mawe and Aweti, and to *n in PTG (ANU BIRD *anjũ, *aniũ > ajũ-nʔi : ajũ : *anũ*). In nasal environments, PMAG *ri (or *rj) with a following vowel changed to n in Mawe and to j in Aweti, while in PTG it oscillated between *r and *n (DO *riuŋ, *rjuŋ > nuŋ : juŋ : *ruŋ~*roŋ~noŋ*); elsewhere,

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[18] Vowels did remain mostly stable between PMAG and PTG, but there are a few instances of more substantial changes between PTG and the present-day Tupi-Guarani languages. Leite (1982, 2012) describes how Tocantins Asurini merged PTG *ã, *õ, *o and *u into o (with some o's later becoming a's), while Tapirape underwent a push-chain change in which PTG *ã became ĩ, *a became *ã, *o became a, and *u became o, and Guajajara changed *ã (and a few cases of *a) into *ə and denasalized *ĩ, *ẽ, *ũ, and õ into i, e, u, and o.

*r in nasal environments changed to Aweti *l* (NAVEL **pɨrumʔã > pɨlup*), and to Mawe *n* word-initially (BITTER **rõp >* *nop*; cf. Aweti *lop*). In other, non-nasal, environments, **r* was conserved in Mawe and PTG but became **z* in Aweti (LICK **eereep > eereep* : *ezep* : **ereß*)[19].

PMAG **ti* (or **tj*) became *c* before *e* and *z* before other vowels in Aweti (SQUIRREL **kutiere, *kutjere > kuceze ʔjɨt*, FIRE **atia, *atja > t-aza*); before consonants and word-finally, it became Aweti *zɨ* (CHEST **potiʔa > pozɨʔa*, TORTOISE **kʷaßoti > tawozɨ*). In Mawe, PMAG **ti* (or **tj*) became *rj* before an oral vowel (FIRE **atia, *atja > arja*) and *ri* word-finally (TORTOISE **kʷaßoti > wawori*), and *j* before a nasal vowel (FLEA **tiuŋ, *tjuŋ > juŋ*); in PTG, it became **t* before a vowel (FIRE **atia, *atja > *ata*). Elsewhere, PMAG **t* was conserved in Mawe and Aweti. In PTG, it became **r* word-finally according to current reconstructions, but this is probably not correct (NAME **tʲet > *er*, probably **et*); elsewhere (i.e., syllable-initially, before all vowels except *i*), it became **č/c*.

Finally, PMAG **tʲ* was not retained as such in any language. After **i* or **j*, **tʲ* became *h* in Mawe, perhaps via an intermediate affricate or fricative phase (in (11) and fn. 5, 'his/her name' **i-tʲet > het*; 'my name' **uj-tʲet > uhet*) and *t* in Aweti (**i-tʲet > *tet > t-et* 'his/her name', **uj-tʲet > *wi-tet > it-et* 'my name'); in PTG, **tʲ* became **t* after **j* (**uj-tʲet > *wi-tet > *wit-et* 'my name') but **č/c* after **i* (**i-tʲet > *cet* 'his/her name'). If no *i* or *j* preceded it, **tʲ* became *j* ([ɲ]) in nasal environments in Mawe (in (11) and fn. 5, 'non-possessed tooth' **tʲãj > jãj*, 'your tooth' **e-tʲãj > e-jãj*), thus merging with **tj*, **ti* + vowel (compare FLEA **tiuŋ, *tjuŋ > juŋ*, PLACE **etiam, *etjam > ejam*). In Aweti and PTG, in nasal environments, **tʲ* became *j* word-internally and *t* word-initially ('non-possessed tooth' **tʲãj > tãj, *tãj*, but 'your tooth' **e-tʲãj > e-jãi, *e-jãj*); in both cases, **tʲ* remained distinct from **tj*, **ti* + vowel, which became *t* (compare FLEA **tiuŋ, *tjuŋ > tuŋ, *tuŋ*, PLACE **etiam*, **etjam > etam, *etam*). After **p*, PMAG **tʲ* disappeared in Mawe (LEAF **ʔɨp* 'tree' + **tʲop* 'leaf' > *ɨhop*); after all consonants, it also disappeared in Aweti, but leaving the final consonant unlenited or even, if nasal, reinforced by an oral 'tail' (**ptʲ > p*, **mtʲ > mp*). Elsewhere, **tʲ* became *s* in Mawe (ARMADILLO **tʲajtʲu > sahu*, PASS **kotʲap > kosap*); in Aweti and PTG, it was conserved as *t* word-initially (ARMADILLO **tʲajtʲu > tatu-pep, *tatu*), and disappeared elsewhere (PASS **kotʲap > kwap, *kʷap*).

For the purpose of subclassification, it is important to determine whether any changes occurred in more than one branch, since they are potential shared innovations providing supporting evidence for a common higher-order node. Mawe and PTG apparently share no changes; Mawe and Aweti, on the other hand, share the merge of **ß* with **w* into *w* and the change of **ni* (or **nj*) to *j* before a following vowel. Since, however, **ß > w* is a fairly frequent change[20], and **nj > j*, besides being frequent typologically (especially, as in this case, in nasal contexts), is also only weakly attested (only one example, ANU BIRD), they do not provide a good argument[21]. On the other hand, the changes shared by Aweti and PTG — involving the development of PMAG **tʲ* — are rather complex, context-dependent, and not really frequent. They are proposed here (and also in Meira; Drude (2013)), in addition to what Meira (2006); Corrêa da Silva (2007) had already suggested, as further evidence for an Aweti-PTG branch ('Aweti-Guarani' or PAG; see Meira; Drude (in prep.) for further details and a first reconstruction of PAG).

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[19] This leaves open the origin of the synchronically attested cases of Aweti *r*. The available cognates, including those attested only in Aweti and Tupi-Guarani, like 'acará fish' (Aw *akara*, PTG **akara*) or 'anhinga bird' (Aw *arara*, PTG **karara*), are suggestive of borrowing.

[20] Mello (2000, p. 256-257) has PTG **ß > w* in a number of Tupi-Guarani languages, including some belonging to different subbranches – e.g., Tembe, Xeta, Kamayura, etc. – thus implying that the change happened independently.

[21] A better argument may come from PMAG **ti*V > Mawe *rj*V, Aweti *z*V, and PMAG **ti#* > Mawe *ri*, Aweti **zɨ*, if an intermediate phase **r* is posited: **ti*V, **ti#* > **rj*V, **ri*, unchanged in Mawe, but > *z*V, *zɨ* in Aweti (note that PMAG **r* > Aweti *z*). There are, however, complications (PMAG **ti*C > *zɨ*C in Aweti, but it remained *ti*C in Mawe); note, also, that *t > r* is a frequent change in Tupian languages (also synchronically, as lenition), unlike the changes affecting **tʲ*. For these reasons, we treat the evolution of PMAG **ti* in Mawe and Aweti as parallel developments.

(23)   Changes shared by Aweti and PTG

      PMAG *jtⁱ   >   Aweti, PTG *t*

      PMAG *#tⁱ   > Aweti, PTG *t* (PTG *r* phrase-internally)

      PMAG *tⁱ   >   Aweti, PTG Ø (word-internally, in non-nasal environments)

                       Aweti, PTG *j* (word-internally, in nasal environments)

These shared innovations can be better visualized in the schema in figure 3 below, in which we follow the hypothesized development of non-possessed and the first three person-marked possessed forms of *tⁱet* 'name' from PMAG to Mawe and PAG (= Proto–Aweti-Guarani), and from PAG to Aweti and PTG.

The PAG third-person form is reconstructed as either *i-tet* or *cet*. The Aweti reflex suggests PAG *t*, while the PTG reflex shows the influence of the preceding *i-*. Either Aweti lost the initial *i-* in *i-tet* (an irregularity, since the prefix *i-* is not lost in Aweti in other consonant-initial stems: *ti* 'mother', *i-ti* 'his/her mother', in female speech), or the PAG form had already lost the initial *i-*, and had already changed PMAG *tⁱ to something else, perhaps *c*, which Aweti later changed back to *t* (word-initially, so that *kuceze-ʔit* 'squirrel' remained unaffected). It is also possible that PAG had *i-tet* phonemically (underlyingly) but *cet* phonetically. Later on, more specific Aweti features would have arisen (the reinterpretation of third-person forms as having a prefix *t-*, with consequent reanalysis of the stem as vowel initial: *Ø-tet* > *t-et*; the introduction of a new third-person prefix *n(a)-* in male speech, restricting *i-/t-* to the female genderlect)[22].

A final comment on PMAG historical phonology is how crowded the palato-alveolar area is with various segments and sequences often having surprisingly different reflexes in the present-day languages. Most of the differences between the reconstruction presented here and what can be inferred from other proposals (see next section) are in the palato-alveolar area. It is also here that we find some surprising developments: PMAG *t* palatalizes to PTG *č/c* precisely in non-palatal environments (i.e., when the following vowel is not *i*) and is conserved or lenited in PTG in other environments. Furthermore, *ti* will change in Mawe and Aweti only if another vowel follows (in which case *ti* might be better seen as *tj*) or word-finally. It is as if PMAG speakers really cared about the distinction beween *tV*,*tiV* ~ *tjV* and *tⁱV* sequences: *ti* (*tj*) + V is not palatalized so as not to sound like *tⁱV*[23]. Similarly, *n* in nasal environments

PMAG: *tjet* *uj-tjet* *e-tjet* *i-tjet*

Mawe: *set* *u-het* *e-set* *het*   PAG: *tet* *wi-tet* *e-et* *i-tet* / *cet*

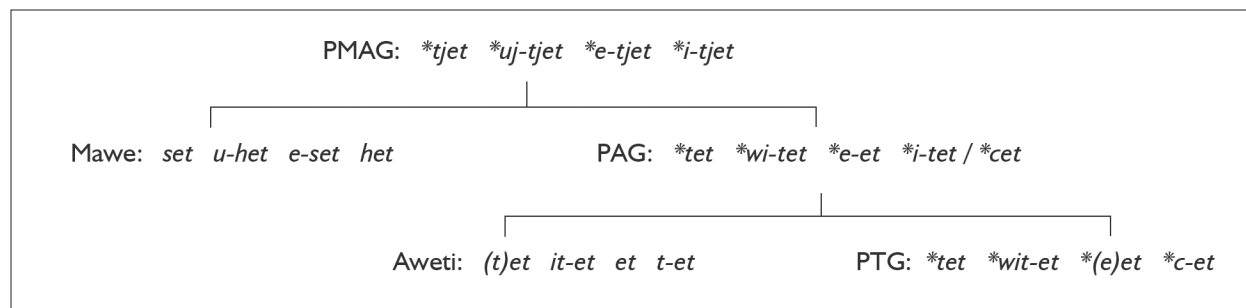Aweti: *(t)et* *it-et* *et* *t-et*   PTG: *tet* *wit-et* *(e)et* *c-et*

Figure 3. The development of PMAG *tⁱ in person-marked paradigms

[22] We note, in passing, that the similarities between the Aweti and PTG person markers (note the reanalysis of the stem-initial *t* as part of the first-person prefixes *it-*, *wit-*) provides further evidence in favor of an Aweti-Guarani subbranch.

[23] Similar distinctions can be found in other languages. In Russian, for instance, the difference between [ta], [tⁱa] and tautosyllabic [tia], [tja] is clearly hearable and orthographically distinguished: [ta] = та, [tⁱa] = тя and [tia], [tja] = тья (compare, e.g., the final syllables of **брата [brata]** 'brother's (genitive)', **тётя [tⁱotⁱa]** 'aunt', and **братья [bratja]** 'brothers (plural)').

becomes *j* ([ɲ]) in Aweti, but not when an **i* follows. Noting also how nasalization and lenition also connect palatal segments, it becomes very easy, in the history of Maweti-Guarani (and probably Tupian) languages, for *t*, *tʲ*, *c*, *č*, *j*, *n*, *ɲ* and *r* to change into each other or to influence each other's evolution.

BRIEF COMPARISON WITH OTHER STUDIES

As was mentioned in the introduction, other studies on PMAG phonology (Rodrigues; Dietrich, 1997; Corrêa da Silva, 2007, 2010) utilized a different, 'top-down' or 'sandwich' approach, usually comparing Proto-Tupi reconstructions (from Rodrigues' work, partially published in Rodrigues; Dietrich (1997), and Rodrigues (2005, 2007)) with Mawe and Aweti words, and with PTG reconstructions, from the same source used here (Rodrigues' work, partially published in various articles; and also Mello (2000), presumably also based on Rodrigues' work). On account of that, it is sometimes difficult to ascertain what exactly the studies would claim as reconstructed PMAG protosegments: the developments in the three branches are usually directly derived from Proto-Tupi protoforms (Corrêa da Silva, 2007, p. 227 mentions MEDICINE *pohaŋ* : *potaŋ* : **pocaŋ* as reflecting Proto-Tupi **cˀ*, without it being clear whether the PMAG reflex was also supposed to be glottalized or not). The comparison below, with Corrêa da Silva (2010), is thus based on our understanding of claims often only implicitly made for PMAG.

Some of the differences stem from the different scope of Proto-Tupi and PMAG reconstructions. For instance, Rodrigues reconstructs a series of glottalized obstruents (**pˀ*, **pʷˀ*, **tˀ*, **cˀ*, **čˀ*, **kˀ*, **kʷˀ*) and a series of prenasalized stops (**ᵐp*, **ⁿt*, **ᵑk*; in Rodrigues; Cabral (2012) **ⁿt* was dropped). Since Rodrigues claims most of these consonants to have merged with their simpler counterparts in Mawe, Aweti and PTG (the evidence for their reconstruction comes from other branches), there is no problem with reconstructing PMAG **p*, **t* and **k* as an intermediate step.

A specific problem, however, arises with Rodrigues' **tˀ*: it is based on correspondences that include the ones for which PMAG **tʲ* is proposed here. This would imply that (Rodrigues') Proto-Tupi **tˀ* became PMAG **tʲ*, a rather unusual change, even with the observations at the end of the previous section in mind. Furthermore, in other branches, there seems to be no clear reflex of a glottal feature, while reflexes of palatal or fricative features abound (e.g., Munduruku *d*, Tupari *h*, Makurap *č*, Gavião *ts*, *dz*, Surui *l*, Kuruaya *l* ~ *ð*, Karitiana *s*, Karo *j*). It seems thus rather unlikely that PMAG **tʲ*, or its Proto-Tupi ancestor, had any glottal coarticulation[24].

In some cases, Rodrigues; Cabral (2012) and the present work disagree on the assignment of correspondences to protosegments. Rodrigues; Cabral's Proto-Tupi **tʲ*, for instance, is based on *t* : *z* : **t* and *rj* : *z* : **t* which are here assigned to PMAG **ti*, **tj* + vowel. If we assume that Rodrigues; Cabral (and Corrêa da Silva (2010)) meant for this PT **tʲ* to still have this form in PMAG, this would imply the reconstruction of **tʲi* (in, e.g., MOSQUITO, here **kʷatiʔũ*, in Rodrigues; Cabral's work **watʲiʔũ*), which seems unnecessary, since, in this position, **tʲi* does not seem to contrast with **ti*[25]. In the absence

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[24] Corrêa da Silva (2007, p. 226-227) mentions also a correspondence *ʔ* : *t* : *t*, exemplified only by HEEL *piʔa-susa* : *a-pita* : **pita*. This is apparently a mistake: Meira's data has only *pia* for Mawe (explicitly contrasted with *piʔa* 'liver'), and Drude's *pi apita* for Aweti (*apita* apparently not occurring by itself). Later, Corrêa da Silva (2010, p. 154) considered this case an irregularity (mentioning also Koch-Grünberg's *pia-zuza* for 'heel', also found in Meira's data as *piasusa*). We note, in addition, that AGOUTI *akuri* : *akuzu ʔjɨt* : **akuti*, here PMAG **akuti*, is given in Corrêa da Silva (2010, p. 154) as (Proto-Tupi) **akutʔi*. Since Corrêa da Silva also claims (on information from Rodrigues, pers. com.) that no cognate of AGOUTI was found outside of Maweti-Guarani, it is difficult to see why it has **tˀ* rather than **t*, even in Rodrigues' reconstruction. (Elsewhere, we saw possible cognates of AGOUTI outside of Maweti-Guarani: Munduruku *akáritʃé* 'dog', Juruna *akulí*, Xipaya *kuzi* 'agouti'.)

[25] The only case outside of possible borrowings is, as mentioned in section 'Palatal and alveolar stops', ASHAMED *tĩ* : — : **tĩ*, which does fit the rules discussed there (see examples in (9), in that section): **tĩ*, being a monosyllable, fits both the word-final and the non-word-final contexts for the evolution of PMAG **ti*; here, we see that the non-word-final context 'won' and PMAG **tĩ* became Mawe *tĩ*.

of this contrast, following Occam's razor, it does not seem necessary to posit an independent PT phoneme *tʲ to account for cases that can be explained by *t followed by *i or *j and a vowel.

Even for PMAG *t, there are differences: Rodrigues assigns j : t : *t to a simple PT *t, leading presumably to PMAG *t, whereas we prefer to see this correspondence as reflecting PMAG *ti or *tj + vowel. Indeed j : t : *t is in complementary distribution with t : t : *t, but so is t : t : *č/c. (In fact, since t : t : *t is, as we saw above, a 'weak' correspondence, with mostly possible borrowings among its examples – except for ASHAMED tĩ : – : tĩ, it is basically in complementary distribution with everything else.) Rodrigues sees t : t : *č/c as reflexes of Proto-Tupi *č and *c, or, as we would see it here, of a single *c (since, as we noted in section 'PMAG segmental phonology', the distinction between PTG *č and *c is not universally accepted, it would be at least hasty to assign it to PMAG or to PT solely on the basis of the dialects of Guarani). If, however, t : t : *č/c is assigned to *t, no new proto-segments need to be posited; by Occam's razor, we again prefer this solution to Rodrigues'. As a consequence, PMAG was, in our view, a language without sibilant fricatives or affricates, all of which, in the present-day Maweti-Guarani languages, result from *t or *tʲ in various contexts.

The last important difference concerns PMAG *kʷ, which Rodrigues reconstructs for Proto-Tupi as *w. Rodrigues; Cabral (2012, p. 508) explicitly disagree with Moore; Galucio's (1994) reconstruction of *kʷ for Proto-Tupari (for a kʷ : w : w : w correspondence), claiming a distinction between PT *kʷ and *w. But here the question of levels becomes crucial: even if Proto-Tupi had *kʷ and *w as distinct phonemes, it does not follow that Proto-Tupari (or PMAG) also did. The examples cited by Rodrigues; Cabral (2012) do not allow strict branch-internal comparison: in 'hole' vs. 'go (pl.)', there were no cognates from Tupari languages in 'hole'; in 'village center' vs. 'yams', only Mekens ekʷat is cited for 'village center', which could be a synchronic compound of ek 'house' with an element wat. For PMAG, it may be that PTG *kʷ, at least in some cases, actually resulted from previous vowel sequences (PASS kosap : kwap : *kʷap) rather than PT *w[26]. Whatever the case might be for Proto-Tupi, for PMAG, Corrêa da Silva (2007, 2010), and Rodrigues; Dietrich (1997) make claims about the reflexes of Proto-Tupi *kʷ and *w only in specific branches (Mawe, Aweti, PTG), not in PMAG. We prefer to reconstruct PMAG *kʷ because there already is a better candidate for *w, namely the correspondence w : w : *w in (14), section 'Fricatives and approximants', and because the Aweti reflexes (k, t) suggest an occlusive element.

COGNATE SETS

For ease of reference, we list here the cognates presented as examples in the previous sections. The format is: semantic label (in small caps), reconstructed PMAG form (in bold, with an asterisk; segments in parentheses are doubtful; an entire form in parenthesis indicates that a cognate from one of the branches is missing), and the attested cognates (as before, in the order Mawe, Aweti, PTG; a short '–' dash represents a missing cognate). The initial PTG segment that reflects PMAG *tʲ is here written as *(r), since it disappears in certain environments. A parenthetical question mark and comment after a reconstructed PMAG form marks a cognate set suspected to involve borrowing. For a full list of cognates, see Meira and Drude (in prep.).

3SG **i-** *i-* : *i-* : *i-

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[26] It may be that this word did not have *kʷ in PTG, but really a full *ku. Zachary O'Hagan (pers. comm.) reported [i'kua] with [u], not [w], as the Omagua cognate; he futher pointed out that Lemos Barbosa would sometimes write the Tupinamba cognate as <cu(gu) aba> (probably [ku(w)aβa]), suggesting a syllable break between ku and aß-a. This would support our hypothesis that there indeed was a consonant there, ultimately from PMAG *tʲ.

ABOUT ***ete**   *ete* : *ete* : **ece*

AGOUTI ***akuti**   *akuri* : *akuzu ʔjɨt*[27], **akuti*

ANU BIRD ***anjũ**, ***aniũ**   *ajũ-nʔi* : *ajũ* : **anũ*

ARMADILLO ***tʲajtʲu**   *sahu* : *tatu-pep* : **tatu*

ASHAMED **(*tĩ)**   *tĩ* : — : **tĩ*

AT/IN ***pe**   *pe* : *pe* : **pe*

AX ***kʷɨ**   *ɨwɨ-hap* : *kɨ* : **jɨ*

BACK ***(ʔ)ape**   *ape* : *ʔape* : **ape*

BE /LIVE ***eko**   *eko* : *eko* : *eko*

BEANS ***kumana** (? – possible borrowing)   *kumanã* : *kumanaʔĩ* : **kumana*

BIG ***wat(o/u)**   *wato* : *watu* : *wačʲu*

BITTER[28] ***rõp**   *nop* : *lop* : **rop*

BLACK ***kʷuun**   *huun* : — : **un*

BLOOD ***tʲuwɨ(k)**   *suu* : *uwɨk* : **(r)uwɨ*

BLOW ***pekʷu**   *pehu* : *petu* : **peju*

BONE ***kaŋ**   *kaŋ* : *kaŋ* : **kaŋ*

BRANCH ***tʲakã**   *jãŋã* : *akã* : **(r)akã*

BURN ***apɨ**   *apɨ* : *apɨ* : **apɨ*

BURITI (PALM) **(*m(u/i)riti)** (? – possible borrowing, TG > Mawe)   *miriti* : — : **muriti*

CHEST ***potiʔa**   *potiʔa* : *pozɨʔa* : **potiʔa*

CHIEF **(*morekwat)** (? possible borrowing)   *morekwat* : *morekwat* : — [29]

CALL ***enõj**   *h-enoj* : *ejõj* : **enõj*

CLOUD ***(ɨwɨ)tʲiŋ**   *ɨwɨ-hiŋ* : *ɨwɨ-tiŋ* : *ɨßa-tiŋ*

COM.CAUS (= COMITATIVE CAUSATIVE) ***er(o/e)-**   *er-, ere-* : *zo-* : *ero-*

COME ***ut**   *(u)ut* : *ut* : **ut*

COOKED ***kʷɨp**   *wɨp* : *o-kɨp* : **jɨp*

CORN ***aßati** (? – probable borrowing)   *awati* : *awati* : **aßati*

CURRASOW ***mɨtiũ(ŋ)**, ***mɨtjũ(ŋ)**   *mɨjũ* : *mɨtuŋ* : *mɨtũ*

DEER ***(ɨ)tɨɨ**   — : *ti-wapat*, *ɨtɨɨ*

DIE (PL.) ***pap**   *pap* : *pap* : **pap*

DO ***rj(u/o)ŋ**, ***nj(u/o)ŋ**   *nuŋ* : *juŋ* : **ruŋ* ∼ **roŋ* ∼ **noŋ* (Rodrigues & Dietrich 1997), **noŋ* (Mello 2000)

DOOR ***oken**   *oken-ɨpɨ* : *oten* : **oken*

EARTH **(*ʔɨj)**   *ʔɨj* : — : **ʔɨj*

EAT ***ʔu**   *uʔu* : *ʔu* : **ʔu*

EGG ***upiʔa**   *upiʔa* : *n-upiʔa* : **upiʔa*

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[27] Final *u* probably from assimilation in non-stressed syllable (the final *ʔjɨt* is stressed): **akuri* > **akuzɨ* > *akuzu*.

[28] This form is odd in that it has the only sequence of a nasal vowel followed by an oral consonant in our cognate sets. There may be further details in its history that need additional clarification.

[29] Not reconstructed in Mello (2000) or in Rodrigues' works, but cf. Kamayura *morerekwat* 'chief' (Seki 2000)

ENTER ***ejke**   *we-eke* : *ece* : **(e)jkʲe*

EXIT ***tem**   *wẽẽ-tem* : *tem* : **čem*

EYE ***et-tʲa**   *(e)ha* : *(e)ta* : *ečа* (Rodrigues and Dietrich 1997), *eca* (Mello 2000)

FACE ***(e/o)ßa**   *(e)wa* : *owa* : **oßa*

FALL ***Ɂat**   *aɁat* : *Ɂat* : **Ɂat*

FATHER ***tʲup**   *sup*[30] : *up* : **(r)up*

FEED ***poj**   *poj* : *poj* : **poj*

FETID ***riem**, ***rjem**, maybe simply ***rem**   *nem* : *jem* : **nem* ~ **rem*

FIELD ***ko**   *ko* : *ko* : **ko*

FINGER (NAIL) ***p(uɁ)u(j)ã**   *puɁujã* : *puã* : **pʷã*

FIRE ***atia**, ***atja**   *arja* : *aza* : **ata*

FLAT ***peep**   *peep* : *ɨwɨ-pep*[31] : **pep*

FLEA ***tiuŋ**, ***tjuŋ**   *juŋ* : *tuŋ* : **tuŋ*

FLOWER ***pojtʲɨɨt**   *i-pohɨit* : *Ɂa-potɨt* : **potɨt*

FOOT ***pɨ**   *pɨ* : *pɨ* : **pɨ*

FRUIT ***Ɂa**   *Ɂa* : *Ɂa* : **Ɂa*

GRANDFATHER ***am(õ/ũ)(j)**   *h-amũ* : *amũj* : **amõj*

GO ***to**   *to* : *to* : **co*

GOOD ***kajtʲu**   *kahu* : *katu* : **katu*

HAIR ***tʲap**   *sap* : *ap* : **(r)ap*

HAMMOCK ***(Ɂ)(i/ɨ)nĩ**   *Ɂini* : *Ɂinĩ* : **inĩ*

HAND ***po**   *po* : *po* : **po*

HEAD HAIR ***Ɂatʲap** (from **Ɂa* 'head' + **tʲap* 'hair')   *asap* : *Ɂap* : **Ɂap*

HEAVY ***potɨj**   *potɨj* : *potɨj* : **pocɨj*

HOT ***tʲakup**   *sakup* : *akup* : **(r)akup*

HOUSE ***(tʲ)ok**   *sok*[32] : *ok* : **(r)ok*

HUNGER ***tʲɨɨɁa(t)**   *sɨɨɁat* : : *tɨɁa-ßot*

KILL (***kʷuka**)   *Ɂa-uka* : : **juka*

LEAF ***tʲop**   *i-hop* : *op* : **(r)op*

LICK ***eereep**   *eereep*[33] : *ezep* : **erep*

LIP ***tʲẽpe**   *jẽpe* : *ẽpe* : **(r)eme*

LOUSE ***ŋɨp**   *ŋɨp* : *Ɂakɨp* (from earlier **Ɂa* 'head' + **kɨp* 'louse') : **kɨp*

MANIOC ***mani**   *mani* : *maniɁok* : **maniɁok* (cf. Aweti, Tupi-Guarani *Ɂok* 'tuber')

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[30] Mawe *sup* is not 'father', but 'semen'.

[31] Aweti *ɨwɨ-pep* means 'ground', apparently from 'earth' + 'flat'. Cf. also Aweti *tatu-pep* 'armadillo'.

[32] Mawe *sok* is not 'house', but 'nest'. The parenthetical ***(tʲ)** in the reconstruction reflects the fact that the PTG cognate, despite being a class II stem (i.e., it occurs with the "relational" *r-* when possessed), has no consonantal onset when non-possessed (**ok*, without **t-* or **c-*), unlike other class II stems. For this reason, it is usually placed in a separate subclass (IIc).

[33] There is some variation in the Mawe data as to whether both vowels in this word are long, or only one of them.

MAN'S DAUGHTER **ťakʷiʔɨt** sakiʔɨt : atiʔɨt : *(r)ajɨt

MAN'S SISTER **(i/e)nɨt** inɨt : jĩt : *enɨt

MAN'S OLDER BROTHER **(ʔ)ɨkeʔɨt** ʔɨkeʔet : ɨtiʔɨt : *ʔɨkeʔɨt

MANY **(e)tia**, **(e)tja** -rja : -za : *eta

MEDICINE **pot-ťaŋ** pohaŋ : potaŋ : *pocaŋ

MOON **kʷaatɨ** waatɨ : tatɨ : *jačɨ

MORTAR **(wẽ)kuʔa** wẽkuʔa : ʔẽkuʔa : *ɨŋuʔa

MOSQUITO **kʷatiʔũ** watiʔũ : tazɨʔũ : *jatiʔũ

MOTHER **tɨ** tɨ : tɨ : *čɨ

NECK[34] **kʷut** hut-ʔɨp [huʔɾɨp] : tur-ʔɨp [tuʔɾɨp] : *jut

NAME **ťet** set : et : *(r)et

NAVEL **pɨrupʔã** pɨrumʔa : pilup : pɨruʔã (Rodrigues; Dietrich, 1997), pɨruã (Mello, 2000)

O.NZ (= OBJECT NOMINALIZER) **mi-** mi- : mi- : *mi-

PAIN **ťatɨ** satɨ : atɨ : *(r)ačɨ

PASS **koťap** kosap : kwap : *kʷap

PLACE **etiam**, **etjam** ejam : tam, etam : *etam

PULL **ekɨj** ekɨj : ekɨj : *ekɨj

RAIN **ama(a)n** iʔ-ama(a)n : aman : *aman

RED-1[35] **kʷup** hup : tup : *jup

RED-2 (**pɨraŋ**) − : pɨlaŋ : pɨraŋ (perhaps reconstructible only to Proto–Aweti-Guarani)

RFL (= REFLEXIVE) **kʷe-** we- : te- : *je-

ROOT **ťapo** sapo : apo : *(r)apo

SALIVA (**ťẽtɨ**) jẽtɨ-hɨ : − : *(r)enɨ

SALT **kʷukɨt** ukɨt : tukɨt : *jukɨt

SEARCH **(i/e)kaat** (i)kaat : (j)kat : *ekat

SEE/HEAR **ẽtup** wan-ẽtup : (ẽ)tup : *enup

SEED **ťaʔij** jaʔij : aʔij : *(r)aʔij

SEIZE **pitɨk** pitɨk : pitɨk : *pitɨk

SEIZE-2 **(j)aat** aat : − : *(j)at

SHOOT (**(ʔ)ɨßõ**) − : ʔɨwõ : ɨßõ

SHOULDER **ť(a/ã)tiʔɨp(i)** jãtiʔɨpɨ : azɨʔɨp : *(r)atɨʔɨp

SKIN/BODY **piit** piit : pit : *pit

SLAP (**petek**) petek : − : petek

SLEEP **ket** ket : tet : *kʲet

SMOKE **ťiŋ** ɨ-hiŋ (probably *ʔɨp 'tree, wood' + *tiŋ) : tiŋ : *tiŋ

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[34] Aweti and Mawe have the phonetically lenited *r* ; we thus have the regular *t correspondence *t : t : *t*. Note that both Mawe and Aweti (may) have the same metathesis here.

[35] Mawe *hup* means 'red', but Aweti *tup* and PTG *jup* mean 'yellow'.

SNAKE ***mõj** *moj* : *mõj* : **moj*

SQUIRREL (***kutiere**, ***kutjere**) *kutiere* : *kuceze-ʔɨt* : −

SWEET ***i-tʲeʔɆ̃** *heʔɆ̃* : *teʔɆ̃* : **čeʔɆ̃* (apparently a lexicalized third-person form)

SWIM ***ɨjtʲa(p)** *ɨha* : *ɨta-tap* : **ɨtap*

TERMITE ***ŋupi** *ŋupi-ʔa* : *kupi-ʔa, kupi-ʔɨ̃* : *kupi-ʔɨ*

TAIL ***tʲuwaj** *suwaj-po* : *uwaj* : **(r)uwaj*

THICK ***anam** *iʔ-anam* : *ʔajam* : **anam*

THIGH ***ʔup** *ʔup* : *ʔup* : **ʔup*

TOOTH ***tʲãj** *jãj* : *ãj* : **(r)ãj*

TORTOISE ***kʷaßoti** *wawori* : *tawozɨ* : **jaßoti*

TOUCAN ***tiukan**, ***tjukan** *jŭkan* : *tukan* : **tukan*

TRAÍRA (FISH) (***taraʔɨra**) (? – possible borrowing, TG > Mawe) *taraʔɨra* : − : *taraʔɨr-a*

TWO (***mokõj**) − : *mokõj* : **mokõj*

VILLAGE (***taaßa**) (? – possible borrowing, TG > Mawe) *taawa* : − : **taßa*

VULTURE ***uraßu** *uruwu* : *uzuwu* : **uraßu*

WASP ***ŋap** *ŋap* : *kap* : **kap*

WATER ***ʔɨ** *iʔɨ* : *ʔɨ* : **ʔɨ*

WIND ***ɨßɨt(u)** (? – possible borrowing, TG > Mawe) *ɨwɨtu* : *ɨwɨt* : **ɨßɨtu*

WOMAN'S SON ***mẽpɨt** *mẽpɨt* : *mẽpɨt* : **memɨt*

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