Restructuring of Proto-Omagua-Kukama kin terms

Reestruturação dos termos de parentesco Proto-Omagua-Kukama

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Abstract: This article reconstructs the system of kin terms in Proto-Omagua-Kukama (POK), the ancestral language of the Omagua and Kukama-Kukamiria, and compares it to Tupinambá, a former language of the Brazilian Atlantic coast and their closest relative in the Tupí-Guaraní language family. I identify semantic shifts, analogy-based innovations, calques, and borrowings. I suggest that some of these changes are likely due to concomitant changes in pre-POK social structure. The identification of borrowings is potentially fruitful in determining which languages contributed to the setting that gave rise to POK. Detailed study of the evolution of the divergent grammar and lexicon of POK is crucial to understanding this social and linguistic history.

Keywords: Kin terms. Amazonia. Tupí-Guaraní. Language contact. Lexical evolution.

Resumo: Este artigo reconstrói o sistema terminológico de parentesco em Proto-Omagua-Kukama (POK), a língua ancestral dos Omagua e dos Kukama-Kukamiria, e compara-o ao de Tupinambá, a língua antigamente falada no litoral atlântico brasileiro, seu parente linguístico mais próximo. Identifico mudanças semânticas, inovações baseadas em analogia, calques e empréstimos. Sugiro que algumas dessas mudanças resultem de alterações concomitantes na estrutura social pré-POK. A identificação de empréstimos pode render frutos para a determinação de quais línguas contribuíram ao contexto em que surgiu o POK. O estudo detalhado da evolução da gramática e do léxico divergentes de POK é crucial para entender sua história social e linguística.

Palavras-chave: Termos de parentesco. Amazônia. Tupí-Guaraní. Contato de línguas. Evolução lexical.

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INTRODUCTION

This article reconstructs the system of kin terms in Proto-Omagua-Kukama (POK), the ancestral language of the Omagua and Kukama-Kukamiria, and compares it to Tupinambá, a former language of the Brazilian Atlantic coast and their closest relative.[1] POK is a grammatically and lexically divergent branch of the Tupí-Guaraní language family, members of which ranged (during the earliest known periods) across most of South America, from Brazil in the north and east, Paraguay and Argentina in the south, to Peru and Bolivia in the west. Rodrigues (1984-1985) utilized a combination of shared innovations, shared retentions, and geography to argue that Tupí-Guaraní (TG) should be divided into eight subfamilies, resulting in a rake-like phylogeny with no intermediate groupings. Rodrigues and Cabral (2002) proposed some intermediate groupings based on similar criteria, with the same eight subfamilies. In contrast, Michael et al. (2015) considered computational phylogenetic methods applied to lexical traits to argue for a substantially different set of intermediate groupings, but retained five of the eight subfamilies.

Cabral (1995, 2007) suggested that Omagua and Kukama-Kukamiria are not genetically related to other TG languages because they are creole languages that emerged in seventeenth-century Jesuit missions. Michael (2014) used written documentation of Kukama-Kukamiria dating from 1680 and contemporary differences from Omagua to demonstrate that POK arose in the pre-Columbian period. Omagua was first encountered in 1538 and spoken along several hundred kilometers of the Amazon River between the mouths of the Napo and Juruá Rivers across Peru and Brazil (Michael; O'Hagan, 2016, p. 1-4); today there are three known speakers, all born between 1930 and 1932 in San Joaquín de Omaguas, a community on the left bank of the same river between Iquitos and Nauta in Peru. Kukama-Kukamiria, two dialects first encountered in 1557 along the lower Ucayali and Huallaga Rivers, respectively, today have approximately 1,000 speakers, mainly on the Huallaga, Marañón, and Nanay Rivers in Peru (Vallejos, 2016).[2]

The grammatical divergences in POK are pervasive, perhaps most evidently in the formation of new roots based on what in other TG languages is a combination of person inflection and a root (e.g., Tupinambá ***o-so*** 3ERG-go, but POK ****utsu*** 'go').[3] Agreement was consequently lost in POK, and person came to be expressed through a series of separate pronouns (e.g., ****ɾa=utsu*** 'he/she is going'). Although TG pronouns were partly retained, a genderlect distinction was innovated in the first and third persons, and the paradigm shows significant influence from a non-TG system (O'Hagan et al., 2013). Endocentric verbal derivational affixes were lost (i.e., two causative prefixes and a causative suffix), replaced by a single causative ****-ta*** and an applicative ****-tsupi***.[4] On the other hand, five deverbal nominalizers were retained, as well as four modal and evidential second-position clitics.

Numerous POK grammatical morphemes are the result of grammaticalization trajectories that make their etymological sources difficult to detect. For example, a two-way past tense distinction was innovated in the language, expressed via verb phrase-final clitics: ****=uí***, the proximal past, is cognate with Tupinambá ***ojeʔi*** 'earlier today' (Barbosa, 1951, p. 116), while ****=tsuɾi***, the distal past, is cognate with the Tupinambá habitual nominalizer ***sweɾ***.[5] Similar processes

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1 For ease of reference, the reconstructed terms are summarized in Figures 1 and 2.

2 Mentions of the earliest encounters with Omaguas come from the research of Hemming (1978, p. 185) and Stocks (1978, p. 99-102). A significant early description is Carvajal (1894 [1542]). A parallel source for Kukama-Kukamirias is Jiménez de la Espada (1897, p. LXXIII), citing a letter of 1571.

3 This is documented extensively in O'Hagan (2011, p. 17-48).

4 The latter grammaticalized from an adposition that introduces a recipient argument.

5 This is ***pace*** O'Hagan et al. (2013), who at that time had not located etymological sources for all the morphemes mentioned here. See Barbosa (1956) for the grammatical description of Tupinambá on which these facts are based.

are apparent in the domains of aspect, purpose clause marking (O'Hagan, [2019]), and negation (O'Hagan et al., 2016), and clause-linking markers show the rampant recruitment of (TG) spatial adpositions to express temporal meanings (O'Hagan, 2014). In the nominal domain, plural marking was innovated,[6] as was a diminutive *=*kɨɾa*, cognate to Tupinambá *kɨɾ* 'new, immature, green' (Barbosa, 1951, p. 136). On the other hand, an augmentative *=*watsu*, past *=*puɾa*, and future *=*ɾa* were inherited.

The lexical divergences in POK from its common ancestor with Tupinambá span several domains (although the majority of roots share cognates with other TG languages). Kin terms are one such domain, and the remainder of this article is laid out as follows: in "Proto-Omagua-Kukama" I separately compare a subset of the total consanguineal and affinal terms in Omagua and Kukama-Kukamiria, and reconstruct their ancestral forms in POK; in "Comparison with Tupinambá" I compare these reconstructed forms – again treating consanguineal and affinal terms separately – with cognates in Tupinambá, describing the ways that the POK kinship system changed both in terms of their structural properties and form. I briefly mention ways in which these changes might map onto social changes experienced by speakers of pre-POK and summarize my findings in the conclusion.

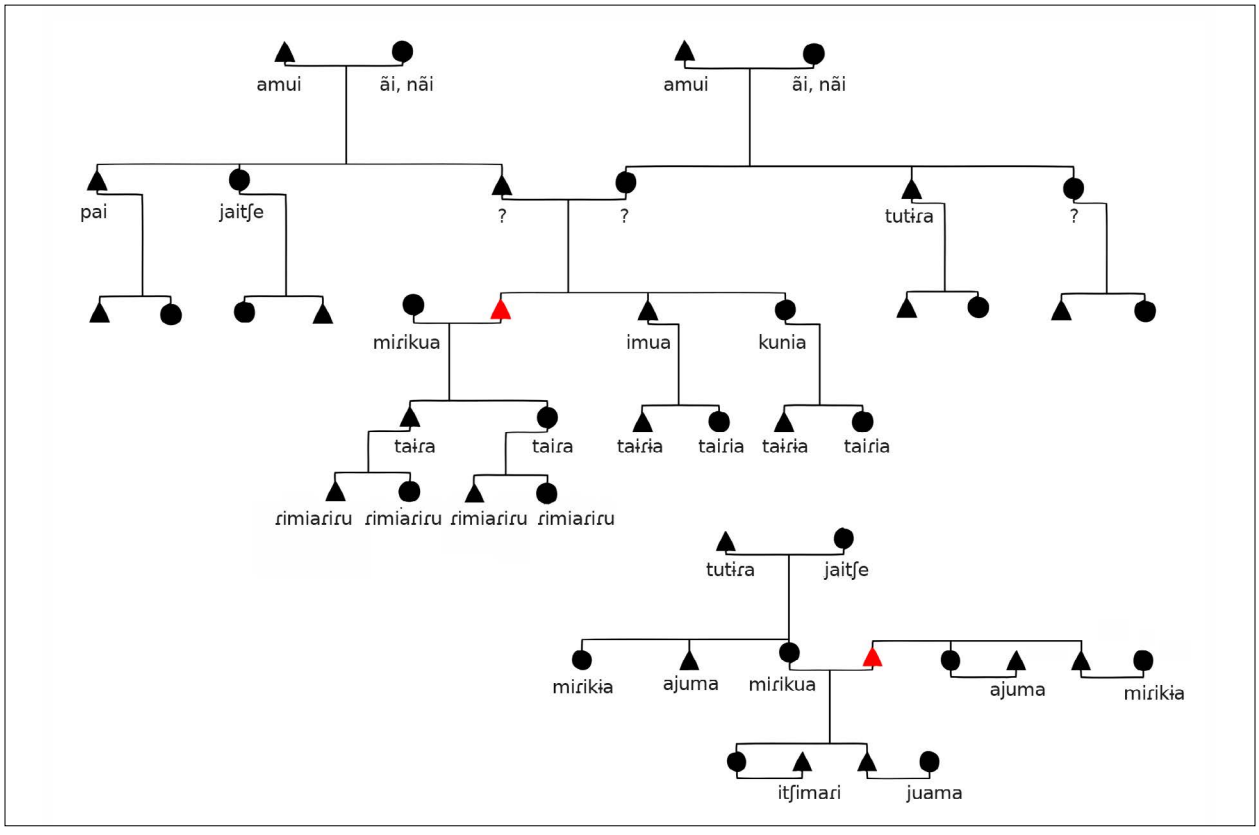

Figure 1. Proto-Omagua-Kukama kin terms (male ego).

[6] This is sensitive to genderlect and expressed by the markers *=*kana* and *=*nu*, which were perhaps borrowings.

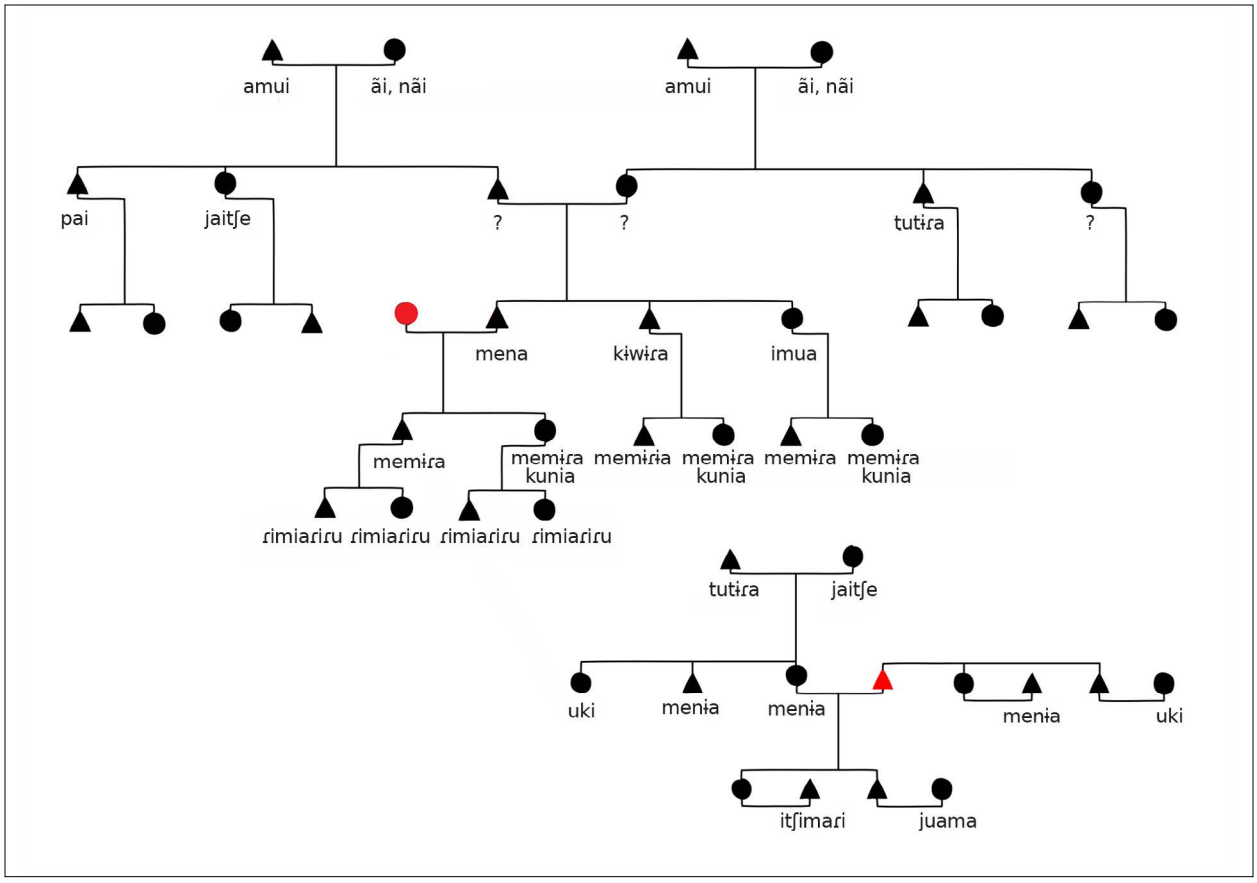

Figure 2. Proto-Omagua-Kukama kin terms (female ego).

PROTO-OMAGUA-KUKAMA

In this section I reconstruct the kin terms of Proto-Omagua-Kukama. Data for Omagua comes from my own fieldwork between 2010 and 2013, for Kukama-Kukamiria is taken from Vallejos and Amías (2015), and for Tupinambá from Barbosa (1951). Because of the strong lexical and phonological similarities shared between Omagua and Kukama-Kukamiria, forms reconstructed to POK are often identical in both languages. Three sound changes account for most variation in forms: **tʃ > ʃ* and **e > ɪ* in Omagua, and the first vowel of CV.V sequences undergoing glide formation in Kukama-Kukamiria (e.g., POK **ikua* [i'kua] 'know' vs. Kukama-Kukamiria ['ikwa][7]).

CONSANGUINEAL TERMS

Table 1, which is organized by descending generation, summarizes Omagua and Kukama-Kukamiria forms denoting consanguines, together with the form reconstructed to POK. Consonants in parentheses are present in the Kukama dialect; boldface indicates forms with the same meaning but different etymologies; single horizontal lines separate generations.[8]

[7] In Kukamiria specifically, glides following nasals are then deleted.
[8] The abbreviations M, F and E stand for male, female, and ego, respectively.

POK distinguished parallel and cross relations in the first ascending generation. Cousin terms are left out of Table 1 because of incomplete data, although parallel and cross relations do not seem to have been distinguished in the ego's generation, with sibling terms used for all cousins. Similarly, parallel and cross relations are not distinguished in the first descending generation, and nephew and niece terms are not dependent on the sex of ego's siblings. At ego's generation, as well as the first descending one, terms are distinguished based on ego's sex. At the second descending generation a single grandchild term is employed, collapsing the sex of the referent relative to the second ascending generation.

Table 1. Omagua, Kukama-Kukamiria, and POK consanguines.

Translation	Omagua	Kukama-Kukamiria	POK
Grandfather	amui	am(w)i	amui
Grandmother	ãi	nai	ãi, nãi
Father	papa	papa	?
Mother	mama	mama	?
Paternal uncle	**papakɨɾa**	**pai**	pai
Maternal uncle	tutiɾa	tutiɾa	tutiɾa
Paternal aunt	jaiʃɪ	jaitʃe	jaitʃe
Maternal aunt	mamakiɾa	mamakiɾa	?
Brother (ME)	imua	im(w)a	imua
Brother (FE)	kɨwɨɾa	kɨwɨɾa	kɨwɨɾa
Sister (ME)	kunia	kunja	kunia
Sister (FE)	**imua**	**paja**	imua
Son (ME)	taɨɾa	taɨɾa	taɨɾa
Son (FE)	mɪmɨɾa	memɨɾa	memɨɾa
Daughter (ME)	taiɾa	taiɾa	taiɾa
Daughter (FE)	mɪmɨɾa kunia	memɨɾa kunja	memɨɾa kunia
Nephew (ME)	taɨɾɨa	taɨɾɨa	taɨɾɨa
Nephew (FE)	mɪmɨɾɨa	memɨɾɨa	memɨɾɨa
Niece (ME)	taiɾia	taiɾia	taiɾia
Niece (FE)	mɪmɨɾa kunia	memɨɾa kunia	memɨɾa kunia
Grandchild	ɾimiaɾiɾu	ɾimiaɾiɾu	ɾimiaɾiɾu

In Omagua there are three sibling terms, one for a same-sex sibling, ***imua***, and distinct terms for opposite-sex siblings. In contrast, in Kukama-Kukamiria, there is a four-way distinction, with ***paja*** referring to a woman's sister. In both languages, words for son and daughter differ minimally in the quality of the diphthong of the first syllable. Nephew and niece terms are derived from the corresponding direct descent terms (son and daughter) via the insertion of ***ɨ*** or ***i*** preceding the final vowel. The word for daughter is a compound based on the word for son. In Omagua, there is no distinction between daughter (female ego) and niece (female ego), although in Kukama-Kukamiria there is (see "Comparison with Tupinambá").

The reconstruction of consanguineal terms to POK is relatively straightforward, and here I focus on those instances that require special explanation. For grandmother, the presence of a nasal vowel is unexpected in Omagua, as is the

presence of an initial *n* in Kukama-Kukamiria where Omagua has no corresponding segment. TG languages typically have contrastive nasal vowels, but nasal vowels merged with oral ones in POK.[9]

The terms for father and mother are probable borrowings, and were almost certainly borrowed into Omagua and Kukama-Kukamiria independently, given their divergence relative to the time of contact with Spanish speakers; for this reason I do not reconstruct them. The reconstruction of terms for parents' siblings is similarly complicated. Omagua has terms for parents' same-sex siblings that are based on the corresponding parent term in combination with the diminutive *=kɨɾa*; Kukama-Kukamiria has a similarly derived term only for maternal aunt, with *pai* referring to a paternal uncle. I reconstruct the asymmetry between parents' same-sex sibling terms because a similar asymmetry exists in TG languages (with non-cognate forms), and because the Omagua term *papakɨɾa* is easily explained as an analogy based on *mamakɨɾa*, the reconstruction of irregularity is preferred. However, since the base on which *mamakɨɾa* is formed is itself a probable borrowing, I do not reconstruct an actual form for maternal aunt. In sum, the POK system thus appears to mirror a more widespread TG one in which the relevant forms have been replaced.

A similar asymmetry exists among sibling terms (such as Omagua *imua* and Kukama-Kukamiria *paja*), but in this case I reconstruct the Omagua system to POK, namely one in which **imua* denotes a same-sex sibling, i.e., the brother of a man or the sister of a woman. Kukama-Kukamiria is consequently a borrowing from a still-unidentified language, since POK **imua* is cognate to Tupinambá *mũ* "[…] relative, ally, friend, nation, race […]" (Barbosa, 1951, p. 103). A similarly broad range of meanings is found in other TG languages, thus a process of semantic narrowing appears to be at work, with the Tupinambá-like meaning at one extreme and the Kukama-Kukamiria one of brother (male ego) at the other. The Omagua meaning is intermediate, and as a result is likely to have been present in POK.

The reconstruction of terms in the first descending generation only requires additional explanation in the case of daughter and niece (female ego). In Omagua these two terms are identical, while in Kukama-Kukamiria they differ in the placement of stress on the second element of the compound, a reflex of **kunia* 'sister (ME),' which is cognate to Tupinambá *kuɲã* 'woman,' which has the same meaning in most TG languages.[10] I suggest that the glide formation that **kunia* underwent in Kukama-Kukamiria permitted the innovation of a term analogous to the other nephew and niece terms in these languages, namely the insertion of a vowel *ɨ* or *i* preceding the final vowel,[11] for example **memɨɾa* 'son (FE)' vs. *memɨɾia* 'nephew (FE).' As a result, I reconstruct the polysemy found in the Omagua system to POK.

AFFINAL TERMS

We now turn to a discussion of affinal terms in Omagua and Kukama-Kukamiria, which are summarized in Table 2. As before, single horizontal lines separate generations.[12]

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[9] In "Comparison with Tupinambá" we will see important exceptions to this generalization, as well as evidence for the reconstruction of both **ãi* and **nãi*.

[10] An anonymous reviewer notes that this term may be best translated as female in many TG languages. I follow Barbosa's translation here, but the reader should bear this more general sense in mind (Barbosa, 1951, p. 49).

[11] The quality of the vowel depends on the most immediate leftward vowel, of which it is a copy. This process appears to be related to what is observed in Tupinambá *sɨ* 'mother' and *sɨʔɨɾ* 'maternal aunt,' in which the relevant sequence is a suffix *-ʔɨɾ*.

[12] Brother-in-law and sister-in-law are intended to reflect the generality of their possible meanings in English, namely denoting a spouse's sibling as well as a sibling's spouse. More specific definitions are provided in "Comparison with Tupinambá," in the comparison between the POK and Tupinambá kin systems.

Table 2. Omagua, Kukama-Kukamiria, and POK affines.

Translation	Omagua	Kukama-Kukamiria	POK
Father-in-law	tutɨɾa	tutɨɾa	tutɨɾa
Mother-in-law	jaiʃɪ	jaitʃe	jaitʃe
Husband	mɪna	mena	mena
Wife	miɾikua	miɾikwa	miɾikua
Brother-in-law (ME)	ajuma	ajuma	ajuma
Brother-in-law (FE)	mɪnɨa	menɨa	menɨa
Sister-in-law (ME)	miɾikɨa	miɾikɨa	miɾikɨa
Sister-in-law (FE)	uki	uki	uki
Son-in-law	iʃimaɾi	itʃimaɾi	itʃimaɾi
Daughter-in-law	juama	juwama	juama

In ego's generation there are distinctions based on ego's sex, but in the ascending and descending generations there are no such distinctions. In the ascending generation, we see that **tutɨɾa* and **jaitʃe* are polysemous with parents' opposite-sex siblings, suggesting a pattern of cross-cousin marriage. Recall, however, that terms for these in the first descending generation do not instantiate a parallel-cross distinction. Nor is such a distinction instantiated in affinal terms in the first descending generation: the terms for 'son-in-law' and 'daughter-in-law' show no similarities with 'nephew' and 'niece,' respectively, as might be expected given the polysemy in the first ascending generation. Finally, as in the consanguineal domain, opposite-sex in-law terms in ego's generation are derived from the corresponding spousal terms via the insertion of *ɨ*.

The reconstruction of POK affinal terms is straightforward, with all pairs of forms descending from the same respective proto-forms. A small number of regular sound changes are attested (the lenition of **tʃ*, the raising of **e*, and glide formation). In addition, Kukama-Kukamiria underwent the insertion of the labiovelar glide *w* following *u* and preceding another vowel (cf. 'daughter-in-law').

COMPARISON WITH TUPINAMBÁ

In this section I compare the forms reconstructed in POK and their organizational structures with those of Tupinambá, the closest relative of POK (Michael et al., 2015, p. 205). It is important to note that the structure of the Tupinambá kinship system is consonant with those of many TG languages, and can uncontroversially be assumed to have held for the common ancestor of Tupinambá and POK. With this in mind I will speak of changes between the Tupinambá and POK systems, although the two languages are sisters (strictly speaking) and not direct descendants of one another. We will see significant change in both structure and forms, which resulted from the intense language contact experienced by speakers of pre-POK. In general, the POK system is a simplification of the Tupinambá system, in the sense that fewer sorts of kin relations are distinguished by unique lexical items.

CONSANGUINEAL TERMS

The changes that affect consanguineal terms are summarized in Table 3. Underlined terms draw on TG lexical material in some way (see below); boldfaced terms are borrowings; and braces reflect the merging of two terms into one.

Table 3. Tupinambá and POK consanguines.

Translation	Tupinambá	POK
Grandfather	amũj	amui
Grandmother	aɾɨj	ãi
Father	uβ	?
Mother	sɨ	?
Paternal uncle	uβ	pai
Maternal uncle	tutɨɾ	tutɨɾa
Paternal aunt	aiʃe	jaitʃe
Maternal aunt	sɨ ~ sɨʔɨɾ	?
Older brother (ME)	ɨkɨʔɨɾ	imua
Younger brother (ME)	ɨβɨɾ	
Brother (FE)	kɨβɨɾ	kɨwɨɾa
Older sister (FE)	ɨkeɾ	imua
Younger sister (FE)	pɨkɨʔɨɾ	
Sister (ME)	endɨɾ	kunia
Son (ME)	aʔɨɾ	taɨɾa
Son (FE)	membɨɾ	memɨɾa
Daughter (ME)	ajɨɾ	taiɾa
Daughter (FE)	membɨɾ	memɨɾa kunia
Nephew, son of brother (ME)	aʔɨɾ	taiɾɨa
Nephew, son of sister (ME)	iʔɨɾ	
Nephew, son of sister (FE)	membɨɾ	memɨɾɨa
Nephew, son of brother (FE)	peŋ	
Niece, daughter of brother (ME)	ajɨɾ	taiɾia
Niece, daughter of sister (ME)	jetipeɾ	
Niece, daughter of sister (FE)	membɨɾ ~ membɨkuɲã	memɨɾa kunia
Niece, daughter of brother (FE)	peŋ	
Grandchild (ME)	emimino	ɾimiaɾiɾu
Grandchild (FE)	emiaɾiɾõ	

We begin with a review of the changes in structure, all of which occurred in ego's generation and in the two descending generations. The first concerns age grade distinctions among sibling terms. Tupinambá contained distinct terms for older and younger same-sex siblings, with opposite-sex siblings referred to with a single term regardless of age. In POK, these distinctions were leveled for egos of both sexes. The second concerns parallel-cross distinctions in the first descending generation. Tupinambá featured distinct terms for nephews and nieces depending on ego's sex and whether the relation was parallel or cross.[13] Parallel nephews and nieces were referred to in the same way as children,

[13] Note that age grade distinctions among siblings disappear in this generation.

with the addition of a compound variant term *membɨkuɲã* for a female ego's parallel niece. Cross nephews and nieces were referred to with etymologically unrelated terms. Male egos distinguished the sex of the referent in such cases (cf. *iʔɨɾ* and *jetipeɾ*); female egos did not (cf. *peŋ*). All four pairs of terms were collapsed to four single terms, which were derived with the familiar insertion of *ɨ* or *i*. Furthermore, as a result of independent sound changes outside the scope of this article, daughter (female ego) came to be homophonous with niece (female ego), with subsequent innovation in Kukama-Kukamiria (see below). The third concerns an ego-based distinction in the second descending generation. In Tupinambá terms were distinguished based on ego's sex and not referent's sex, and these two terms were leveled in favor of the female ego form.

Now we turn to changes in the forms attested in this domain. In this vein, when I speak of the shift in meaning or replacement of a form in POK relative to Tupinambá, this is based on the widespread attestation of the relevant form with a particular meaning across many TG languages, which lies outside the scope of this article. The first change in form is the loss of a cognate to *aɾɨj* 'grandmother' and its replacement with **ãi* and **nãi*. Following sound changes attested elsewhere, these forms appear to be cognate with Tupinambá *aʔĩ* 'mano' (Portuguese) and *naʔĩ* 'mana' (Portuguese), respectively, which are familiar terms for brother and sister (Barbosa, 1951, p. 24, 105). At this juncture it is important to highlight that nasal vowels generally merged with oral vowels in POK, as mentioned above. However, at least six forms with nasal vowels can be reconstructed for POK, as summarized in Table 4. These forms have nasal vowels in Omagua and oral vowels in Kukama-Kukamiria. Their cognates in Tupinambá exhibit uncommon phonological shapes in the language: a nasal vowel or diphthong preceded by a glottal consonant, or an oral diphthong preceded by a glottal stop.

Table 4. POK roots with nasal vowels.

Translation	Omagua	Kukama-Kukamiria	POK	Tupinambá
3SG.FS	ãi	ai	ãi	ahẽ
Grandmother	ãi	–	ãi	aʔĩ
Grandmother	–	nai	nãi	naʔĩ
Heart	ĩja	ija	ĩja	ɲɨʔã
Tail	sũi	tsuwi	tsũi	uʔaj
Sweat	sɨ̃i	tsɨji	tsɨ̃i	ɨʔaj
Hook	–	tɨi	tɨ̃i	tɨʔãj

There is reason to believe that the relevant generalization might be that nasal vowels survived in POK if in the ancestral language they were the nucleus of a syllable that began with a glottal consonant (in all cases but one, the glottal stop): cognates of **tsũi* 'tail' in at least three TG languages exhibit the nasal diphthong *ãj*; cognates of **tsɨ̃i* 'sweat' do not exhibit a nasal diphthong, but the diphthong may have nasalized in the ancestor of POK by analogy with forms of similar phonological shape. There are exceedingly few forms in Tupinambá that contain syllables of the shape ʔV̰(G), and even fewer that were inherited into POK; however, all forms with this syllable shape follow this pattern.

The above is intended to provide evidence for the cognacy of POK **ãi* and **nãi* 'grandmother' with Tupinambá *aʔĩ* 'mano' and *naʔĩ* 'mana.' At present, the specific trajectory of the semantic shifts involved is not clear: terms that are

translated as informal sibling and friend vocatives came to refer to one's grandmother. In that vein, I suggest that the vocative use of these terms in the ancestral language of Tupinambá and POK – namely, POKT – were likely different, allowing for a more natural-seeming semantic shift. The result is that two terms for grandmother were inherited into POK, with Omagua and Kukama-Kukamiria subsequently retaining different ones. Lastly, it is noteworthy that terms referring to women underwent considerable restructuring in POK, as summarized in Table 5, where the meanings of the Tupinambá forms are attested as such across the family. In that light, semantic shifts related to terms for grandmother are part of a broader set of shifts in this domain.

Table 5. Terms referring to women.

Translation	Tupinambá	POK	Translation
Grandmother	**aɾɨj**	**–**	–
'Mano' (voc.)	**aʔĩ**	**ãi**	Grandmother
'Mana' (voc.)	**naʔĩ**	**nãi**	Grandmother
Mother	**sɨ**	**–**	–
–	**–**	**mama**	Mother
'Mano'	**gʷaj**	**wainua**	Woman
Woman	**kuɲã**	**kunia**	Sister (ME)

The second change is the loss of the terms for father and mother. Terms for father and mother resembling ***papa*** and ***mama*** (see Table 1) are of course incredibly common, so common that it is likely that they were borrowed into Omagua and Kukama-Kukamiria independently. If they are of European origin, Spanish *papá* and *mamá* are likelier sources than Portuguese *pai* and *mãe*. Because of this likelihood, I do not reconstruct any such terms to POK.

The term for paternal uncle, ****pai***, despite its resemblance to Portuguese, appears to be cognate with Tupinambá ***paʔi***, a vocative term for father (Barbosa, 1951, p. 119). We have seen that Tupinambá ***uβ*** could refer to a father and to a paternal uncle, making it likely that ***paʔi*** was used as a vocative for the same individuals. In this case, this form came not only to be referential in POK, but also survives only in its reference to a paternal uncle. That is, the equation of a father with a father's brother was split, perhaps under the influence of the borrowing for father. Related to this is the loss of the term for maternal aunt. Both Omagua and Kukama-Kukamiria have ***mamakɨɾa***, but this form is based on an almost certain borrowing. Given that the enclitic ****=kɨɾa*** was a diminutive in POK (see above), whatever the form is that preceded ***mamakɨɾa***, it was likely based on a similarly morphologically complex term for mother, as in Tupinambá, such that the innovation of ***mamakɨɾa*** is a calque. Omagua subsequently replaced paternal uncle with ***papakɨɾa*** by analogy.

Moving on to terms in ego's generation, we see that age grade-based sibling terms for male and female egos, a four-way distinction, were replaced by a single term, ***imua*** 'same-sex sibling.' This form is cognate to Tupinambá ***mũ***, variously translated as relative, ally, friend, nation, and race (Barbosa, 1951, p. 103). In the same domain, the term for a man's sister was replaced due to the semantic shift of woman to sister. The only broader TG sibling term to survive as such is POK ****kɨwɨɾa***.

So far, what do these structural changes and changes in form tell us about the social situation in which POK developed? First, in the ascending generations, there seems to be a process whereby originally vocative terms came to replace referential terms. This might suggest that POK had cognates to Tupinambá father and mother vocative terms (*paʔi* and *aʔi ~ mãʔi*, respectively) in referential function (i.e., possible **pai* and **ai ~ *mai*). In a situation in which POK developed in part due to widespread acquisition of a Tupinambá-like language by non-TG people, this would suggest that such speakers reinterpreted vocative terms as referential ones in overhearing the former.[14] In ego's generation, two processes of semantic narrowing occurred (roughly, 'relative' > 'same-sex sibling' and 'woman' > 'sister (ME)'). The former is perhaps explainable in terms of an increase in the expression of solidarity from the level of a family (or even extrafamilial group) to siblings.

Changes in form in the first descending generation are more straightforward. Terms for son (male ego) and daughter (male ego) were inherited directly. Terms for nephew (male ego) and niece (male ego) were derived via the insertion of *ɨ* and *i*, resulting in the loss of the parallel-cross distinction, as seen above. A slightly more complicated set of facts holds for daughter (female ego) and niece (female ego). For Tupinambá, Barbosa (1951) describes a single term for the former and two possible forms for the latter, with *membɨkuɲã* being a compound of child and woman. I suggest that the same variation held for daughter, in which case *membɨkuɲã* likely arose to distinguish between male and female children of female egos, as is possible with separate roots for male egos. If this is the case, the term was similarly inherited into POK in the same way as the other terms in the first descending generation. Subsequently, by analogy to sibling/nephew-niece pairs that alternated by way of the presence of *ɨ* or *i*, a distinction between daughter (female ego) and niece (female ego) was innovated in Kukama-Kukamiria (Table 1). This was only possible in Kukama-Kukamiria, and not Omagua, because of the glide formation that has been discussed.

AFFINAL TERMS

Generally speaking, there is more restructuring and more borrowing in the affinal domain than in the consanguineal domain, as summarized in Table 6. In terms of structure, in the first ascending generation ego-based distinctions are lost, making it similar to the lack of an ego-based distinction in this generation in the consanguineal domain. In ego's generation, a six-way distinction in in-law terms for each of a male and female ego is reduced to a two-way distinction, but the ego-based distinctions are maintained. In the first descending generation, ego-based distinctions are lost in a way that exactly parallels the first ascending generation. This is unlike the consanguineal domain, where such distinctions remain. As a result, the consanguineal and affinal domains differ in the symmetry of ego-based distinctions across these three generations.

In terms of form, in this domain Tupinambá exhibits 14 compound forms involving two kin terms, out of a total of 20. Non-compound are *aiʃo*, *men*, *emiɾeko*, *oβajaɾ*, *ukeʔi*, and *peʔum*, which span all three generations. The compound terms are always transparent, e.g., *menduβ*, a combination of *men* 'husband' and *uβ* 'father.' Sometimes they attest to archaic forms, e.g., *atuʔuβ*, based on *atɨ*. In POK there are three borrowings, two internal derivations with *ɨ*, and semantic shifts that crosscut these two phenomena. Only **mena* 'husband' and **miɾikua* 'wife' were inherited with the same meaning.

[14] Perhaps there was no such vocative-referential distinction in the languages of those people.

Table 6. Tupinambá and POK affines.

Translation	Tupinambá	POK
Father-in-law (ME)	menduβ	tutiɾa
Father-in-law (FE)	atuʔuβ	
Mother-in-law (ME)	aiʃo	jaitʃe
Mother-in-law (FE)	mendɨ	
Husband	men	mena
Wife	emiɾeko	miɾikua
Brother-in-law: brother of wife (ME)	oβajaɾ	**ajuma**
Brother-in-law: husband of sister (ME)	–	
Brother-in-law: older brother of husband (FE)	menɨkeʔiɾ	menɨa
Brother-in-law: younger brother of husband (FE)	menɨβiR	
Brother-in-law: husband of older sister (FE)	ɨkemen	
Brother-in-law: husband of younger sister (FE)	pɨkiʔɨmen	
Sister-in-law: sister of husband (FE)	–	uki
Sister-in-law: wife of brother (FE)	ukeʔi	
Sister-in-law: older sister of wife (ME)	emiɾekoʔɨkeɾ	miɾikɨa
Sister-in-law: younger sister of wife (ME)	emiɾekopɨkiʔiɾ	
Sister-in-law: wife of older brother (ME)	ɨkiʔɨɾatɨ	
Sister-in-law: wife of younger brother (ME)	ɨβɨɾatɨ	
Son-in-law (ME)	ajɨβen	**itʃimaɾi**
Son-in-law (FE)	peʔum	
Daughter-in-law (ME)	aʔɨɾatɨ	**juama**
Daughter-in-law (FE)	membɨɾatɨ	

In the first ascending generation, terms for maternal uncle and paternal aunt (Table 1) were extended to refer to parents-in-law. In ego's generation, terms based on the spousal equivalents were derived via ***ɨ*** to refer to opposite-sex in-laws, that is, the brothers-in-law of women and the sisters-in-law of men. For same-sex in-laws, two processes are attested. For female egos, the TG form was simply retained (****uki***); for male egos, the TG form was replaced by ****ajuma***, of unknown origin. And in the first descending generation, the resulting non-ego-based distinction is similarly expressed via two borrowings of unknown origin.

As in the consanguineal domain, we can ask what these linguistic changes tell us about possible social changes. The extension of uncle and aunt terms into the affinal domain suggests a pattern of cross-cousin marriage.[15] Elsewhere, it is significant that Tupinambá ***oβajaɾ*** referred to brothers-in-law as well as enemies – '*inimigo* (*de nação*), *contrário*' (Portuguese) (Barbosa, 1951). This polysemy almost certainly reflected a Tupinambá practice in which war captives

[15] I thank an anonymous reviewer for noting that the survival of equations of the father-uncle sort in the first ascending generation (but not elsewhere) is common cross-linguistically, and is often associated with the presumed loss of patterns of cross-cousin marriage.

were married to the capturing warriors' sisters. The meaning of enemy was retained in POK **tsawajaɾa*, a cognate. Similarly, Michael (2017) has suggested that the massive geographical and demographic expansion of speakers of pre-POK was tied to widespread captive-taking coupled with the abandonment of ritual cannibalism, which led to a large-scale influx and incorporation of speakers of non-TG languages into the POK population. When these speakers acquired pre-POK, their influences on its grammar and lexicon spread throughout the population. Regarding kin terms, and put somewhat differently, brothers-in-law of male egos would have ceased to be conceptualized as enemies, but rather incorporees into the society. Perhaps this is reflected in the borrowing of **ajuma*. Nonetheless, it should be emphasized that borrowings in the first descending generation are not explainable in these terms, and that the different borrowings may naturally have had different motivations.

CONCLUSION

In this article I have reconstructed the form of kin terms in Proto-Omagua-Kukama and compared them with those of its closest relative, Tupinambá, in order to discuss the changes in structure and form that took place during the genesis of POK and subsequently in Omagua and Kukama-Kukamiria. I have identified semantic shifts, analogy-based innovations, calques, and borrowings, and suggested that some of these changes are likely due to concomitant changes in pre-POK social structure. The identification of borrowings is potentially fruitful for determining which languages contributed to the setting that gave rise to POK, an area of inquiry which is still poorly understood. Preliminary evidence suggests, however, that the relevant region may have been the middle Amazon, near the mouth of the Rio Negro, and almost certainly involved extinct Arawak languages such as Bahuana, among other perhaps unrelated languages. The detailed study of the evolution of POK grammar and lexicon – in which I have benefited enormously from collaboration with Lev Michael and Rosa Vallejos – is crucial to understanding this social and linguistic history.

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