

On Záparoan as a valid genetic unity: Preliminary correspondences and the status of Omurano

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Abstract

The Záparoan linguistic family has been so far acknowledged as constituting a genetic group only on the basis of lexical similarity and grammatical parallels. We present here a preliminary statement of recurring sound correspondences holding among the basic lexical and grammatical vocabularies of three languages usually seen as belonging into the Záparoan family: Iquito, Arabela and Záparo. Though still a preliminary effort towards a more complete understanding of the history of this group, this is enough to gain some insight into the sound changes that have acted in the diversification of these languages from their putative common ancestor and to qualify the claims concerning the Záparoan affiliation of a fourth language, Omurano, our conclusion being that no evidence for this hypothesis exists.

Keywords: Záparoan languages. Reconstruction. Comparative Method.

Resumo

A família linguística Záparo é reconhecida como tal, até o momento, com base somente em similaridades lexicais e alguns paralelos gramaticais. Apresentamos aqui um conjunto de correspondências sonoras regulares encontradas nos vocabulários lexicais e em itens gramaticais das três línguas usualmente apontadas como constituindo essa família: o Iquito, o Arabela e o Záparo. Embora este seja ainda um esforço preliminar em direção a uma caracterização mais completa da história dessa família, há fundamentos mais do que suficientes para avançar a nossa compreensão das mudanças sonoras que atuaram na diversificação dessas línguas a partir do seu ancestral comum e para qualificar afirmações presentes na literatura acerca da filiação de uma quarta língua à família Záparo, o Omurano. Concluímos que não existe nenhuma evidência em favor dessa hipótese.

Palavras-chave: Línguas Záparo. Reconstrução. Método Histórico-Comparativo.

0. Introduction

The existence of a linguistic family of varying and loosely defined constitution called ‘Záparo’ or ‘Záparoan’, encompassing languages spoken in what now corresponds to north Peru and southeastern Ecuador, is acknowledged in several works concerned with the language families of South America (Key 1979; Stark 1985; Greenberg 1987; Kaufman 1990, 1994; Campbell

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1997; Wise 1999). Works dealing with any of the particular languages taken to belong into the Záparoan family also state, in greater or lesser detail, the constitution of such a genetic unity (e.g., Rich 1963; Payne 1985; Peeke 1991; Curi 2005). The languages making the putative Záparoan family are all dead or on the verge of extinction, having together less than 300 speakers.

These remarks notwithstanding, there isn't, to our knowledge, any work trying to demonstrate the genetic kinship of the Záparoan languages with the usual standards of rigor and evidence demanded in Historical Linguistics. That is, no work so far has established the existence of systematic, recurring phonological correspondences in semantically-matched lexical and grammatical morphemes of these languages (cf. Wise 2005). So far, the hypothesis that the similarities noted among these languages could be due to some other factor such as diffusion has not been eliminated by the postulation of sound correspondences and systematic grammatical comparisons; the claim that the set of languages usually grouped under the label 'Zaparoan languages' constitutes a legitimate genetic unity has not been properly vindicated.

The present paper aims at giving a head start toward this goal. To this end, we are going to present a few sound correspondences holding between the 'core' of Záparoan languages (those taken in all available proposals as belonging into the family) and based on this we are going to assess the status of another language that has been assigned to this family on a less secure basis, the Omurano (or Omurana) language. Our objective here is to move beyond the recognition of look-alikes by simple "eyeballing" (Matisoff 1990) or "first-pass etymologies" (Watkins 1990) that has so far characterized comparative approaches to the putative Záparoan languages. We will concern ourselves with more or less obvious etymologies or cognate sets which are nevertheless revealing about the history of this language group, in a sense in which simple, unanalyzed comparanda cannot be (Watkins 1990: 294-295).

1. The Záparoan Languages

We recognize here as the 'core' of what constitutes the putative Záparoan family, and the target of our comparative work, the following languages or dialect clusters (with alternative names given between brackets):

- **Záparo** (Zápara, Kayapwe)
- **Iquito-Cahuarana** (Amacacore, Hamacore, Quiturran, Puca-Uma)
- **Arabela-Andoa** (Chiripuno, Shimigae, Gae, Simigae, Gaye).

A few other languages outside this core have been claimed to belong into the Záparoan family, at different times and with different degrees of confidence, such as Taushiro and Omurano. We are not going to deal with Taushiro in this paper (see: Wise 1985: 217, 1999).

1.1. Former proposals

Beuchat & Rivet (1908:237-239) identify 22 ‘Záparoan groups’ on which some information concerning geographic location and relations with the neighboring Jívaro or Cahuapana was available. The authors also present a vocabulary, including comparisons between Záparoan languages ‘*chaque fois qu’une ressemblance assez nette existait entre eux*’ (1908:240). An interesting comparative discussion of grammatical parallels, especially those concerning the person-markers signaling possession (1908:245-247) follows the vocabulary.

Loukotka (1968:157) presents a few items from the Tessmann (1930) data on Omurano and states that the language is an isolate. His ‘Záparo stock’ includes 12 language names, several of which are actually close dialectal varieties. For 5 of these no data whatsoever is known (1968:159-160).

Stark’s 1985 paper makes two important claims concerning the Záparoan linguistic family (all the more striking since no evidence is offered to support them): that Omurano belongs into Záparoan (a claim echoed as late as Wise 1999) and that the Iquito-Cahuarana branch is the most conservative branch of the family (1985:185).

Greenberg’s (1987) study shares with Loukotka’s the advantage of showing the data upon which his claims are based. He goes further, however, in presenting what might be taken as grammatical evidence for the constitution of Záparoan as a valid genetic group. The Záparoan languages are included by Greenberg within his Andean group, possibly forming a subgroup with Cahuapana (1987:99-100). Auca (Sabela), which was previously tentatively assigned to Záparo (cf. Wise 1979:42) is also classified as Andean, though explicitly recognized as quite diverse from Záparo, maybe forming a subgroup along with Omurano (Omurana, Mayna; 1987:100). Greenberg recognizes Arabela, Andoa, Iquito and Záparo proper as the languages forming his Záparo group.

Peeke (1991:62-67) presents a comparison of lexical material and short phrases from Záparo and Arabela, both of which are claimed by the author to belong into the Záparo family. There are no correspondents in the Arabela material presented to several of the Záparo items. The material from both languages is presented in phonetic rather than phonological form and many of the forms are clearly not equivalent morphologically. Entry 78, at page 65 for example compares Záparo *ku níya* ‘my son’, with the semantically equivalent Arabela form *k^wa niyanu*, where the latter form can be morphologically segmented as *niya-nu*.

Kaufman (1990:42-43) gives Záparo as possibly related to Yagua, a connection proposed independently by Morris Swadesh and Doris Payne (cf. Payne 1985) and gives Omurano as well as Sabela as independent languages, not related to Záparo. Kaufman (1994:63) re-states the same claims but

indicates something in the way of subgrouping within Záparo: Arabela-Andoa and Záparo-Conambo would be closer to each other than any of these is to Iquito-Cahuarano. As it regards Omurano, the 1994 overview improves over that of 1990 by presenting a few lexical comparisons which could suggest an affiliation of Omurano with Candoshi and Taushiro.

A short review of the claims concerning the Záparoan affiliation (or lack thereof) of the languages under scrutiny is given in table form below. The last entry refers to the classification presented by the *Ethnologue* guide (Lewis 2009):

Table 1. Selected reference works and their views on the composition of the Záparoan family: all accept the inclusion of Arabela, Iquito and Záparo in this family; Stark 1985, Wise 1999 and the 2009 edition of the *Ethnologue* at least suggest that Omurano may be a member of the family.

	Arabela	Záparo	Iquito	Omurano
Kaufman 1990	yes	yes	yes	no
Campbell 1997	yes	yes	yes	no
Greenberg 1987	yes	yes	yes	no
Loukotka 1968	yes	yes	yes	no
Stark 1985	yes	yes	yes	yes
Key 1979	yes	yes	yes	no
Wise 1999	yes	yes	yes	yes
<i>Ethnologue</i> 2009	yes	yes	yes	yes

The table above shows that all cited works include Záparo, Arabela and Iquito as belonging into the Záparoan language family. In addition, three of these claim that the Omurano language also belongs into this family. Strikingly, one gets the feeling that, in terms of empirical coverage, the Beuchat & Rivet 1908 paper remains the best comparative work so far done on the Záparoan languages.

We will concern ourselves in the rest of the paper with the three leftmost languages in the table above, those taken by the relevant works and researchers as making up the Záparoan language family: Arabela, Záparo and Iquito. A final section of the present paper will be concerned with the putative affiliation of Omurano along with the ‘core’ Záparoan languages. This last section also deals with identified or likely sources for borrowed vocabulary.

1.2. The Phonological systems

The segmental inventory of the putative Záparoan languages isn't extraordinary at all in its composition. Vowel length is apparently phonemic in all three 'core' languages, though the Arabela inventory deviates from that of both Iquito and Záparo in having two mid vowels. The Iquito language has a "typically Amazonian" set /a i u i/ while Záparo has /o/ instead of /u/ as its back rounded vowel and has /Λ/ instead of /i/ as its non-low central vowel (though Peeke 1962:129, footnote 7, points out that the Záparo vowel phonemicized as /Λ/ is "phonetically equivalent" to a high central vowel). Arabela, on the other hand, has two mid vowels and has no close-central vowel, yielding the inventory /a i e o u/. It will be seen as the phonological correspondences are discussed as well as understood in terms of properties of the synchronic systems, that many of these differences may be only superficial and phonologically irrelevant.

The consonantal inventories are also very similar, but this time Iquito and Záparo part company, in that the latter has a phonemic affricate and a glottal stop, both absent from Iquito and Arabela. The Záparo consonantal inventory is: /p t k m n ts s r h ʔ w j/. Iquito has /s/ as a continuant obstruent while Arabela has both /s/ and /ʃ/. Though given a separate grapheme (**sh**) in the Záparo orthography (cf. Moya 2009) the palatal affricate is an allophone of **s** in the context of the high vowel **i** in the Záparo patrimonial lexicon; instances of a palatal fricative in the context of other vowels are found in loanwords (e.g., **pishaka** "bird" < Quechua **pishku**). There's evidence that, parallel to the opposition **s-sh**, Arabela also has an opposition between plain and palatalized stops. This issue will be tackled in section 3.2.5.

If there is explicit evidence that the Arabela, Iquito and Záparo languages are indeed genetically related, then it is a matter of central interest to an understanding of the diachronic changes underlying the diversification of the Záparoan languages to know how these differences in segmental composition came about. We present below the segmental phonological systems assumed for the three languages with some of the oppositions and segments that will concern us in the present paper highlighted:

Iquito (Iqt):

p	t	k		i	i	u
	s		h			
m	n					
	r	y	w		a	

Arabela (Ar):

p	t	k	i	u
	s	sh	h	
m	n		e	o
	r	y	w	a

Záparo (Zp):

p	t	k	i	
	ts			Λ (e)
	s	h		o (u)
m	n		a	
	r	y	w	

From a comparative perspective, some of the outstanding features of the segmental inventories of the Záparo languages that will concern us in the present paper are: (i) In Arabela, the presence of an opposition between two fricatives: anterior **s** and palatal **sh** and the presence of two back vowels **o** and **u**; (ii) in Záparo, the presence of an affricate **ts** opposing the simple fricative **s**.

2. The data

The data used in the present study consisted of lexical items on the three languages amassed from three kinds of sources: (1) descriptive studies on the phonology, morphology or syntax of the languages, (2) dictionaries and (3) less systematic wordlists. With few exceptions, such as the more theoretically dense works on the Iquito language, most of the material on the languages under scrutiny requires some treatment before adequate comparative work can be carried. Both the Arabela and Iquito data are available in a practical orthography. Most of the Záparo and part of the Arabela material is given in phonetic form, or in analyses that somehow confound both levels. Indications of amendments or modifications in the analyses consulted will be given during discussion and data presentation in the next sections.

Of all three languages under comparison, Iquito is by far the better described. For the Iquito and Arabela dictionaries the items are given in a format that calls for adequate analyses before any comparative work is done.

A system of writing which is neither phonemic nor phonetic in a consistent manner is used, and most if not all entries give morphologically complex words with no morpheme boundaries indicated. At least a working knowledge of the phonology and morphology of these languages is required even for a preliminary scrutiny such as ours. For the purposes of the present work, the following studies and materials were consulted: Acosta 2005, Curi 2005, Michael 2003 and Hansen 2007, 2010 and especially Michael *et al.* 2006 for Iquito; Rich 1963, Eggiman 1975 and Rich 1999 for Arabela.

In the first version of this paper, the Záparo data consisted basically in what could be extracted from Peeke's 1962 and 1991 works on the language's morphosyntax and from material such as wordlists (Peeke & Sargent 1954). Later on, we were able to harvest ample lexical material from Moya 2009²¹. The phonemic inventory presented in section 1.3 for this language is that assumed by Peeke (1991: 6) and was established by Mary Sargent.

The items were selected for comparison after some initial inspection of a comparative list of both free and bound forms in all three languages revealed similarities that could plausibly point to common ancestry (cognate status). Some items shared only by two of the languages under comparison were also accepted, especially when they exemplify some phonological correspondence independently established in etymologies formed by cognates in all three languages. Basic ("non-cultural") vocabulary, as well as bound forms such as pronominal affixes or clitics, was given preference.

2.1. Limitations and Scope of the Present Work

As an observation concerning the preliminary status of the present work, we note that we will leave aside from deeper considerations a few aspects of the sound structure of the Záparoan languages, including stress/accent, vowel length, the secondary feature of labialization and some complex correspondence sets involving the coronal consonants **t**, **r** and **n**. It must be emphasized that similar restrictions of scope are present in comparative works of other South American groups due to limitations in the descriptive material, especially as it concerns prosodic features (see e.g., Payne 1991, Aschmann 1993). Though vowel length is indicated in the examples below as they stand in the primary descriptive sources, diacritic signals indicating stress and/tone are not.

Both the synchronic and diachronic patterns of labialization seem more complex than those related to palatalization, so that a thorough understanding of the former will not concern this preliminary report on the status of Záparoan as a genetic unity. As a consequence of this deliberate limitation imposed on

² On this timely reference I thank Prof. Lev Michael.

the present work, we will treat **Cw** sequences throughout the relevant corpus as two-segment sequences rather than as labialized consonants (note that **Ci** sequences, on the other hand, stand for palatalized consonants in the present paper). This move gives greater simplicity to the correspondences, does not require a commitment to the existence of phonemic labialized consonants in any of the languages in question and offers no hindrance to the more immediate goals of this study. Both vowel length and stress probably require separate studies, these features being inconsistently represented if at all in most of the sources available³.

3 Correspondence sets

Our first step is to state in an explicit manner a set of regular, recurring and co-occurring phonological correspondences that may furnish the evidence for the claim that Arabela (Ar), Záparo (Zp) and Iquito (Iqt) are indeed genetically related languages. Our presentation starts with the more straightforward and unproblematic correspondences. The full set of putative cognate sets for which reasonable reconstructed forms can be proposed is listed in section 6.

3.1. Identity Correspondences

- (1) Ar: **a** Zp: **a** Iqt: **a** : PZ: ***a**
 Ar: **nahaka** Zp: **anahaka** Iqt: **anahaka** “smoke, cloud”
 Ar: **hapaka** Zp: **ahapaka** Iqt: **ahapaka** “wasp, bee”
 Ar: **na-** Zp: **na-** Iqt: **na-** “3rd person plural prefix”
 Ar: **mara-** Zp: **mara-** Iqt: **mara-** “guts”
- (2) Ar: **i** Zp: **i** Iqt: **i** PZ: ***i**
 Ar: **masi-** Zp: **masi-** Iqt: **masi-** “to flee, to hide oneself”
 Ar: **risi** Zp: **irisi** Iqt: **irisi** “fat, large” (fruits)
 Ar: **mii-** Zp: **mii-** Iqt: **mii-** “to do”
 Ar: **namihia** Zp: **namihia** Iqt: **namiha** “eye”
 Ar: **ni-** Zp: **ani-** Iqt: **ani-** “to come”
 Ar: **tohi-** Zp: **tawhi-** Iqt: **tuuhi-** “to listen”
 Ar: **ki-** Zp: **iki-** Iqt: ----- “to be, to have”
- (3) Ar: **p** Zp: **p** Iqt: **p** PZ: ***p**
 Ar: **sapi(tiaha)** “fish” : Zp: **sapi** : Iqt: **saapi (taaha)** “Sting ray” (sp.)

³ For instance, Rich 1999: 13 notes that even though main stress placement in Arabela is unpredictable, the entries in his dictionary do not include any markings for stress. In Rich 1963 stress is indicated in phonetic transcriptions though in a way that offers no help to the reader: forms such as [“sa”par†”tu/] “shoulder blade” (analyzed as /”sa”par”tu/; Rich 1963:195) give no clear indication of which syllable receives main stress.

- | | | | |
|-------------------|---------------------|---------------------|-------------|
| Ar: hapaka | Zp : ahapaka | Iqt: ahapaka | “wasp, bee” |
| Ar: pani- | Zp: pani- | Iqt: ----- | “to want” |
- (4) Ar : **t** Zp: **t** Iqt: **t** PZ: ***t**
- | | | | |
|------------------|-------------------|--------------------|----------------------------|
| Ar: tohi- | Zp: tawhi- | Iqt: tuuhi- | “to listen” |
| Ar: -tu | Zp: -to | Iqt: -ti | “Feminine singular suffix” |
| Ar: -te | Zp: -ta | Iqt: -ti | ‘Causative suffix’ |
- (5) Ar: **k** Zp: **k** Iqt: **k** : PZ : ***k**
- | | | | |
|------------------|------------------|-------------------|-----------------|
| Ar: make- | Zp: makA- | Iqt: maki- | “to sleep” |
| Ar: ki- | Zp: iki- | Iqt: ----- | “to be” |
| Ar: kanaa | Zp: kana | Iqt: kana | “1° Pl. Excl.” |
| Ar: -ka | Zp: -ka | Iqt: -ka | ‘number suffix’ |
| Ar: kaha- | Zp: kaha- | Iqt: kaha- | ‘hair; feather’ |
- (6) Ar: **m** Zp: **m** Iqt: **m** PZ: ***m**
- | | | | |
|--------------------|--------------------|--------------------|----------------------------|
| Ar: mii- | Zp: mii- | Iqt: mii- | “to do” |
| Ar: namihia | Zp: namihia | Iqt: namiha | “eye” |
| Ar: mo- | Zp: amo- | Iqt: amu- | “to kill” |
| Ar: masi- | Zp: masi- | Iqt: masi- | “to flee, to hide oneself” |
| Ar: mahaa | Zp: maha | Iqt: mahaa | “raw” |
- (7) Ar: **n** Zp: **n** Iqt: **n** PZ: ***n**
- | | | | |
|--------------------|---------------------|----------------------|-----------------------------|
| Ar: nahaka | Zp : anahaka | Iqt : anahaka | “smoke, cloud” |
| Ar: na- | Zp: na- | Iqt: na- | ‘3rd person prefix’ |
| Ar: nio | Zp: nio | Iqt: iinu | “foot” |
| Ar: -nu | Zp: -no | Iqt: -ni | ‘Masculine singular suffix’ |
| Ar: ----- | Zp: ikini- | Iqt: ikinii- | “to vomit” |
| Ar: sani- | Zp: sani- | Iqt: sani- | “to taste (food)” |
| Ar: nana-ka | Zp: nana-ka | Iqt: ---- | “blood” |
- (8) Ar: **s** Zp: **s** Iqt: **s** PZ: ***s**
- | | | | |
|--------------------|-------------------|---------------------|----------------------------|
| Ar: masi- | Zp: masi- | Iqt: masi- | “to flee, to hide oneself” |
| Ar: risi | Zp: irisi | Iqt: irisi | “fat, large” (fruits) |
| Ar: sesa | Zp: ---- | Iqt: sis | “bad” |
| Ar: sani- | Zp: sani- | Iqt: sani- | “to taste (food)” |
| Ar: sukwana | Zp: sokana | Iqt: sikwana | “lice” |
| Ar: sinia- | Zp: ----- | Iqt: sina- | “mosquito” |
- (9) Ar: **h** Zp: **h** Iqt: **h** PZ: ***h**
- | | | | |
|------------------|-------------------|--------------------|-------------|
| Ar: tohi- | Zp: tawhi- | Iqt: tuuhi- | “to listen” |
| Ar: mahaa | Zp: maha | Iqt: mahaa | “raw” |

Ar: hapaka	Zp : ahapaka	Iqt: ahapaka	“wasp, bee”
Ar: nahaka	Zp : anahaka	Iqt : anahaka	“smoke, cloud”
Ar: kaha-	Zp: kaha-	Iqt kaha-	‘hair; feather’

(10) Ar: **r** Zp: **r** Iqt: **r** PZ: ***r**

Ar: tari-	Zp: tari-	Iqt: -----	“morning”
Ar: risi	Zp: irisi	Iqt: irisi	“fat, large” (fruits)
Ar: samaru	Zp: tsamaro	Iqt: -----	“demon”
Ar: -ra	Zp: -ira	Iqt: -ira	‘Benefactive suffix’
Ar: mara-	Zp: mara-	Iqt: mara-	“guts”
Ar: moro-	Zp: maraw-	Iqt: maruu-	“to tie”

3.2. Non-identity Correspondences

3.2.1. Word-initial vowels in Arabela

The correspondence set below suggests that one of the singularities of the Arabela language among Záparoan languages, the fact that in this language no word begins with a vowel, is in all likelihood a historical innovation, while Záparo and Iquito are more conservative in keeping the etymological initial vowels (cf. sections 3.2.5 and the concluding remarks in 5 for further consequences and qualifications on this basic statement).

(11) Ar: **zero** Zp: #**V** Iqt: #**V** PZ: *#**V**

Ar: nahaka	Zp : anahaka	Iqt : anahaka	“smoke, cloud”
Ar: hapaka	Zp : ahapaka	Iqt: ahapaka	“wasp, bee”
Ar: risi	Zp: irisi	Iqt: irisi	“fat, large” (fruits)
Ar: ti-	Zp: ati-	Iqt: aati-	“to talk”
Ar: no-tu	Zp: -----	Iqt: anuu-ti	“Leche Caspi” (tree sp.)
Ar: ni-	Zp: ani-	Iqt: ani-	“to come”
Ar: shaa-ka	Zp: tsani-ka	Iqt: isaa-ka	“urine”
Ar: shuu-nia	Zp: tsuy-nia	Iqt: isuu-na	<i>Urtica urens</i>
Ar: nio	Zp: nio	Iqt: iinu	“foot”
Ar: kia-	Zp: -----	Iqt: ika	“tooth”
Ar: maru	Zp: umaru	Iqt: -----	“rain”
Ar: kia-	Zp: ikwa-	Iqt: ikwa-	“to go”
Ar: tia	Zp: ita	Iqt: ita	“house”
Ar: ki-	Zp: iki-	Iqt: -----	“to be, to have”

3.2.2. The ‘central’ vowel:

The following non-identity correspondence among vowels is observed:

(12) Ar: e	Zp: Λ	Iqt: i	PZ: * ə	
Ar: -te	Zp: -tΛ	Iqt: -ti		‘causative suffix’
Ar: make-	Zp: makΛ-	Iqt: maki-		‘to sleep’
Ar: tee-	Zp: -----	Iqt: tii-		‘where’
Ar: kete-	Zp: -----	Iqt: kiti-		‘to cut oneself’s hair’
Ar: keta-	Zp: kΛta-	Iqt: kiraa-		‘to cut one’s hair’
Ar: tawe-	‘foreigner, stranger’	Zp: tawΛ-	‘to hate’	Iqt: -----
Ar: tamwe-	Zp: tamΛ-	Iqt: tamii-		‘to lick’
Ar: sesa-	Zp: -----	Iqt: sis-		‘bad’

The statement that this correspondence involves non-identical outcomes in the daughter languages may be tempered by some considerations on Arabela phonology. It is necessary to remark that in this language the vowel **e** does not behave phonologically as a front vowel along with **i**. As the examples below show, a vowel **e** does not cause the palatalization of the Infinitive marker **-/nu/** (data from Rich 1963: 200-201 and Eggiman 1975: 3):

/ti-nu/	[tiniu]	‘to fall’
/ki-nu/	[kiniu]	‘to stay’
/pi-nu/	[pinu]	‘to hit’

but:

/mwe-nu/	[mwenu]	‘to strain’
/rose-nu/	[rosenu]	‘to go down’

Then, if there’s evidence that **e** does not behave phonologically in Arabela as a front (or coronal) vowel, than the correspondence in (12) above is just another (phonological) identity correspondence, as much as those given in section 3.1, since Arabela **e** is, for all effects, a non-peripheral, centralized vowel, as are its correspondents in Iquito and Záparo. For this correspondence, a single, non-peripheral vowel ***ə** may be set for Proto-Záparoan.

3.2.3. The PZ diphthong ***aw** and the back vowels

The correspondence below suggests that at least some of the tokens for Arabela **o** and Iquito **u** evolved from the monophthongization of a previous closing diphthong:

(13) Ar: o	Zp: aw	Iqt: u	PZ: * aw	
Ar: tohi-	Zp: tawhi-	Iqt: tuuhi-		‘to listen’
Ar: -jo	Zp: -jaw	Iqt: -----		‘Negative nominalization suff.’
Ar: no-	Zp: naw-	Iqt: nu-		‘3 rd Person Singular Prefix’
Ar: (so)ko-	Zp: kaw-	Iqt: ku-		‘snake, viper’

Ar: noo-	Zp: anaw-	Iqt: -----	“pain”
Ar: moro-	Zp: maraw-	Iqt: maruu-	“to tie”

Such a monophthongization process is a natural phonetic process which can be characterized by the fusion of the diphthongal features into a monophthong (cf. e.g. Schane 1995) and has been observed in the history of diverse language groups (e.g., the well-known reflex of PIE ***au** > **o** in Sanskrit; Ghatage 1962 or Proto-Quechua ***aw** > **o** in Central and Amazonian Quechua varieties; Cerrón-Palomino 1987: 167-168).

Another correspondence set however, reveals the historical identity between the Záparo back monophthong **o** and some tokens of the back monophthongs in Arabela and Iquito:

(14) Ar: **o** Zp: **o** Iqt: **u**

Ar: nio-	Zp: nio-	Iqt: iinu-	“foot”
Ar: mo-	Zp: amo-	Iqt: amu-	“to kill”
Ar: kwo-	Zp: ko	Iqt: ku-	“1 st person”
Ar: mokwa	Zp: moka-	Iqt: mukwa	“rotten”

It is important to note, on this regard, that Záparo opposes /**aw**/ to /**o**/, for example, in the suffixes **-no** (masculine singular in **nia-no** “son”) and **-naw** (human singular in **iritʃa-naw** “wife”; cf. Peeke 1991: 29). This evidence precludes the hypothesis that Záparo **aw** is simply an allophone of **o**, in which case the data displayed in correspondence (13) above could be reanalyzed as instances of correspondence (14). In this respect then, the Záparo language stands as the most conservative one, having an opposition between **o** and **aw** that could be tentatively assigned to the Proto-language, having the following reflexes:

PZ * aw > aw (Záparo)
> o (Arabela)
> u (Iquito)

In the next section (3.2.4.) we present further evidence pointing to the rather conservative character of Záparo among Záparoan languages, at least as far as the segmental phonology is concerned.

The correspondences available for the back monophthongs present additional complications:

(15) Ar: **u** Zp: **o** Iqt: **i**

Ar: -nu	Zp: -no	Iqt: -ni	‘masculine singular suffix’
Ar: -tu	Zp: -to	Iqt: -ti	‘feminine singular suffix’
Ar: -nu	Zp: -no	Iqt: -ni	‘infinitive’
Ar: naku	Zp: -----	Iqt: naki	“hill”

Ar: **nu-** Zp: ----- Iqt: **anii-** “to cut down (a tree)”
 Ar: **sukwana** Zp: **sokana** Iqt: **sikwana** “lice”

Two points are worth noting here: the first is the potential relevance of these data to an account of the unique Arabela vowel system which opposes two back vowels **u** and **o**; the two other Záparoan languages show only one of these. The second one refers to the rather ‘unnatural’ correspondence involving two back rounded vowels in Arabela and Záparo with a front unrounded high vowel in Iquito.

On the ‘naturalness’ of the correspondence, the phonetic distance between the items in hand may be less than apparent. For Záparo, Moya (2009) notes the existence of fluctuations between [i] and [e] in certain words, as well as between [u] and [o]. Indeed, the infinitive marker and the independent first-person singular pronoun are given, respectively, as **-no** and **ko** by Peeke (1991), but as **-nu** and **ku** by Moya (2009). So, it turns out that Záparo has a single back, rounded vowel phoneme alternating between **u** and **o**. If the phonemization of this segment as **u** is justified, then at least we have all high vowels in this correspondence. If it were not for the item for “hill”, a PZ *V_[+high] segment could be seen as being subject to a ‘coronalization’ change in Iquito. It is more likely though, that this segment was not only [+high] but also [+back] and [+round] in the proto-language, and that the loss of its labial character prompted a fronting change in Iquito (few languages tolerate back unrounded vowels). Under this assumption, that the labial character of the vowel is primitive and the **i** found in Iquito is innovative, the secondary labialization found in the velar consonant in the item for ‘lice’ above (**sikwana**) could be explained as a vestige of this vowel’s labial character and its contextual ‘coloring’ of the consonant.

However, further inquiry on this hypothesis would drive us into the domain of labialization, a feature that seems to have a rather complex history within the Záparoan family, being for this reason avoided in the present, preliminary study.

As for the double opposition of back rounded vowels in Arabela, in contrast to the Záparo and Iquito systems with a single back rounded vowel, the most reasonable conclusion to attain at this point is that this feature is inherited from the PZ ancestral language, since no context can be identified in Arabela to suggest that a phonemic split of a single ancestral back vowel could have occurred in the history of this language. We stick therefore to the following pattern of reflexes on a tentative basis:

PZ: ***o**, ***u** > **o** (Záparo)
 > **o**, **u** (Arabela)
 > **u**, **i** (Iquito)

Given this hypothesis that the Arabela system is the most conservative one, I will tentatively reconstruct two back vowels to the PZ stage, with phonetic values identical to those of the two back vowels found in the Arabela inventory:

Ar: **u** Zp: **o** Iqt: **i** PZ: ***u**

Ar: **o** Zp: **o** Iqt: **u** PZ: ***o**

3.2.4. The Záparo affricate **ts**

Among the three core Záparoan languages examined here, Záparo is the sole one to have a phonemic affricate. In comparative terms, this affricate responds to **s** in the other languages (correspondence 16 below). There's, nevertheless, a larger set of forms showing a regular identity correspondence **s:s** for the three languages (correspondence 17):

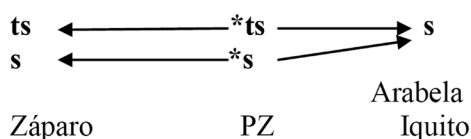
(16) Ar: **s** Zp: **ts** Iqt: **s** PZ: ***ts**

Ar: sa-	Zp: atsa-	Iqt: asa-	“to eat”
Ar: sami-	Zp: tsami-	Iqt: saami-	“to rest; to be new”
Ar: samaru	Zp: tsamaro	Iqt: -----	“devil”
Ar: saaka	Zp: katsa	Iqt: saaka	“thing; what (Interrogative pronoun)”

(17) Ar: **s** Zp: **s** Iqt: **s** PZ: ***s**

Ar: masi-	Zp: masi-	Iqt: masi-	“to flee, to hide oneself”	
Ar: risi	Zp: irisi	Iqt: irisi	“fat, large” (fruits)	
Ar: sesa	Zp: ----	Iqt: sis	“bad”	
Ar: sukwana	Zp: sokana	Iqt: sikwana	“lice”	
Ar: sapi(tiaha)	“fish”	Zp: sapi	Iqt: saapi (taaha)	“stingray” (sp.)
Ar: sani-	Zp: sani-	Iqt: sani-	“to taste” (food)	

Given that the contexts in which Záparo shows **ts** (16) as opposed to **s** (17) do not point unequivocally to a contextual factor that could lead to a split in the language (thus yielding **s** and **ts** as the Záparo reflexes of a single PZ phoneme) we are forced to accept the tentative conclusion that Záparo maintains an inherited PZ opposition between ***s** and ***ts**. This opposition was merged in a context-independent manner in both Arabela and Iquito:



It is still likely, however, that some **ts** tokens in Záparo have a distinct origin, due to an irregular palatalization process that seems to have taken place in the history of this language (see below).

3.2.5. The Arabela opposition **s-sh**

Arabela is the sole Záparo language to have an opposition between two coronal fricatives **s** and **sh** albeit of low functional yield. As the items for ‘urine’ and ‘nettle’ below suggest, **sh** in Arabela seems to be the outcome of palatalization induced by the word initial high vowel **i** that was lost in the language but retained in Iquito (and irregularly so in Záparo, as seen in correspondence 11). Note that the last item below shows another instance of **sh** in Arabela though we lack the evidence for a word-initial **i** in Iquito:

- (18) Ar: **sh** Zp: **ts** Iqt: **s**
 Ar: **shaa-ka** Zp: **tsani-ka** Iqt: **ísaa-ka** “urine”
 Ar: **shuu-nia** Zp: **tsuy-nia** Iqt: **isuu-na** “nettle”(U. urens)
 Ar: **shotu-** Zp: **tsutu-** Iqt: (**wira** < Quechua) “grease, fat”

Even with the observed paucity of data on this regard, we suggest that the Arabela palatal fricative **sh** is a conditioned outcome of PZ ***s**, caused by the palatalization induced by the vowel ***i** (retained as such in Iquito) which was subsequently lost. The palatalization process followed by the loss of the conditioning **i** applied with full regularity in Arabela. In Záparo this process applied in a sporadic manner, deriving some of the tokens of the Záparo affricate **ts**. As shown in 3.2.1 (correspondence 11) however, many Záparo items still contain the word-initial **i** that was lost in Arabela (along with all word-initial vowels). The widespread loss of **i** in Arabela (and less so in Záparo) lead to the emergence of an opposition between plain and palatalized consonants in word-initial position, even if this isn’t explicitly mentioned in the presentation of these language’s segmental inventories given in section 1.2. The reason for this lack of clarity in the statement of a plain-palatalized opposition in word-initial position stems, of course, from the well-known practice of employing bi-phonemic representations of the palatalized consonants as /Ci/ sequences (cf. e.g. Rich 1999:14).

4. Borrowing, the status of Omurano and some residual issues

4.1. Contacts with Quechua

As it is well-known, Quechua loans are very common in a variety of Western Amazonian languages (cf. e.g. Adelaar 2007). As elsewhere, words of Quechua origin in Záparoan languages are usually ‘cultural items’, such as

Iquito **ampi-si-taha** ‘drug’ (Sp. *medicamento*) from the Quechua word **hampi** and **kuriki** from **qolqe** ‘money’. In the Záparo language proper, Moya 2009 reports that most of the detailed lexicon for flora and fauna terminology is derived from the local Quechua varieties (Pastaza Quechua).

Other considerations also support Moya’s (2009) statement that the local Quechua varieties are the ultimate source of these loanwords. Since the Záparo languages all have the glottal aspirate **h** as an independent phoneme, there would be no problem in principle for the adoption of the Quechua word **hampi** into the vocabulary of these languages. The fact that the form found in, say, Iquito, is actually **ampi** is consistent with the hypothesis that this item comes ultimately from a variety of Quechua, mostly QIIB or ‘Chinchay’ varieties (Cerrón-Palomino 1987:159) that was subjected to a regular loss of ***h**. The obvious candidate, due to reasons of geographical proximity is the Pastaza variety of Quechua. A table showing a sample of the Quechua loans in Záparoan languages is given below:

Table 2. Items of Quechua origin in particular Záparoan languages.

Quechua word	Záparoan languages	Meaning
hampi (Quechua IIB Quechua: ampi)	Iqt: ampi	“medicine”
qolqe (Quechua IIB: kurki)	Iqt: kuuriki	“money”
pishku	Zp: pishaka (cf. Moya 2009)	“bird”
wira	Iqt: wira	“grease, animal fat”

For further information on a “Quechua lexicon” mostly dealing with fauna and flora terminology in the Záparo language, the reader is referred to Moya 2009. Care must be taken however, since, contrary to the standard assumption that sees Quechua as the *default* donor language in interactions with lowland languages, many items, especially in flora and fauna lexical domains, may actually be borrowings from lowland languages into the local Quechua varieties. That this may be the case isn’t surprising given the relatively recent arrival of the Quechua language in such areas and the fact that lexical material of unidentified substrate languages is a well-known feature of “Chinchay” Quechua varieties (Cerrón-Palomino 1987). A candidate for such a status is the item for a variety of nettle (*Urtica urens*) in the local Quechua dialect, **tsini** (Moya 2009:207). The forms found in the Záparoan languages are Arabela: **shuunia**, Záparo: **tsuynia** and Iquito: **isuuna** and the particularly close match between the Quechua and the Záparo forms is explainable by the fact that the Quechua variety sampled by Moya (2009) is that spoken by the (ethnic) Záparo.

4.2. Vocabulary for fauna, flora and natural phenomena

An interesting pattern in the data consists in mismatches between Záparo and Arabela on the one side, an Iquito in the other, within the lexico-semantic domain of items for fauna, flora and natural phenomena. These may as well point to diffusion and contact with other languages or language groups:

Ar: **miaka-na** Zp: **imaka-na** Iqt: **nisinii-na** “thunder, lightning bolt”

Ar: **para-tu** Zp: **para-tu** Iqt: **akira-ha** “wind”

Ar: **neke-ru** Zp: **neke-ru** Iqt: **sikiaa-ha** “red deer”

Ar: **kahaka** Zp: **kahakwa** Iqt: **paraana** “feather”

Ar: **saako** Zp: **sawku** Iqt: **siíkihara** “corn”

Ar: **powaka** Zp: **pawaka** Iqt: **asiwuariika** “caracol” (< Bora: **(mee)wako** ?)

Ar: **kamweta-** Zp: **kamita** Iqt: **himiiti** “squirrel”

Ar: **moo** Zp: **moo** Iqt: **nuna-** “lake” (< Bora: **moo** ?)

Some of the items above, as indicated, look like possible loans from Bora. For other items, nevertheless, there’s evidence that the direction of borrowing could be the inverse: in Bora one finds a classifier for “leaf-like” objects that is **-ʔá.mi**. This marker occurs, as expected, in the word for “leaf”, which is **inàʔámi** (cf. Aschmann 1993:140: Muinane **áame**). A very similar form is found in Iquito, **naámi**. This classifier employed to qualify items as “leaf-like” is, however, apparently reconstructible to the PZ language, as shown by forms such as the Arabela classifier **-mwe** and Záparo **wáma** “variety of leaf” (Peeke 1991:26).

The item for ‘deer’ is very similar to a form with the same broad meaning found in Colombian Arawak languages. Ramirez (2001: 765) gives the basic root **nee-**, followed in some languages by the suffix **-ri** (or variants thereof) and reconstructs the form ***neeri** for the common ancestor of the languages forming his ‘Japurá-Colombia’ subgroup of Northern Arawak languages. Another form which shows a coincidence to those found in Arawak languages with a similar meaning is the word for ‘owl’ in Iquito and Arabela, **pupu-ha** and **popo-kwa**, respectively. Payne (1991:415) reconstructs a form ***punpuli** to his Proto-Arawak. As with the term for ‘deer’, the modern reflexes of this form are found in the Colombian Arawak languages, but also in the Campa group, Resígaro and more strikingly in Waurá (spoken in central Brazil) as well.

4.3. How Compelling is the Evidence for the Záparoan Affiliation of Omurano?

All the three reference works reviewed here which claim a Záparoan affiliation for Omurano, do so without presenting any data (cf. section 1.1). I assumed in this study that this is the (extinct) Omurano (or Omurana) language, on which some lexical information is available (Tessmann 1930) and I have looked for any evidence, on this data set, that could point to a Záparoan affiliation for this language.

The Omurano language is reported to have been spoken near the Urituyacu river, a small affluent of the Marañon in northern Peru (Tessmann 1930:444; Wise 1999:308-309). This region is situated between the Pastaza and Napo rivers, which delimit the territory historically occupied by the speakers of Záparoan languages (Stark 1985; Wise 1999).

A mere inspection of the data presented by Tessmann 1930:455-457 brings no evidence that Omurano could be a member of the Záparoan family. That this is the case can be seen by contrasting the Omurano items given by Tessmann (1930:455-458) with some of the Záparoan cognates presented in the previous sections:

Table 3. A comparison of selected vocabulary items from the ‘core’ Záparoan languages and matched vocabulary items from the Omurano language. A perusal of the table below shows no clear evidence to motivate a hypothesis of genetic connection.

	Arabela	Záparo	Iquito	Omurano
Eye	namihia	namihia	namiha	(a)natñn
Head	naka	anaka	anaka	naneyalok
Hair	kahasu	-----	kahasi	anána
House	tia	ita	ita	ána
Smoke, cloud	nahaka	anahaka	anahaka	niáuwitfo
To eat	sa-	atsa-	asa-	pēñēñ
To sleep	make-	makΛ-	maki-	látjani

Although one is not able to show that any two languages are *not* related (Bright 1970) we can state that given the available evidence, there’s no good reason to believe in the hypothesis that Omurano belongs into the Záparoan family. We present then further corroboration to the hypotheses on the constitution of the Záparo family presented by Greenberg 1987:100 and Loukotka 1968:157, which exclude the Omurano language from this group. It is not surprising that both authors arrive at this conclusion employing a similar

method consisting in the impressionistic inspection of lexical lists: as the table above shows, this much is enough to cast a suspicion on the hypothesis that Omurano belongs into the same family as the three core Záparo languages. Though previously denied by Greenberg 1987 and Loukotka 1968, the putative Záparoan affiliation of Omurano has been stated without any evidential back-up or discussion in many reference works (e.g. Stark 1985; Wise 1999; Lewis 2009).

5. Conclusion and General Remarks

The present work contributes to the advancement of the knowledge of the languages of Lowland South America by presenting the first systematic account of the constitution of the Záparoan linguistic family. Though in many respects a preliminary study, this investigation presents evidence for the existence of a Záparoan linguistic family, a grouping which has been assumed so far on the basis of grammatical and lexical look-alikes alone. In the table 4 below we present a synthesis of the reconstructed segments or segment-sequences (including a juncture symbol) postulated to the Proto-Záparo language, the correspondence(s) supporting each reconstruction and the reference numbers for each of the proposed cognate sets given in section 6 below that support each of the regular correspondences.

Table 4. Reconstructed segments and segment sequences in the left column; relevant correspondences and reflexes in the center and reference numbers to the proposed etymologies, given in section 7 below, that instantiate the particular correspondence.

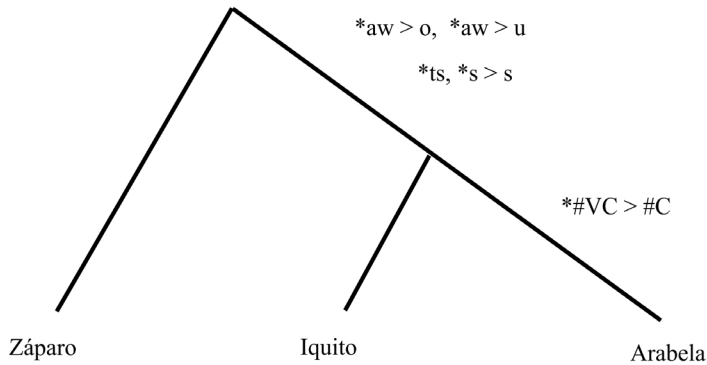
Reconstructed Form	Correspondences	Cognate Sets
* p	Ar: p Zp: p Iqt: p	(1), (40), (41)
* t	Ar : t Zp: t Iqt: t	(10), (17), (45-50)
* k	Ar: k Zp: k Iqt: k	(1), (2), (5), (6), (12), (13), (20-25), (28), (33), (35), (43)
* m	Ar: m Zp: m Iqt: m	(2), (3), (26-33), (45), (51), (52)
* n	Ar: n Zp: n Iqt: n	(4-9), (14), (22), (35-39), (42), (43)
* r	Ar: r Zp: r Iqt: r	(15), (16), (29), (30), (52)
* ts	Ar: s Zp: ts Iqt: s	(11), (51)
* s	Ar: sh Zp: ts Iqt: s Ar: s Zp: s Iqt: s	(16), (18), (31), (41-44),
* h	Ar: h Zp: h Iqt: h	(1), (5), (21), (26), (27), (47)
* #V	Ar: zero Zp: #V Iqt: #V	(1-18), (52)

*aw	Ar: o Zp: aw Iqt: u	(7), (19), (23), (30), (47)
*a	Ar: a Zp: a Iqt: a	(1), (2), (4-6), (11-13), (15), (17), (18), (20-22), (26-31), (33-36), (40-46), (51-52)
*i	Ar: i Zp: i Iqt: i	(8), (10), (16), (27), (31), (32), (40-42), (47), (51)
*ə	Ar: e Zp: ʌ Iqt: i	(25), (28), (44-46), (49), (50)
*o	Ar: o Zp: o Iqt: u	(3), (14), (24), (33),
*u	Ar: u Zp: o Iqt: i	(9), (35), (38), (39), (43), (48)

Attention was also devoted to matters of contact, suggesting that some amount of contact between Záparoan speakers and speakers of Arawak and Bora-Muinane might have occurred. All of this, however, only starts to pave the way for deeper studies on diffusion involving Záparoan languages and the hypotheses suggested here on this regard may be subject to qualification, radical revision or downright rejection. This might be the case given that, except in the case of Quechua, the hypothesis of contact with either Arawak or Bora-speaking communities was ventured only as a way to explain some of the mismatches in flora, fauna and natural phenomena vocabulary, as presented in section 4.2. In almost all these cases, however, it may turn out to be the case that such mismatches are the result of semantic specialization or general semantic change in one of the languages (say, that the Iquito form cognate to those which in Arabela and Záparo mean ‘red deer’ nowadays means ‘deer in general’ or some other variety of deer or has become obsolescent) or that the semantic glosses are not coarse enough (say, the Iquito and Arabela/Záparo words may actually refer to distinct kinds of corn).

As a final statement, we are able to propose a preliminary hypothesis concerning the subgrouping within the Záparoan family. Kaufman 1994: 63 presents the Záparoan family as divided into two subgroups: one formed by Záparo and Arabela, and the other by Iquito.

In contrast to Kaufman’s proposal, some of the changes postulated here seem to draw Arabela and Iquito closer to each other. Both the monophthongization of PZ *aw (cf. 3.2.3) and the merger of PZ *s and *ts (cf. 3.2.4) took place in Arabela and Iquito, but not in Záparo, which stands as the most conservative member of the family in this regard. It is noteworthy that the common loss of word-initial i in Arabela and Záparo, as discussed in the text, is probably a minor convergence of two separate, independent changes. All word-initial vowels were lost in Arabela (cf. 3.2.1) while the loss of initial vowels in Záparo affected only i and even so in a sporadic manner. We therefore propose the following diversification tree and subgrouping for the Záparoan family:



It goes without saying that like all aspects of the historical linguistics of the Záparo family, much has yet to be clarified concerning the internal relationships among these languages.

6. Proposed Záparoan etymologies

The set of the most secure Záparoan etymologies amassed so far, along with tentative reconstructions of the proto-forms and notes on particular etymologies, is given below. The reconstructed forms underlying cognate sets with the correspondences Ar: **u** Zp: **o** Iqt: **i** and Ar: **o** Zp: **o** Iqt: **u** are given with the corresponding Arabela vowels, under the hypothesis, discussed in section 3.2.3 that the Arabela system with two back vowels represents the primitive situation.

- (1) ***ahapaka** ‘bee, wasp’; Ar: **hapaka** ; Zp: **ahapaka** Iqt: **ahapaka**
- (2) ***amaka** ‘stick’; Ar: **maka** ; Zp: **amaka** Iqt: **amaaka**
- (3) ***amo** ‘to kill’; Ar: **mo-** ; Zp: **amo-** ; Iqt: **amu-**
- (4) ***ana-** ‘woman’s sibling’; Ar: **na-**; Zp: **ana-**; Iqt: **ana-**
- (5) ***anahaka** ‘cloud, smoke’; Ar: **nahaka**; Zp: **anahaka**; Iqt: **anahaka**
- (6) ***anaka** ‘head’; Ar: **naka**; Zp: **anaka**; Iqt: **anaka**
- (7) ***anaw** ‘pain’; Ar: **noo-** ; Zp: **anaw-** ; Iqt: -----
- (8) ***ani-** ‘to come’; Ar: **ni-**; Zp: **ani-**; Iqt: **ani-**
- (9) ***anu-** ‘to cut down (a tree)’; Ar: **nu-** ; Zp: ----- ; Iqt: **anii-**

- (10) ***ati-** ‘to talk’; Ar: **ti-** Zp: **ati-** Iqt: **aati-**
- (11) ***atsa-** ‘to eat’; Ar: **sa-** Zp: **atsa-** Iqt: **asa-**
- (12) ***ika-** ‘tooth’; Ar: **kia-** ; Zp: ----- ; Iqt: **ika**
- (13) ***ikwa-** ‘to go’; Ar: **kia-** ; Zp: **ikwa-**; Iqt: **ikwa-**
- (14) ***ino-** ‘foot’; Ar: **nio-**; Zp: **nio-**; Iqt: **iinu-**
- (15) ***-ira** ‘benefactive’; Ar: **-ra**; Zp : **-ira**; Iqt: **-ira**
- (16) ***irisi** ‘fat, large (for fruits)’; Ar: **risi**; Zp: **irisi**; Iqt: **irisi**
- (17) ***ita** ‘house’; Ar: **tia**; Zp: **ita**; Iqt: **ita**.
- (18) ***isa-** ‘urine’; Ar: **shaa-**; Zp: **tsa(ni)-**; Iqt: **isaa-**
- (19) ***-jaw** negative nominalization; Ar: **-jo** ; Zp: **-jaw**
- (20) ***-ka** ‘number suffix’; Ar: **-ka** ;Zp: **-ka** ;Iqt: **-ka**
- (21) ***kaha-** ‘hair; feather’; Ar: **kaha-**; Zp: **kaha-**; Iqt **kaha-**
- (22) ***kana** ‘1st person, excl. plural’; Ar: **kanaa** ; Zp: **kana** ; Iqt: **kana**
- (23) ***kaw** ‘snake, viper’; Ar: **(so)ko** ; Zp: **kaw** ; Iqt: **ku**
- (24) ***ko** ‘1st person’; Ar: **kwo-** ; Zp: **ko** ; Iqt: **ku**²
- (25) ***kə-** ‘to cut (hair)’; Ar: **ke-te** ; Zp: ----- ; Iqt: **ki-ti** ‘to cut oneself’s hair’
Ar: **ke-ta** ; Zp: **kΛ-ta** ; Iqt: **ki-raa** ‘to cut one’s hair’
- (26) ***maha** ‘raw’; Ar: **mahaa**; Zp: **maha**; Iqt: **mahaa**
- (27) ***mahi** ‘to cook’; Ar: **mahi-**; Zp: **mahi-**; Iqt: -----
- (28) ***makə-** ‘to sleep’; Ar: **make-**; Zp: **makΛ-**; Iqt: **maki-**
- (29) ***mara** ‘guts’; Ar: **mara-** ; Zp: **mara-** ; Iqt: **mara-**
- (30) ***maraw-** ‘to tie’; Ar: **moro-** ; Zp: **maraw-** ; Iqt: **maruu**⁻¹

- (31) ***masi-** ‘to escape, to flee’; Ar: **masi-**; Zp: **masi-**; Iqt: **masi-**
- (32) ***mi-** ‘to do’; Ar: **mii-**; Zp: **mii-**; Iqt: **mii-**
- (33) ***moka** ‘rotten’; Ar: **mokwa** ; Zp: **moka-** ; Iqt: **mukwa**²
- (34) ***na-** ‘3rd person plural’; Ar: **na-** Zp: **na-** Iqt: **na-**
- (35) ***naku-** ‘hill’; Ar: **naku-** ; Zp: ----- ; Iqt: **naki-**
- (36) ***nana-ka** ‘blood’; Ar: **nana-ka** ; Zp: **nana-ka**; Iqt: ----
- (37) ***naw-** 3rd person singular; Ar: **no-** ; Zp: **naw-** ; Iqt: **nu-**
- (38) ***-nu** ‘masculine, singular’; Ar: **-nu** ; Zp: **-no** ; Iqt: **-ni**
- (39) ***-nu** ‘infinitive’; Ar: **-nu** ; Zp: **-no** ; Iqt: **-ni**
- (40) ***pani-** ‘to want/like; love’; Ar: **pani-** : Zp: **pani-**
- (41) ***sapi** Ar: **sapi (tiah)** “fish” : Zp: **sapi** : Iqt: **saapi (taaha)** “stingray” (sp.)³
- (42) ***sani-** ‘to taste (food)’; Ar: **sani-**; Zp: **sani-**
- (43) ***sukana** ‘lice’; Ar: **sukwana** Zp: **sokana** Iqt: **sikwana**²
- (44) ***səsa** ‘bad’; Ar: **sesa** ; Zp: ---- ; Iqt: **sis**
- (45) ***tamə-** ‘to lick’; Ar: **tamwe-**; Zp: **tamΛ-** ; Iqt: **tamii-**
- (46) ***tawə-**; Ar: **tawe-** “foreigner, stranger” ; Zp: **tawΛ-** “to hate” ; Iqt: -----³
- (47) ***tawhi-** ‘to listen’; Ar: **tohi-** ; Zp: **tawhi-** ; Iqt: **tuuhi-**
- (48) ***-tu** ‘feminine, singular’; Ar: **-tu** ; Zp: **-to** ; Iqt: **-ti**
- (49) ***-tə** ‘causative suffix’; Ar: **-te** ; Zp: **-tΛ** ; Iqt: **-ti**
- (50) ***tə-** ‘where’; Ar: **tee-** ; Zp: ----- ; Iqt: **tii-**
- (51) ***tsami-** ‘to rest; to be new’; Ar: **sami-**; Zp: **tsami-**; Iqt: **saami-**
- (52) ***umaru** ‘rain’; Ar: **maru** ; Zp: **umaru** ; Iqt: -----

1. The Arabela item in this putative etymology seems to require regressive labial harmony to explain the vowel of the first syllable. This vowel was reconstructed based on the concordance of the Záparo and Iquito reflexes.
2. The status of such labialized stops is unclear and, as remarked in section 2.1, labialization is outside the scope of this preliminary work. With this limitation in mind, we reconstruct ***k** with **kw** as its reflex in Arabela and Iquito.
3. For these putative etymologies we had no grounds to decide which meaning to assign to the reconstructed proto-form.

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