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“Reconstructing the possessive inflection
of Proto-Zamucoan”

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Reconstructing the possessive inflection of Proto-Zamucoan



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Overview

- The Zamucoan family (a brief note)
- Zamucoan possessive inflection
- Reconstruction of Proto-Zamucoan possessive inflection
- Areal contact and morphological borrowing

- **The Zamucoan family (a brief note)**
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The Zamucoan family



Old Zamuco (OZ)
spoken in the XVIII
century, extinct

Ayoreo (AY)
ca. 4500 speakers

Chamacoco (CH)
(tbitoso, Tomarâho)
ca. 1800 speakers

The Zamucoan family

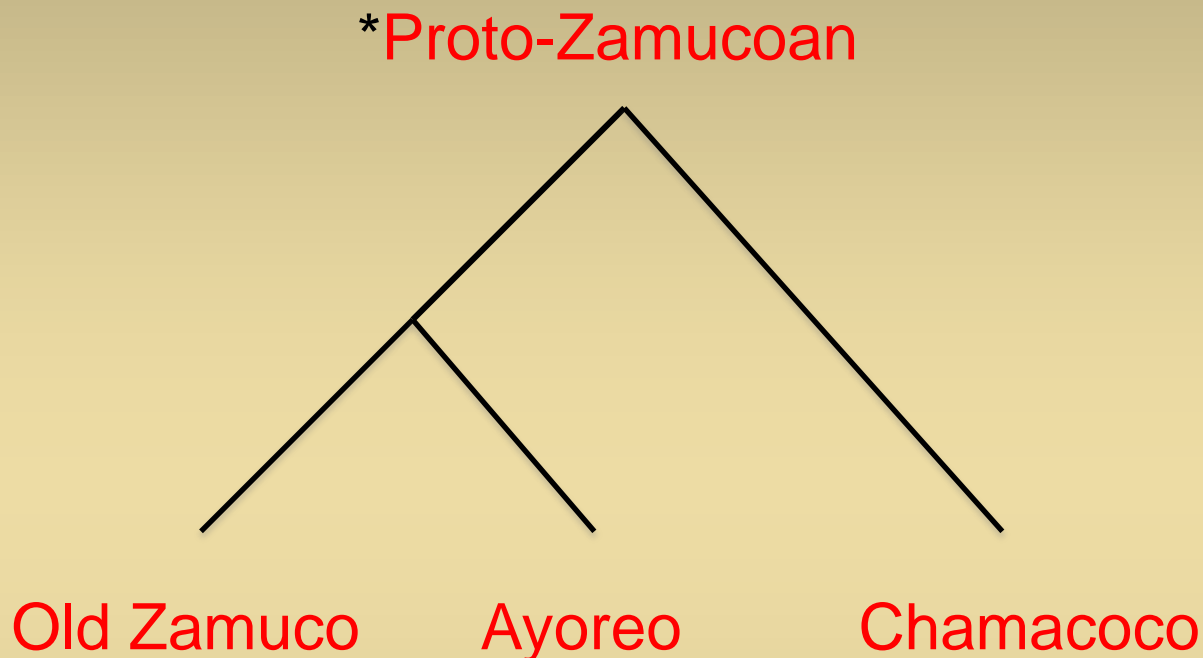
The first stable contact with Zamucoan populations took place in the early 18th century in the reduction of San Ignacio de Samuco.

The Jesuit **Ignace Chomé** wrote a grammar of Old Zamuco (*Arte de la lengua zamuca*).

The **Chamacoco** established friendly relationships by the end of the 19th century.

The **Ayoreo** 'surrendered' at the middle of the last century; there are still a few small nomadic bands in Northern Paraguay.

The Zamucoan family: internal classification



- Old Zamuco and Ayoreo are very close to each other, but share no more than 30% of their lexicon with Chamacoco.
- The split of Chamacoco from Old Zamuco and Ayoreo must have occurred long ago (Holman *et al.* 2011; Müller *et al.* 2013).

The Zamucoan family



Main typological features:

- Fusional structure
- Word order features:
- SVO
- Genitive + Noun
- Noun + Adjective

The Zamucoan family



Chamacoco, my fieldwork



Ayoreo, Pier Marco Bertinetto's fieldwork

Research goals at Scuola Normale Superiore:

- Description of Zamucoan inflectional morphology (Ciucci 2013)
- Descriptive grammar of Ayoreo
- Descriptive grammar of Ancient Zamuco (based on Chomé's data)
- Descriptive grammar of Chamacoco (Ibitoso)
- Reconstruction of [Proto-Zamucoan morphology](#)

- The Zamucoan family (a brief note)
- **Zamucoan possessive inflection**
- Reconstruction of Proto-Zamucoan possessive inflection
- Areal contact and morphological borrowing

Possessive inflection: 3- vs. RFL-person

- In all Chaco languages, including the Zamucoan ones (Fabre 2007), nouns can be **possessable** or **non-possessable**.
- With **possessable nouns**, the morphology of possession is usually expressed by **prefixes** (or, with the CH plural persons, by **free pronouns**):
- All Zamucoan languages distinguish between:
 - **3-person** (= non coreferent with the subject)
 - **reflexive 3-person** (= coreferent with the subject; henceforth **RFL**)

CH: p-a-lokot (**1S**), Ø-a-lokot (**2S**), Ø-a-lokot (**3**), d-a-lokot (**RFL**),
ejok Ø-a-lokot (**1Pinc**), òrjok Ø-a-lokot (**1Pexc**),
olak Ø-a-lokot (**2P**) 'nickname'

Possessive inflection: Generic Form (GF)

- Possessable nouns may present an additional form indicating **unspecified possessor**, here called **Generic Form** (henceforth **GF**). This feature characterizes most Chaco languages and has been proposed as a possible areal trait (Campbell & Grondona 2012: 646).

Ayoreo: **j**-i-go (1S), **b**-a-go (2S), **∅**-i-go (3), **d**-a-go (RFL),
jok-i-go (1P), **wak**-a-go (2P), **∅**-∅-ko (**GF**) 'jar'

Old Zamuco: **j**-i-geda (1S), **a**-i-geda (2S), **∅**-i-geda (3),
da-i-geda (RFL), **aj**-i-geda (1/2P), **g**-i-geda (**GF**)
'house'

Possessive inflection: Structure

- Depending on **3-person morphology**, one can distinguish between:

PREFIX + **THEMATIC VOWEL** + **ROOT**
|-----|
THEME

- (a) **PREFIXAL** nouns: prefix plus theme
CH *l-a-tahatca* ‘stepmother’
- (b) **THEMATIC** nouns: theme
CH *∅-e-tcit* ‘domestic animal’
- (c) **RADICAL** nouns: pure root
CH *∅-∅-nerpta* ‘shirt’

Possessive inflection: inflectional vowel

- In the **2-** and in the **RFL-person**, **high thematic vowels** are replaced by a **vowel originally belonging to the prefix**, i.e. /**a**/ or /**e**/:

AY j-**i**-go (1S), b-**a**-go (2S), Ø-**i**-go (3), d-**a**-go (RFL),
jok-**i**-go (1P), wak-**a**-go (2P), Ø-Ø-ko (GF) 'jar'

CH p-**i**-tilta (1S), Ø-**e**-tilta (2S), Ø-**i**-tilta (3), d-**e**-tilta (RFL)
'stick'

- Occasionally, the original **high thematic vowel** is not replaced by /**a**/ or /**e**/:

OZ j-**i**-geda (1S), **a**-**i**-geda (2S), Ø-**i**-geda (3),
da-**i**-geda (RFL), aj-**i**-geda (1/2P), g-**i**-geda (GF) 'house'

- The Zamucoan family (a brief note)
- The Zamucoan possessive inflection
- **The reconstruction of Proto-Zamucoan possessive inflection**
- Areal contact and morphological borrowing

	Old Zamuco	Ayoreo	Chamacoco	Proto-Zamucoan
1S	j-V-root tɕ-/s-V-root	j-V-root	p-V-root	*j-V-root
2S	∅-a/V-root	b-a/V-root	∅-a/e/V-root	*a-V-root
3	∅-V-root ∅-∅-root d-V-root g-V-root	∅-V-root ∅-∅-root d-V-root g-V-root k-V-root p-V-root j-V-root	∅-V-root ∅-∅-root d-V-root w-V-root k-V-root j-V-root	*∅-V-root *∅-∅-root *d-V-root *g-V-root
RFL	d-a/V-root	d-a/V-root	d-a/e/V-root	*da-V-root
1P	aj-V-root as-V-root	jok-V-root	–	*aj-V-root *as-V-root [rare]
2P	aj-V-root as-V-root	wak-a/V-root	–	?
GF	p-V-root d-V-root ∅-∅-root	p-V-root dVk-V-root g-V-root k-V-root ∅-∅-root	dVk-V-root d-V-root k-V-root ∅-∅-root o-[3-person]	*p-V-root *dVk-V-root *k-V-root *d-V-root *∅-∅-root

First-person singular

	Old Zamuco	Ayoreo (AY)	Chamacoco (CH)	Proto-Zamucoan
1S	j -V-root tɕ-/s-V-root	j -V-root	p -V-root	* j -V-root
GF	p -V-root d-V-root ∅-∅-root	p -V-root dVk-V-root g-V-root k-V-root ∅-∅-root	dVk-V-root d-V-root k-V-root ∅-∅-root o-[3-person]	* p -V-root *dVk-V-root *k-V-root *d-V-root *∅-∅-root

- Loss of **1S j**- in **CH**. However, **j**- is found in some **CH** relics:

CH jošĩrsĩrtɕ (non-possessable) ‘merciful person’

AY j-o-sõrasõri (1S), ∅-o-sõrasõri (3) ‘merciful person’

CH j-o-te (1S) ‘mother’ (Johann Natterer, first half of the 19th century)

→ Colonization of the **CH 1S** by the **GF** (prefix **p**-)

Second-person singular

	Old Zamuco (OZ)	Ayoreo (AY)	Chamacoco (CH)	Proto-Zamucoan (PZ)
2S	∅-a/V-root	b-a/V-root	∅-a/e/V-root	*a-V-root
RFL	d-a/V-root	d-a/V-root	d-a/e/V-root	*da-V-root

- All Zamucoan languages show the vowel /a/ in the **2S-** and in the **RFL-**person; originally a prefix, it is now part of the theme.
- In many cases, **OZ/AY** /a/ > **CH** /e/.
- The **OZ** and **CH 2S-**person are **prefixless**. The **AY 2S-**prefix **b-** is an innovation, possibly deriving from the labial feature of the 2S-pronoun **wa** < **PZ** * **wa**

Third person

	Old Zamuco (OZ)	Ayoreo (AY)	Chamacoco (CH)	Proto-Zamucoan (PZ)
3	∅-V-root ∅-∅-root d-V-root g-V-root	∅-V-root ∅-∅-root d-V-root g-V-root k-V-root p-V-root j-V-root	∅-V-root ∅-∅-root d-V-root j-V-root w-V-root k-V-root	*∅-V-root *∅-∅-root *d-V-root *g-V-root
RFL	d-a/V-root	d-a/V-root	d-a/e/V-root	*da-V-root

- All languages show the same inflectional classes:
 - thematic** nouns: ∅-V-root → CH ∅-e-*tcit* ‘domestic animal’
 - radical** nouns: ∅-∅-root → CH ∅-∅-*nerpta* ‘shirt’
 - prefixal** nouns: C-V-root → CH *l-a-tahatca* ‘stepmother’
- The **3**-prefix **d-** is found in all languages (besides being the most common **RFL**-person marker).

Third person: Marginal allomorphs

	Old Zamuco (OZ)	Ayoreo (AY)	Chamacoco (CH)	Proto-Zamucoan (PZ)
3	∅-V-root	∅-V-root	∅-V-root	*∅-V-root
	∅-∅-root	∅-∅-root	∅-∅-root	*∅-∅-root
	d-V-root	d-V-root	d-V-root	*d-V-root
	g-V-root	g-V-root	j-V-root	*g-V-root
		k-V-root	w-V-root	
		p-V-root	k-V-root	
		j-V-root		

- **CH** does not have the phoneme /g/. Regular correspondence **OZ/AY** /g/ ~ **CH** /j/ or ∅:

AY g-a-nesõri (3) ~ **CH** j-i-nsĩrtɛ (3) ‘owner, master’

AY g-a-tɛit (3) ~ **CH** ∅-e-tɛit (3) ‘pet, domesticated animal’

- **AY** k- and j- and **CH** k- and w- are rare allomorphs.
- **AY** p- stems from the most frequent **GF** allomorph

First and second person plural 1

	Old Zamuco (OZ)	Ayoreo (AY)	Chamacoco (CH)	Proto-Zamucoan (PZ)
1P	aj -V-root as -V-root	jok -V-root	–	* aj -V-root * as -V-root [rare]
2P	aj -V-root as -V-root	wak -a/V- root	–	?

- In **OZ**, **1P** and **2P** coincided
- **CH** has lost the **1P/2P** inflection (free pronouns are used instead); **AY** created new person prefixes out of the free pronouns **jok** (**1P**) and **wak** (**2P**)
- It is not possible to reconstruct the **2P**-person of **PZ**

1P- and 2P-person: Historical data

	Old Zamuco (OZ)	Ayoreo (AY)	Chamacoco (CH)	Proto-Zamucoan (PZ)
1P	aj -V-root as -V-root	jok -V-root	–	* aj -V-root * as -V-root [rare]
2P	aj -V-root as -V-root	wak -a/V- root	–	?

- Some **CH** relics documented in the first half of the 20th century indicate that **CH** displayed the 1P- prefixes **as-/aj-**

CH as-ut (1P) ‘mother’ (Baldus 1932: 393)

OZ as-ote (1P) ‘mother’

CH aj-r-u-ṃe (1P) ‘hands’ (Baldus 1932: 392)

Reflexive person

	Old Zamuco (OZ)	Ayoreo (AY)	Chamacoco (CH)	Proto-Zamucoan (PZ)
RFL	d -a/V-root	d -a/V-root	d -a/e/V-root	* da -V-root
2S	∅- a /V-root	b- a /V-root	∅- a /e/V-root	* a -V-root

- The **RFL**-prefix **d**- is documented in all Zamucoan languages
- **d**- is preceded by the same **vowel** found in the **2S**-person (as already mentioned, part of the original prefix: ***a**- for **2S** and ***da**- for **RFL**-person)

The generic form

	Old Zamuco (OZ)	Ayoreo (AY)	Chamacoco (CH)	Proto-Zamucoan (PZ)
GF	<p>p-V-root</p> <p>d-V-root</p> <p>∅-∅-root</p>	<p>p-V-root</p> <p>dVk-V-root</p> <p>g-V-root</p> <p>k-V-root</p> <p>∅-∅-root</p>	<p>dVk-V-root</p> <p>d-V-root</p> <p>k-V-root</p> <p>∅-∅-root</p> <p>o-[3-person]</p>	<p>*p-V-root</p> <p>*dVk-V-root</p> <p>*k-V-root</p> <p>*d-V-root</p> <p>*∅-∅-root</p>
1S			p -V-root	

- In **OZ** and **AY** the most frequent **GF**-prefix is **p**-, reinterpreted as **1S**-prefix in **CH**
- **o**- is a **CH** innovation to compensate the pervasive loss of **GF**-inflection
- All Zamucoan languages have the ‘radical’ **GF** allomorph (**∅-∅**-root)

GF: Intra-family correspondences

	Old Zamuco (OZ)	Ayoreo (AY)	Chamacoco (CH)	Proto-Zamucoan (PZ)
GF	<p>p-V-root</p> <p>d-V-root</p> <p>∅-∅-root</p>	<p>p-V-root</p> <p>dVk-V-root</p> <p>g-V-root</p> <p>k-V-root</p> <p>∅-∅-root</p>	<p>dVk-V-root</p> <p>d-V-root</p> <p>k-V-root</p> <p>∅-∅-root</p> <p>o-[3-person]</p>	<p>*p-V-root</p> <p>*dVk-V-root</p> <p>*k-V-root</p> <p>*d-V-root</p> <p>*∅-∅-root</p>
1S			p -V-root	

- **dVk-** and **k-** are found in both **AY** and **CH**, and can thus be reconstructed for Proto-Zamucoan (although they are not documented in **OZ**)
- Similarly, **d-** can be traced back to Proto-Zamucoan, for it is observed in **OZ** and **CH** (although absent in **AY**)

GF and 3-person interferences

	OZ		AY		CH	
	3-person	GF	3-person	GF	3-person	GF
p-		+	+	+		
dVk-				+		+
d-	+	+	+		+	+
g-	+	+	+	+		
k-			+	+	+	+
j-			+		+	
w-					+	
bare root	+	+	+	+	+	+
o- (pre-prefix)						+
thematic form	+		+		+	

- Since **3-** and **GF**-prefixes often coincide, an interaction may have occurred...
- It is however difficult to determine the direction of the change (except for the **AY 3-** prefix **p-**)

- The Zamucoan family (a brief note)
- The Zamucoan possessive inflection
- The reconstruction of Proto-Zamucoan possessive inflection
- **Areal contact and morphological borrowing**

Areal contact in possessive inflection 1

- Zamucoan languages present no genetic relationship with other linguistic families. Yet, according to Comrie *et al.* (2010), the Chaco constitutes a **linguistic area** (but see Campbell & Grondona 2012b).
- **Some areal features:**
 - possessable vs non-possessable (Fabre 2007)
 - possessive affixes
 - possessive classifiers (Fabre 2007, Campbell & Grondona 2012)
 - elaborate deictic systems
 - para-hypotaxis (Bertinetto & Ciucci 2012)
- **Ciucci (2014) identified a number of morphological borrowings in the Zamucoan family...**

Chaco languages

Family	Languages
Chiquitano	Chiquitano (Bésiro)
Enlhet- Enenlhet	Angaité, Enlhet, Enenlhet-toba, Enxet, Guaná, Sanapaná
Guaykuruan	†Abipón, Kadiwéu, †Mbayá, Mocoví, Pilagá, Toba
Lule-Vilela	Lule, Vilela
Mataguayan	Chorote, Maká, Nivaklé, Wichí
Tupí- Guaranían	Ava-Guaraní (Chiriguano), Tapiete
Zamucoan	†Old Zamuco, Ayoreo, Chamacoco

Areal contact in possessive inflection 2

Proto-Zamucoan

1S	*j-V-root
2S	*a-V-root
3	*∅-V-root
	*∅-∅-root
	*d-V-root
	*g-V-root
RFL	*da-V-root

1S: GUAYCURUAN: Abipón *i-*, Kadiwéu *j-*, *ej-*, *i-*, Mocoví *j-*, *i-*, Pilagá *j-*, *ji-*, Toba *j(V)-*, *aj-*, *i-*. **MATAGUAYAN** Chorote *i-*, *j-*, Maká *ji-*, *j-*, *i-*, Nivaclé *i-*, *ji-*, Wichí (Weenhayek dialect) *j-*, *ja-*, *-ʔi* (Viegas Barros 2013b: 314, ex. 96).

2S: MATAGUAYAN Chorote *a-* (-C) / ∅- (-V) (2S), Maká *V-* / ∅-, Nivaclé *a-* / ∅-, Wichí *a-* (Ciucci 2014: 20-21).

3: GUAYCURUAN Abipón *l-*, Kadiwéu *l:(i)-*, *el:(i)-*, *al-*, Mocoví *l-*, *al-*, Pilagá *l-*, *hal-*, Toba *l-*, *al-*. **MATAGUAYAN** Chorote *t-*, *xi-*, Maká *t(V)-*, Nivaclé *t-*, *ta-*, Wichí *le-* (Viegas Barros 2013b: 315), Wichí (Bermejo) *la-* (Comrie *et al.* 2010).

*/l/ is absent in OZ and AY, and in free variation with /d/ in CH

Eruej ute

End this
(Ayoreo)



Shi ele no ma

Only this no more
(Chamacoco)

References

- Bertinetto, Pier Marco 2009. Ayoreo (Zamuco). A grammatical sketch. *Quaderni del Laboratorio di Linguistica della Scuola Normale Superiore* 8 n.s.
- Bertinetto, Pier Marco & Luca Ciucci 2012. Parataxis, Hypotaxis and Parahypotaxis in the Zamucoan Languages. *Linguistic Discovery* 10.1. 89-111.
- Campbell, Lyle & Verónica Grondona 2012a. Languages of the Chaco and Southern Cone. In: Campbell & Grondona (eds.). *The Indigenous Languages of South America. A Comprehensive Guide*. Berlin: De Gruyter Mouton. 625-668.
- Campbell, Lyle & Verónica Grondona 2012b. Linguistic acculturation in Nivaclé (Chulupí) and Chorote. *International Journal of American Linguistics* 78. 335-67.
- Chomé, Ignace 1958 [ante 1745]. Arte de la lengua Zamuca. Présentation de Suzanne Lussagnet. *Journal de la Société des Américanistes de Paris* 47. 121-178.
- Ciucci, Luca 2013. *Inflectional morphology in the Zamucoan languages*. Pisa: Scuola Normale Superiore di Pisa. Ph.D. thesis.

References

- Ciucci, Luca 2014. Tracce di contatto tra la famiglia zamuco (ayoreo, chamacoco) e altre lingue del Chaco: prime prospezioni. *Quaderni del Laboratorio di Linguistica della Scuola Normale Superiore di Pisa* 13 n.s.
- Ciucci, Luca & Pier Marco Bertinetto (to appear). A diachronic view of the Zamucoan verb inflection. *Folia Linguistica Historica*.
- Ciucci, Luca & Pier Marco Bertinetto (submitted). *The possessive inflection in the Zamucoan family: reconstruction and language contact*.
- Ciucci, Luca & Pier Marco Bertinetto (in preparation). *For the reconstruction of Proto-Zamucoan nominal suffixation*.
- Comrie, Bernard, Lucía A. Golluscio, Hebe González & Alejandra Vidal 2010. El Chaco como área lingüística. In: Zarina Estrada Fernández & Ramón Arzápalo Marín (eds.). *Estudios de lenguas amerindias 2: contribuciones al estudio de las lenguas originarias de América*. Hermosillo, Sonora (Mexico): Editorial Unison.
- Fabre, Alain 2007. Morfosintaxis de los clasificadores posesivos en las lenguas del Gran Chaco (Argentina, Bolivia y Paraguay). *UniverSOS* 4. 67-85.

References

- Holman, Eric W., Cecil H. Brown, Søren Wichmann, André Müller, Viveka Velupillai, Harald Hammarström, Hagen Jung, Dik Bakker, Pamela Brown, Oleg Belyaev, Matthias Urban, Robert Mailhammer, Johann-Mattis List & Dmitry Egorov 2011. Automated dating of the world's language families based on lexical similarity. *Current Anthropology* 52,6. 841-875.
- Higham, Alice, Maxine Morarie & Greta Paul 2000. *Ayoré-English dictionary*. Sanford, FL.: New Tribes Mission. 3 vols.
- Müller, André, Søren Wichmann, Viveka Velupillai, Cecil H. Brown, Pamela Brown, Sebastian Sauppe, Eric W. Holman, Dik Bakker, Johann-Mattis List, Dmitri Egorov, Oleg Belyaev, Robert Mailhammer, Matthias Urban, Helen Geyer & Anthony Grant. 2010. *ASJP World Language Tree of Lexical Similarity*. Version 3 (July 2010).
At: http://email.eva.mpg.de/~wichmann/language_tree.htm
- Viegas Barros, Pedro 2013a. Proto-Guaicurú. *Una reconstrucción fonológica, léxica y morfológica*. Muenchen: Lincom Europa.
- Viegas Barros, Pedro 2013b. La hipótesis de parentesco Guaicurú-Mataguayo: estado actual de la cuestión. *Revista Brasileira de Linguística Antropológica* 5 (2). 293-333.