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Possessive inflection in Proto-Zamucoan: a reconstruction[#]

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The present paper presents a comparative analysis of possessive inflection in the three known Zamucoan languages: Ayoreo and Chamacoco – still spoken in the Chaco area between Bolivia and Paraguay – plus †Old Zamuco, described by the Jesuit father Ignace Chomé in the first half of the 18th century. The comparison allows us to build a plausible reconstruction of Proto-Zamucoan possessive inflection. Old Zamuco appears to be the most conservative language among the three, while Chamacoco turns out as the most innovative, although it exhibits relics of special importance for reconstructive purposes. Our analysis identifies in Zamucoan a series of features of general interest for the typology of person marking.

Keywords: person marking; diachronic reconstruction; possessive morphology; verb morphology; Amerindian languages; Zamucoan languages; kinship terms; syncretism in person/number marking

1. Introduction¹

The present paper proposes a reconstruction of the possessive morphology of Zamucoan, an underdescribed language family spoken in the Chaco, between Bolivia and Paraguay. The family consists of three documented languages: Ayoreo, Chamacoco, and †Old Zamuco, a variety described in the first half of the 18th century. The present study concentrates on the possessive inflection of nouns and its intertwining with the person inflection of verbs. , on which we shall only provide the strictly needed data (but see Ciucci & Bertinetto 2015). The analysis confirms the internal coherence of Zamucoan, justifying a plausible reconstruction of the Proto-Zamucoan possessive inflection. Our work thus shows the limits and possibilities of historical reconstruction of a small language family, with one language having an earlier documentation than the others.

The structure of the paper is as follows. After introducing Zamucoan and indicating the sources used (§1.1), section 1.2 provides an overview of the structure of Zamucoan possessive inflection and of the morphological relation between verbs and nouns, while introducing a number of terminological and notational conventions. The following sections describe the possessive morphology of Old Zamuco (§2), Ayoreo (§3) and Chamacoco (§4). Section 5 compares the three languages, while Section 6 proposes a reconstruction of Proto-Zamucoan possessive inflection. Section 7 concludes, highlighting aspects relevant for the typology of person marking and new perspectives for the study of language contact in the Chaco.

1.1 Zamucoan

The Zamucoan family consists nowadays of two living languages spoken in Northern Chaco: Ayoreo (AY) and Chamacoco (CH). The term *Ayoreo* is based on *ajore* (F.SG), *ajorej* (M.SG) “real person (as opposed to outsiders)”, semantically corresponding to the Chamacoco endonym *icir(o)* (M.PL; *icirte* M.SG, *icirra* F.SG).

The Ayoreo people (about 4,500 according to Fabre 2007a) traditionally lived a nomadic life in what is today the Santa Cruz Department of Bolivia and in the Alto Paraguay and Boquerón Departments of Paraguay. Although some uncontacted Ayoreo groups still live their traditional nomadic life in the Paraguayan Chaco, most of them now live in rural settlements, excepting the community in Santa Cruz de la Sierra (Bolivia).

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¹ The current paper is largely based on the comparative analysis of Ciucci (2016) [2013]. The authors share responsibility for any claim made. The AY and CH examples are offered in phonemic transcription (with no delimiting slashes) for ease of reading. The transcriptions of OZ are based on Chomé (1958 [ante 1745]) as reinterpreted according to our knowledge of AY and CH phonology (for a discussion, see Bertinetto (2014) and Ciucci (2016). In the few cases of uncertain interpretation, we added Chomé’s transcription between <> (angled brackets).

The Chamacoco people (approximately 2,000, see Ciucci 2016: 33) mainly live in the Alto Paraguay Department (Paraguay) on the west bank of the Paraguay River, but some live in the suburbs of Asunción and in Brazil (Fabre 2007a). The language includes two dialects: Ebitoso (or Ibitoso) and Tomaraho. The data reported here refer to the Ebitoso dialect.²

The first stable contact with Zamucoan tribes was established by Jesuit missionaries. In the early 18th century, one Zamucoan language (here called Old Zamuco, henceforth **OZ**) was described by the Jesuit father Ignace Chomé (Chomé 1958 [*ante* 1745]). OZ is lexically close to Ayoreo, although not a direct ancestor of the latter, but rather a related extinct dialect (Ciucci 2016). The Chamacoco already had peaceful relationships with Hispano-American culture at the turn of the 19th century, when they were first studied by the Italian explorer and artist Guido Boggiani (Boggiani 1894). By contrast, the Ayoreo only began to surrender at the end of the 1940s.³

Although AY and CH share no more than 30% of their lexicon, they show noteworthy morphological similarities suggesting that, together with OZ, they stem from a common ancestor, Proto-Zamucoan (Bertinetto 2012, Ciucci 2016). Glottochronological studies indicate that the split of CH from OZ and AY (lexically close to each other) occurred in the distant past (Wichmann et al. 2016). The two major branches of the family – disregarding other extinct languages of which very little is known – are shown in Figure 1.

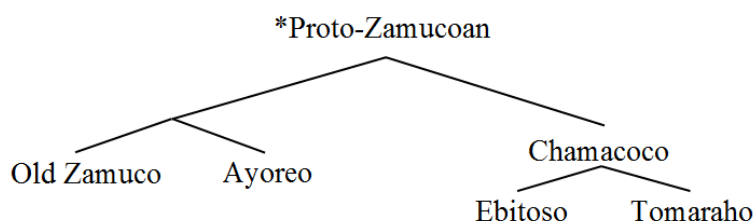


Figure 1. Internal classification of Zamucoan

The fusional Zamucoan languages show traces of contact with the surrounding agglutinating languages (Ciucci 2014), although they differ structurally and genealogically. Biological studies confirm the common origin of the Zamucoan populations, as well as their genetic distance from any other Native American population analyzed (see quotations in Ciucci 2016: 39-40).

The current study is part of a documentation project aiming at producing comprehensive grammars of AY, CH and OZ. The Zamucoan inflectional morphology has been analyzed in detail by Ciucci (2010a,b; 2016). Two companion papers address verb inflection (Ciucci & Bertinetto 2015) and nominal suffixation (in preparation). Ciucci (2013, 2016) provides a survey of the linguistic works on Zamucoan. Besides the authors' fieldwork (2008-2014), the input of this study mainly stems from Higham *et. al.* (2000) and Chomé (1958). Other bibliographical sources used were Kelm (1964), Morarie (1980), Ulrich & Ulrich (2000), and Bertinetto (2014) [2009]. See also Fabre (2007a) for a linguistic and anthropological bibliography on the Zamucoan languages.

1.2 On Zamucoan noun and verb affixation

The present section describes the general morphological structure of Zamucoan nouns and introduces the conventions used throughout the paper.

According to Fabre (2007b), all Chaco languages distinguish possessable vs. non-possessable nouns (not to be confused with alienable vs. non-alienable). The former have prefixes expressing agreement with their possessor or their genitival modifier. In order to refer to the possessor of non-possessable nouns, Chaco

² According to Tracey Carro Noya (pers. comm.), who investigated Tomaraho, the inflectional morphology of the two dialects is very similar.

³ For the history of the Zamucoan people, see Combès (2009).

languages mostly make use of possessive classifiers (Fabre 2007b)⁴. Particularly AY makes a pervasive usage of them: e.g., *j-a-teidi tamoko* (1-THEMATIC_VOWEL-PET_CLASSIFIER dog) “my dog”. However, since Zamucoan classifiers have the same inflectional prefixes as any noun, no further mention is made of them in this paper.

The discrimination between possessable and non-possessable nouns varies from language to language. In Zamucoan, animal and plant nouns are generally non-possessable,⁵ while body parts and kinship terms, and most tools, physical objects, and even abstract nouns (such as “life”) are possessable. For the remaining nouns, there are neither semantic nor morphological rules to explain their possessability status.⁶

The structure of the Zamucoan possessive inflection can be analyzed as in (1):

- (1) PREFIX + THEMATIC VOWEL + ROOT
└──────────────────────────────────┘
THEME

ROOT plus thematic vowel form the THEME. The THEMATIC VOWEL can be any vowel (disregarding quantity and nasality), namely /i e a o u/, to which CH adds /i/. Based on the 3rd-person, the following tripartition arises, depending on how many structural slots are filled:

- (2) (a) PREFIXAL nouns: prefix plus theme (e.g. CH *l-a-tahatea* “her/his/their stepmother”)
 (b) THEMATIC nouns: theme (e.g. CH *Ø-e-teit* “her/his/their domestic animal”)
 (c) RADICAL nouns: pure root (e.g. CH *Ø-Ø-nerpta* “her/his/their shirt”).

The above classification only applies to the 3rd-person: the remaining persons generally fill all structural positions (i.e., they have prefix and thematic vowel). Whenever a noun is cited, the prefix, the thematic vowel and the root are indicated in the segmentation, with Ø marking the possible absence of the first two components, as in (2b-c). The identical tripartition (prefixal, thematic, radical) concerns the verb’s 3.RLS⁷ and is equally used for classificatory purposes (Ciucci & Bertinetto 2015). Further similarities between noun and verb morphology are pointed out below (§2.1, §3.1, §4.1 and §6.7). However, while the vast majority of Zamucoan nouns are thematic, most verbs are prefixal. The inflectional classes do not follow any semantic criteria in either nouns or verbs, with the partial exception of a subgroup of prefixal nouns (the so-called *d*-nouns, see below), mostly consisting of kinship terms.

The noun morphology of Zamucoan, unlike the other Chaco families, characteristically distinguishes a plain 3rd-person and a REFLEXIVE 3rd-person (i.e., 3rd-person coreferent with the subject; henceforth REFL). Neither the 3rd-person nor the REFL distinguish between singular and plural. While the REFL is characterized by relatively high morphological predictability, the 3rd-person may show subregularities or irregularities. Precisely because the 3rd-person (just like the 3(RLS) in verb inflection) is the least predictable of the whole paradigm, it is used as the citation form from which all the remaining forms may to a large extent be generated. For simplicity, whenever a noun or a verb is reported as a citation form, we avoid adding reference the 3rd-person (thus, “house” should be implicitly understood as “her/his/their house”). All

⁴ Fabre (2007b) does not quote †Lule, which (like Vilela) is an exception since it lacked the possessable ~ non-possessable distinction and expressed the possessor by means of suffixes (Zamponi, pers. comm.).

⁵ In Chaco cultures, animals are considered non-possessable entities (Comrie et al. 2010: 113).

⁶ Actually, in CH there is an etymological criterion to the effect that Spanish loans are almost always non-possessable; this however is due to loss of productivity of the possessive inflection (§4.1).

⁷ The Zamucoan verb system displays the ‘realis / irrealis’ contrast (RLS / IRLS). However, as shown in Tables 2, 4 and 6, the three languages differ: OZ exhibits a systematic contrast in all persons, AY only in 1st- and 2nd-persons, CH only in the 3rd-person. As a consequence, the labels RLS/IRLS apply vacuously when referring to the AY 3rd-person and to the CH 1st- and 2nd-persons.

exceptions to the (largely regular) Zamucoan possessive inflection are described in Ciucci (2016); the current paper only lists data relevant to linguistic reconstruction.

Another salient cross-Zamucoan feature is that the 2SG and the REFL normally share the same theme (in AY this also extends to the 2PL). In these persons the thematic vowel slot may be filled by a vowel (/a/ or /e/, depending on the language) diachronically belonging to the prefix and synchronically replacing the original thematic vowel whenever the latter is [+high] (3a). As far as the 2SG/PL is concerned, this also applies to verbs (3b). This diachronic process of vowel replacement is indirectly proved by a few exceptions, whereby a thematic [+high] vowel is preserved after prefixal /a/ in both possessive and verb inflection (3c-d).⁸ However, systematic replacement of the thematic vowel produced, in due course, the reinterpretation of the replacing vowel as part of the theme of 2SG(/PL) and REFL, alongside the [+high] vowel to be found in the rest of the paradigm. By contrast, with non-high thematic vowels the reverse process applied, namely deletion of prefixal /a/, with no alternation in the theme (3e-f).⁹ Thus, at some point, /a/ must have ceased to be perceived as part of the prefix, to become the marker of 2SG(/PL) and REFL in words with [+high] thematic vowel:

- (3) a. AY *j-i-bioj* (1SG), *b-a-bioj* (2SG), *Ø-i-bioj* (3), *d-a-bioj* (REFL),
jok-i-bioj (1PL), *wak-a-bioj* (2PL) “light, lamp”
 b. AY *j-i-go* (1SG), *b-a-go* (2SG), *ɬ-i-go* (3),
j-i-go-go (1PL), *wak-a-go-jo* (2PL) “to tell, to show”
 c. OZ *j-i-geda* (1SG), *a-i-geda* (2SG), *Ø-i-geda* (3), *da-i-geda* (REFL),
aj-i-geda (1/2PL), *g-i-geda* (GF) “house”
 d. OZ *a-i-se* (1SG.RLS), *da-i-se* (2SG.RLS), *ɬ-i-se* (3.RLS),
a-i-ko (1PL.RLS), *da-i-so* (2PL.RLS) “to reach”¹⁰
 e. OZ *ɬ-o-irak* (1SG), *Ø-o-irak* (2SG), *Ø-o-irak* (3), *p-o-irak* (GF) “what is added”
 f. OZ *j-e-do* (1SG), *Ø-e-do* (2SG), *Ø-e-do* (3), *p-e-do* (GF) “eye”

Whenever we have reasons for not specifically referring to the thematic vowel proper, we shall use the term INFLECTIONAL VOWEL for any vowel occupying the thematic vowel slot. Similarly, we shall refer, when relevant, to 1SG-vowel, 2SG-vowel, 3rd-vowel and so on. This is useful not only for the just described vowel replacement process, but also for irregular words in which the inflectional vowel changes from person to person (see, e.g., §5.2). We shall use the label VOCALIC PATTERN to refer to the behavior of the inflectional vowel in the whole paradigm of a given noun.

Many possessable nouns present an additional form indicating an unspecified possessor, here called GENERIC FORM (GF). The GF is morphologically idiosyncratic and not all nouns have it (e.g., kinship terms). In the examples reported, it is only indicated when relevant, provided we have evidence about it. When the GF is missing, the 3rd-person can be used to express an unspecified possessor. The use of an unspecified possessor marker for possessable nouns has been proposed as an areal trait for the Chaco languages (Campbell & Grondona 2012: 646).¹¹

Besides sharing their basic structure, verbs and nouns may also share, depending on the Zamucoan language considered, part of their person inflections, as illustrated in §2.1, §3.1, §4.1. In addition, OZ and

⁸ Although /e/ is frequently observed as the replacing vowel in CH nouns and verbs, the diachronic reasoning is here restricted to /a/, since the CH widespread change /a/ → /e/ must have occurred at a later time, after the split from the OZ/AY branch of the family.

⁹ As for words with thematic /a/, we hypothesize fusion of two identical vowels (prefixal and thematic /a/), rather than replacement of one of the two by the other.

¹⁰ Chomé did not report the 2.IRLS.

¹¹ Campbell (2012: 297-298) notes that this feature is also present in some Mesoamerican languages, such as Nahuatl. Gianguido Manzelli (personal communication) adds Chiricaua Apache and Navajo. Two anonymous reviewers suggest Algonquian and Arawak.

AY show a derivational mechanism of root convertibility between verbs and nouns, a feature mostly lost in CH. See the so called ‘verbal nouns’ (Bertinetto 2014: 395), with passive meaning, which share the same root as their verbal counterpart (4a) or are derived by means of a suffix (-*k* in 4b):

- (4) a. AY *tɛ-i-mo* (3) ‘to see, to realize’ → \emptyset -*i-mo* (3.M.SG.BF) ‘who/what is seen’
 b. OZ/AY *tɛ-a-ka* (3) ‘to plant’ → \emptyset -*a-ka-k* (3.M.SG.BF) ‘plant, what is planted’

The main structural difference between verbs and nouns is that verb suffixes simply mark person plurality, whereas noun suffixes express in a syncretic manner a range of grammatical functions: gender (masculine, feminine), number (singular, plural) and ‘form’. The last feature is a peculiarity of the Zamucoan languages, where nouns and adjectives can appear in BASE FORM, FULL FORM or INDETERMINATE FORM (as for the last form, see *-rike* in ex. 4c). For practical reasons, and with only a few exceptions, AY and CH nouns are cited in full-form singular (the most frequently used one, which in CH has often replaced the base form), whereas OZ nouns are mostly provided in base form singular, which is the citation form used by Chomé. This might suggest that OZ words are shorter than AY and CH ones, but this impression vanishes as soon as one compares base and full forms of cognate words in the three languages (incidentally, this proves the fusional nature of Zamucoan, owing to combined exponence of gender, number and form):

(5) “young man”		BASE FORM		FULL FORM	
		SINGULAR	PLURAL	SINGULAR	PLURAL
OZ		<i>nakar</i>	<i>naka-jo</i>	<i>nakar-itie</i>	<i>nakar-onoe</i>
AY		<i>ṅakar</i>	<i>ṅaka-jo</i>	<i>ṅakar-i</i>	<i>ṅakar-ode</i>
CH		<i>ṅakirbit-ak</i>	<i>ṅakirbit-o/-e</i>	<i>ṅakirbit-it</i>	<i>ṅakirbit-o/-e</i>

However, owing to scarcity of data, sometimes we shall have to alternate base and full form in different persons of one and the same OZ noun in order to fill gaps in the person paradigm. In such cases, suffixes not belonging to the singular base form are indicated between parenthesis.

2. Old Zamuco possessive inflection

The present section describes the possessive inflection of OZ. The available data, stemming from Chomé, are incomplete; there are just three complete possessive paradigms (3a, 6a and 7a). Subsection §2.1 describes the person prefixes of OZ possessable nouns, as compared with their verbal counterparts. Subsection §2.2 focuses on the generic form (GF).

2.1 Person inflection

The morphology of OZ possessable nouns is reported in Table 1, where V stands for the thematic/inflectional vowel slot. The possessive prefixes can be compared with the verb prefixes and the free pronouns listed in Table 2, where all phonemes shared with the possessive prefixes are in bold. Interestingly, possessor marking overlaps more with verb prefixes (especially in the irrealis mood) than with free pronouns.

1SG	2SG	3	REFL	1PL	2PL	GF
<i>j</i> -V-root <i>tɛ</i> -V-root <i>s</i> -V-root	\emptyset - <i>a</i> /V-root	PREFIXAL NOUNS: <i>d</i> -V-root <i>g</i> -V-root	<i>d</i> - <i>a</i> /V-root	<i>aj</i> -V-root <i>as</i> -V-root	<i>aj</i> -V-root <i>as</i> -V-root	<i>p</i> -V-root <i>d</i> -V-root <i>g</i> -V-root \emptyset - \emptyset -root
		THEMATIC NOUNS: \emptyset -V-root				
		RADICAL NOUNS: \emptyset - \emptyset -root				

Table 1. Old Zamuco possessive inflection.

	Old Zamuco verb inflection		Old Zamuco free pronouns
	REALIS	IRREALIS	
1SG	<i>a</i> -V-ROOT (1SG)	<i>j/te</i> -V-ROOT (1SG)	(<i>u</i>) <i>ju</i>
2SG	<i>d-a</i> /V-ROOT (2SG)	\emptyset - <i>a</i> /V-ROOT (2SG)	(<i>u</i>) <i>wa</i> <(u) <i>gua</i> >
3	<i>te/t/</i> \emptyset -(V)-ROOT (3)	<i>d/</i> \emptyset -(V)-ROOT (3)	[<i>wite</i> < <i>güite</i> > / <i>ude</i> (M)] [<i>wate</i> < <i>guate</i> > / <i>uda</i> (F)] ¹²
1PL	<i>a</i> -V-ROOT-SUFF (1PL)	<i>j/te</i> -V-ROOT-SUFF (1PL)	(<i>u</i>) <i>jok</i>
2PL	<i>d-a</i> /V-ROOT-SUFF (2PL)	\emptyset - <i>a</i> /V-ROOT-SUFF (2PL)	(<i>u</i>) <i>wak</i> <(u) <i>guac</i> >
3PL	–	–	<i>ore</i>

Table 2. Old Zamuco verb inflection and free pronouns (Ciucci & Bertinetto 2015).

The 1SG exhibits three lexically conditioned allomorphs (in decreasing order of frequency): *j-*, *te-* and *s-*. The possessive allomorphs *j-* and *te-* coincide with the verb’s 1.IRLS allomorphs (see fn. 7), where *te-* marks the 1.IRLS of the most regular verb class (characterized by the identical 3.RLS *te-* prefix), while the other verb classes have *j-* as 1.IRLS-prefix (Ciucci & Bertinetto 2015). A transparent relation with verb morphology is also found in deverbal nouns (§1.2), where *te-* is mostly found in nouns derived from the most regular class (6a), while *j-* is typical of nouns derived from the other classes (6b). Thus, the 1SG possessive allomorph of a deverbal noun coincides with the 1.IRLS allomorph of the verb it derives from. The exceptions are a few verbs with the 3rd-prefix *t-*, whose deverbal nouns show the 1SG-prefix *te-* rather than *j-* (6c):¹³

- (6) a. *te-i-mesërak* (1SG), \emptyset -*a-mesërak* (2SG), \emptyset -*i-mesërak* (3),
aj-i-mesërak (1PL/2PL), *p-i-mesërak* (GF) “what is loved”
cf. *te-i-mesëre* (3.RLS/1SG.IRLS) “to love”
b. *j-i-jauk* (1SG), \emptyset -*a-jauk* (2SG), \emptyset -*i-jauk* (3), *p-i-jauk* (GF) “what is left”
cf. \emptyset -*i-jau* (3.RLS) “to quit; to stop”
c. *te-a-gari* (1SG) “what is believed”
cf. *t-a-gari* (3.RLS/IRLS) “to believe”

The 2SG exponent is identical to that of the verb’s 2.IRLS (see Table 2). In both cases, as anticipated in §1.2, the 2nd-vowel /a/ (also found in the verb’s REFL and 2.RLS) originally belonged to the prefix, before being reinterpreted – in the relevant words – as thematic vowel alongside /i u/ in the rest of the paradigm. Since, however, the non-high thematic vowels /e o/ had the reverse effect of deleting prefixal /a/, the consequence was that in thematic nouns with thematic /e o/ the 2SG and the 3rd-person coincide, as shown in (3c-d) above (as for thematic /a/, see fn. 9).

As for the 3rd-person, most OZ nouns are thematic, as typical of Zamucoan. Prefixal nouns exhibit the lexically conditioned allomorphs *d-* (7a) – identical to the 3.IRLS prefix of the most regular verb class (Table 2) – or *g-* (7b). In radical nouns, the first consonant of the root can undergo word-initial fortition, as in (7c) where /b/ turns into /p/ in the radical 3rd-person. The same occurs in verb inflection (ex. 70, §5.5):

- (7) a. \emptyset -*o-te* (1SG), \emptyset -*a-te(tae)* (2SG), *d-a-te* (3),
as-o-te (1PL), *aj-a-te* (2PL) “mother”

¹² In the Zamucoan languages, with the exception of CH *ir(e)* in Table 6, there are no true 3SG free pronouns; all other forms reported in Tables 2, 4 and 6 are demonstratives.

¹³ The word *te-o-rotat* (1SG), *aj-o-rotat* (1PL), *aj-o-rotat* (2PL) “shoulder” is an exception; for all we know, it is not a deverbal noun, yet it shows the *te-* prefix.

- b. *j-a-nek* (1SG), *Ø-a-nek* (2SG), *g-a-nek* (3) “belonging”
- c. *j-i-bidit* (1SG), *Ø-a-bidit* (2SG), *Ø-Ø-pidit* (3) “who/what is called”
(cf. *t-i-bidi* (3.RLS/IRLS) “to call”)

In the plural, one finds the syncretism of 1PL and 2PL, both marked by *aj-* (8a-b).¹⁴ However, if the 1SG-prefix is *s-*, the 1PL- and 2PL-allomorph is *as-* (8c). One might hypothesize that these plural persons are obtained by adding *a-* to the 1SG; however, unless *t-* is an innovation (§6.1), this does not explain why nouns with the 1SG-prefix *t-* have 1PL/2PL *aj-*. “Mother” (7a) is the only exception, with 1PL and 2PL differing from each other (see §5.3, §6.1 and §6.5):

- (8) a. *t-a-kak* (1SG), *Ø-a-kak* (2SG/3), *aj-a-kak* (1PL), *aj-a-kak* (2PL), *p-a-kak* (GF) “what is planted”
- b. *j-i-geda* (1SG), *aj-i-geda* (1PL), *aj-i-geda* (2PL) “house” (for the full-paradigm, see ex. 6c and 10b)
- c. *s-o-ritat* (1SG), *as-o-ritat* (1PL), *as-o-ritat* (2PL) “buckler”

2.2 The generic form

Although just a few examples are provided, Chomé claims that most nouns have a GF, usually obtained by means of one among several lexically determined allomorphs. The most frequent is *p-* (see ex. 9), while *d-* (10a) and *g-* (10b) are rare. The inflectional vowel always coincides with the thematic vowel:

- (9) a. *t-o-it* (1SG), *Ø-o-it* (2SG), *Ø-o-it* (3), *p-o-it* (GF) “who/what is brought”
- b. *j-i-noriga* (1SG), *Ø-a-noriga* (2SG), *Ø-Ø-noriga* (3), *p-i-noriga* (GF) “way”
- c. *j-i-bidit* (1SG), *Ø-a-bidit* (2SG), *Ø-Ø-pidit* (3), *p-i-bidit* (GF) “who/what is called”
- (10) a. *j-u-hos* (1SG), *Ø-a-hos* (2SG), *Ø-u-hos* (3), *d-u-kos* (GF) “disease”
- b. *j-i-geda* (1SG), *a-i-geda* (2SG), *Ø-i-geda* (3), *da-i-geda* (REFL),
aj-i-geda (1/2PL), *g-i-geda* (GF) “house”

The GF occasionally coincides with the root, as in (11a-b). In such cases, one can surmise (also based on data in §3.5) that the theme of the possessive inflection is obtained by adding the high thematic vowels /i u/ to the GF. Note that in (11c-d) root-initial /r/ undergoes fortition into /d/ in the GF. The same occurs in the 3rd-person of AY radical nouns (§3.4 and ex. 74c, §5.6):

- (11) a. OZ *j-i-gios* (1SG), *Ø-a-gios* (2SG), *Ø-i-gios* (3), *Ø-Ø-gios* (GF) “relative”
- b. OZ *j-i-poduo* (1SG), *Ø-a-poduo* (2SG), *Ø-i-poduo* (3), *Ø-Ø-poduo* (GF) “lungs”
- c. OZ *j-i-raogena* (1SG), *Ø-a-raogena* (2SG), *Ø-i-raogena* (3), *Ø-Ø-daogena* (GF) “mortar”
- d. OZ *j-u-rahek* (1SG), *Ø-a-rahek* (2SG), *Ø-u-rahek* (3), *Ø-Ø-dahek* (GF) “path”

3. Ayoreo possessive inflection

This section deals with AY. After introducing the person prefixes (§3.1), the inflectional classes are described: thematic (§3.2), prefixal (§3.3), and radical nouns (§3.4). Subsection §3.5 addresses the morphology of the GF and the productivity of AY possessive inflection.

¹⁴ In a letter to Lorenzo Hervás y Panduro, the Jesuit Joaquín Camaño reports the possessive paradigm of “child”, making a distinction between 1PL-person and 2PL-person: <ayab> (1PL) ~ <adab> (2PL) (Clark 1937: 127-128). Since these are second-hand data provided by other missionaries who had left South America long before, they are not fully reliable. Here <y> stands for /j/ and it is possible that in the 2PL-person <d> stands for [dʒ], which in both AY and CH is a possible realization of /j/. If so, this would indicate that <ayab> and <adab> merely reflect two different pronunciations of the same form.

3.1. Person inflection

Table 3 illustrates the morphology of AY possessive inflection, with a typical example in (12a), and can be used as a recapitulation. In nasal-harmony contexts, the prefixes 1SG *j-*, 2SG *b-* and REFL *d-* can respectively nasalize into *j-*, *m-* and *n-* (12b-c), although this behavior is variably adopted by the speakers.¹⁵ When discussing the issue in general terms, rather than with respect to individual words, only the oral allomorphs are reported. The thematic vowel remains in the whole paradigm, except that in the 2SG/PL and in the REFL high thematic vowels are replaced by /a/ (12a,c), which was originally part of the prefix (§1.2 and §5.1). As far as 2SG and REFL are concerned, this replacement is a Zamucoan shared feature, but in AY it also extends to the 2PL. The 3rd-person is discussed while analyzing the individual inflectional classes; just like the GF – see §3.5 – it exhibits remarkable polymorphy.

1SG	2SG	3	REFL	1PL	2PL	GF
<i>j</i> -V-root	<i>b-a</i> /V-root	PREFIXAL NOUNS: <i>d</i> -V-root, <i>g</i> -V-root, <i>j</i> -V-root, <i>k</i> -V-root, <i>p</i> -V-root	<i>d-a</i> /V-root	<i>jok</i> -V-root	<i>wak-a</i> /V-root	<i>dVk</i> -V-root <i>g</i> -V-root <i>k</i> -V-root <i>p</i> -V-root Ø-Ø-root
		THEMATIC NOUNS: Ø-V-root				
		RADICAL NOUNS: Ø-Ø-root				

Table 3. Ayoreo possessive inflection.

- (12) a. *j-i-go* (1SG), *b-a-go* (2SG), *Ø-i-go* (3), *d-a-go* (REFL),
jok-i-go (1PL), *wak-a-go* (2PL), *Ø-Ø-ko* (GF) “jar, earthenware”
 b. *j-e-ŋaj* (1SG), *m-e-ŋaj* (2SG), *g-e-ŋaj* (3), *n-e-ŋaj* (REFL),
jok-e-ŋaj (1PL), *wak-e-ŋaj* (2PL) “farm, vegetable garden”
 c. *j-u-ŋakari* (1SG), *m-a-ŋakari* (2SG), *Ø-u-ŋakari* (3), *n-a-ŋakari* (REFL),
jok-u-ŋakari (1PL), *wak-a-ŋakari* (2PL), *Ø-Ø-ŋakari* (GF) “grown son”

AY possessive morphology can be compared with verb inflection and free pronouns, as reported in Table 4 where phonemic segments shared by the corresponding possessive markers are in bold. The 1SG, 2SG and 2PL possessive markers respectively coincide with the 1SG.IRLS, 2SG.RLS and 2PL.RLS of the verb. The 1PL and 2PL possessive prefixes stem from the corresponding pronouns. Similarities between possessive prefixation and free pronouns are also found in the singular persons.

	Ayoreo verb inflection		Ayoreo free pronouns
	REALIS	IRREALIS	
1SG	[Ø-V-ROOT]	<i>j</i> -V-ROOT	(u) <i>ju</i>
2SG	<i>b-a</i> /V-ROOT	Ø- <i>a</i> /V-ROOT	(u) <i>wa</i>
3	<i>tɛ</i> /t/Ø-(V)-ROOT	–	[<i>ude</i> (“this” M)] [<i>udak</i> (“this” F)] [<i>ute</i> (“that” M)] [<i>wate</i> (“that” F)]
1PL	[Ø-V-ROOT- <i>ko/go</i>]	<i>j</i> -V-ROOT- <i>ko/go</i>	(u) <i>jok</i>
2PL	<i>wak-a</i> /V-ROOT- <i>tɛo/jo</i>	Ø- <i>a</i> /V-ROOT- <i>tɛo/jo</i>	(u) <i>wak</i>
3PL	–	–	<i>ore</i>

¹⁵ The data in all examples mirror the respective sources as for prefix nasalization.

Table 4. Ayoreo verb inflection and free pronouns.¹⁶

3.2 Thematic nouns (Ø – THEMATIC VOWEL – ROOT)

Thematic nouns, as in (12a,c), are the most frequent ones. They are usually regular and form a productive class. There are only a few exceptions relating to the shape of the 2nd-person in words with a high thematic vowel: a few nouns have 2nd-vowel /e/ (13a), while a single exception (ex. 50 in §5.1) exhibits 2nd-vowel /o/. In (13b) the 2nd-vowel /e/ is due to merging of the prefix vowel with the first vowel of the root:

- (13) a. *j-i-daj* (1SG), *b-e-daj* (2SG), *Ø-i-daj* (3), *d-e-daj* (REFL),
jok-i-daj (1PL), *wak-e-edaj* (2PL) “village, town”
b. *j-u-etɛaj* (1SG), *b-e-tɛaj* (2SG), *Ø-u-etɛaj* (3), *d-e-tɛaj* (REFL),
jok-u-etɛaj (1PL), *wak-e-tɛaj* (2PL) “beyond, opposite side of”¹⁷

3.3 Prefixal nouns (PREFIX – THEMATIC VOWEL – ROOT)

The 3rd-person of prefixal nouns is characterized by one of the lexically determined allomorphs: *d-* (14a), *g-* (14b), *j-* (14c), *k-* (14d) and *p-* (14e). The *d*-nouns are by far the most frequent (considering the relative rarity of prefixal nouns), while *k-* and *p-*nouns are exceedingly rare. Since the latter is the most frequent GF prefix, forms such as *pibiŋaj* (14e) must be former GFs:

- (14) a. *j-u-kari* (1SG), *b-a-kari* (2SG), *d-u-kari* (3), *d-a-kari* (REFL) “thread”
b. *j-i-pej* (1SG), *b-e-pej* (2SG), *g-i-pej* (3), *d-e-pej* (REFL) “man’s rectangular bag”
c. *j-i-minori* (1SG), *b-e-minori* (2SG), *j-u-minori* (3), *d-e-minori* (REFL),
jok-i-minori (1PL), *wak-e-minori* (2PL) “who/what is in the direction of”
d. *j-a-kadi* (1SG), *b-a-kadi* (2SG), *k-a-kadi* (3), *d-a-kadi* (REFL),
jok-a-kadi (1PL), *wak-a-kadi* (2PL) “entrance”
e. *j-i-biŋaj* (1SG), *b-a-biŋaj* (2SG), *p-i-biŋaj* (3), *d-a-biŋaj* (REFL),
jok-i-biŋaj (1PL), *wak-a-biŋaj* (2PL) “call, shout”

The 3rd-prefix *j-* always co-occurs with the irregular vocalic pattern /i/ (1st-person) ~ /e/ (2nd-person) ~ /u/ (3rd-person) and is only found in nouns derived from the highly irregular noun *juj* (15):¹⁸

- (15) *j-i* (1SG), *b-ej* (2SG), *j-uj* (3), *d-ej* (REFL),
jok-i (1PL), *wak-ej* (2PL) “bodily presence; killed body”

The small *g*-nouns subset, with thematic vowel /i/, also shows 2nd-vowel /e/ rather than /a/ (16). Some *g*-nouns (whatever the thematic vowel) may alternate a prefixal and a thematic 3rd-person (see again 16), suggesting that they tend to converge towards the largest inflectional class (i.e. thematic):

- (16) *j-i-jasōri* (1SG), *b-e-jasōri* (2SG), *g-i-jasōri* / *Ø-i-jasōri* (3), *d-e-jasōri* (REFL),
jok-i-jasōri (1PL), *wak-e-jasōri* (2SG) “one who finds something”

The small set of *d*-nouns (17) exhibits three properties: (i) they mostly consist of kinship terms (although not all kinship terms are *d*-nouns); (ii) their 3rd-vowel is idiosyncratically /a/ or /e/; (iii) the 3rd-person coincides with the REFL (the only exception is *dukari* “thread” in (14a)). If one assumes that in *d*-nouns with 1st-vowel /i/, such as those in (17b, 18), this was the original thematic vowel, we surmise that the

¹⁶ The 1.RLS is shown between square brackets, because it is normally replaced by the 1.IRLS in currently spoken AY.

¹⁷ In Colonia Peralta (Paraguay) we have also documented the irregular 2PL form *wakuɛtɛaj* alternating with *waketɛaj*.

¹⁸ Since *juj* has reduced phonological root, the thematic vowel is not indicated.

REFL has colonized the 3rd-person (see §5.4). The *d*-prefix can turn into *n*- owing to nasal harmony (17b, 18b). Some *d*-nouns have an irregular prefixless 1SG form (18), occasionally alternating with the regular one as in (18a):

- (17) a. *j-a-haj* (1SG), *b-a-haj* (2SG), *d-a-haj* (3/REFL) “brother”
 b. *j/j̃-saraj* (1SG), *b/m-ã-saraj* (2SG), *n-ã-saraj* (3/REFL),
jok-ĩ-saraj (1PL), *wak-ã-saraj* (2PL) “son-in-law”
- (18) a. \emptyset -*i-tigate* / *j-i-tigate* (1SG), *b-a-tigate* (2SG), *d-a-tigate* (3/REFL),
jok-i-tigate (1PL), *wak-a-tigate* (2PL) “older brother”
 b. \emptyset -*i-na* (1SG), *b-e-na* (2SG), *n-e-na* (3/REFL) “sister”¹⁹

3.4 Radical nouns (\emptyset – \emptyset – ROOT)

The vocalic pattern of the singular persons of radical nouns is /i/ ~ /a/ ~ \emptyset , as in (19a). The only exceptions are nouns with 1st-vowel /u/, owing to vowel harmony triggered by the identical first root-vowel (19b):

- (19) a. *j-i-betigaj* (1SG), *b-a-betigaj* (2SG), \emptyset - \emptyset -*betigaj* (3), *d-a-betigaj* (REFL),
jok-i-betigaj (1PL), *wak-a-betigaj* (2PL) “multitude”
 b. *j-u-hurugaipidi* (1SG), *b-a-hurugaipidi* (2SG), \emptyset - \emptyset -*hurugaipidi* (3), *d-a-hurugaipidi* (REFL),
jok-u-hurugaipidi (1PL), *wak-a-hurugaipidi* (2PL) “prison”

In word-initial position, i.e. precisely in the 3rd-person, the consonant can undergo fortition, a phenomenon also observed in radical verbs (ex. 70 and 90). Thus, /b/ and /g/ can devoice into /p/ (20a) and /k/ (20b), and /m/ and /ŋ/ can denasalize into /p/ (20c) and /k/ (20d):²⁰

- (20) a. *j-i-boti* (1SG), *b-a-boti* (2SG), \emptyset - \emptyset -*poti* (3) “food”
 b. *j-u-guteabuñaj* (1SG), *b-a-guteabuñaj* (2SG), \emptyset - \emptyset -*kuteabuñaj* (3) “great amount of things”
 c. *j-i-mataraj* (1SG), *m-a-mataraj* (2SG), \emptyset - \emptyset -*pātaraj* (3) “tooth”
 d. *j-i-ŋaraj* (1SG), *b-a-ŋaraj* (2SG), \emptyset - \emptyset -*kāraj* (3) “who/what is kept apart”

Similarly, root-initial /r/ can derhotacize into /d/ (21a), or into /n/ in nasal-harmony words (21b):

- (21) a. *j-i-rosadi* (1SG), *b-a-rosadi* (2SG), \emptyset - \emptyset -*dosadi* (3) “side; wall”
 b. *j-i-rarane* (1SG), *b-a-rarane* (2SG), \emptyset - \emptyset -*narane* (3) “shoulder blade”

In some radical nouns there is alternation between root-initial /t̥/ in the 3rd-person and /j/ elsewhere (see ex. 22). For a possible explanation, see §5.5:

- (22) *j-i-jaripi* (1SG), *b-a-jaripi* (2SG), \emptyset - \emptyset -*taripi* (3) “chair; saddle”

3.5 The generic form

The GF is mostly obtained by means of lexically conditioned prefixes. In order of frequency, the allomorphs are *p*- (23a), *dVk*- (where *-V-* is a copy of the thematic vowel; 23b), *g*- (23c) and *k*- (23d), with *p*-

¹⁹ According to Higham et al. (2000), this term for “sister” is only used in the singular.

²⁰ The alternative hypothesis (lenition in intervocalic contexts) is discarded by the regular preservation of unvoiced intervocalic stops, as confirmed by several examples reported here. This is further confirmed by cases such as *pamoj* (ex. 25a), where the unvoiced root-initial consonant undergoes no lenition in the whole possessive paradigm.

overwhelmingly frequent and *k-* extremely rare. For simplicity, in GF-related examples the latter is mostly contrasted with the 3rd-person only:

- (23) a. *Ø-a-kadisōri* (3), *p-a-kadisōri* (GF) “teacher”
 b. *g-a-nej* (3), *dak-a-nej* (GF) “possession; gift”
 c. *Ø-i-giñaj* (3), *g-i-giñaj* (GF) “house”
 d. *Ø-ō-rateaj* (3), *k-ō-rateaj* (GF) “weapon”

In the case of *d*-nouns with different 1st- and 3rd-vowels (§3.3), the GF displays the same vowel as the 1st-person (24). This is further evidence that the 3rd-person of *d*-nouns has been replaced by the REFL (§3.3 and §5.4):

- (24) *j-i-karia* (1SG), *b-a-karia* (2SG), *d-a-karia* (3/REFL),
jok-i-karia (1PL), *p-i-karia* (GF) “daughter-in-law”

In some cases, the GF coincides with the root. This occurs with thematic nouns in /i/ or /u/ (25), where /u/ is mostly due to harmonization with the first root-vowel (25b). This constraint might suggest that in these words the possessive inflection was obtained by adding the default thematic vowel /i/ to the radical GF.²¹ This has indeed occurred with many relatively recent Spanish loanwords, which unsurprisingly entered the AY lexicon as GFs, with subsequent creation of the possessive inflection (26). This shows that the class of thematic nouns is still productive. The alternative consists in claiming that the autochthonous bare-root GFs are due to phonetic erosion, which is indeed likely to have occurred with high frequency words like the ones in (25). This is the only viable hypothesis in (25c), where thematic /u/ has no harmonic motivation and the fortition of /r/ into /d/ follows the same pattern as (21):

- (25) a. *Ø-i-pamoj* (3), *Ø-Ø-pamoj* (GF) “woven belt”
 b. *Ø-u-hubej* (3), *Ø-Ø-hubej* (GF) “woman’s large bag”
 c. *Ø-ũ-rahej* (3), *Ø-Ø-dahej* (GF) “path”
- (26) a. *Ø-i-karpaj* (3), *Ø-Ø-karpaj* (GF) “tent”, cf. Spanish *carpa* “tent”
 b. *Ø-i-plata* (3), *Ø-Ø-plata* (GF) “money”, cf. Spanish *plata* “silver; money”

Indeed, when the GF coincides with the root, the initial consonant can undergo fortition, just as the 3rd-person of radical nouns (see also ex. 12a, §3.1).

- (27) a. *Ø-i-gatibej* (3), *Ø-Ø-katibej* (GF) “spoon”
 b. *Ø-u-burudi* (3), *Ø-Ø-purudi* (GF) “shade”
 c. *Ø-i-renguj* (3), *Ø-Ø-deguj* (GF) “camp, village”

4. Chamacoco possessive inflection

The present section describes the morphology of CH possessive inflection. We first introduce the person markers (§4.1), next we address the peculiarities of thematic (§4.2), prefixal (§4.3) and radical nouns (§4.3). Although the GFs are rarely attested in CH, they show remarkable morphological variability (§4.5).

4.1 Person inflection

²¹ Space restrictions prevent showing that thematic /i/ can be assumed as the AY default vowel, whereas /u/ is often the result of a harmonization process.

Table 5 illustrates the CH possessive inflection, with (28) as an example. It is useful to compare Table 5 with the data on verb inflection and free pronouns listed in Table 6, where the phonemes shared with the corresponding noun prefixes are in bold.²²

1SG	2SG	3	REFL	1PL.INCL/1PL.EXCL	2PL	GF
<i>p</i> -V-root	∅- <i>a/e</i> /V-root	PREFIXAL NOUNS: <i>d</i> -V-root <i>w</i> -V-root <i>k</i> -V-root <i>j</i> -V-root	<i>d-a/e</i> /V-root	– (free pronoun + 3 rd -person)	– (free pronoun + 3 rd -person)	<i>dVk</i> -V-root <i>d</i> -V-root <i>k</i> -V-root ∅-∅- <i>o</i> -root o-[3 rd -person]
		THEMATIC NOUNS: ∅-V-root				
		RADICAL NOUNS: ∅-∅-root				

Table 5. Chamacoco possessive inflection.

- (28) *p-a-lokot* (1SG), ∅-*a-lokot* (2SG), ∅-*a-lokot* (3), *d-a-lokot* (REFL),
ejok ∅-*a-lokot* (1PL.INCL), *ōrjok* ∅-*a-lokot* (1PL.EXCL), *olak* ∅-*a-lokot* (2PL), *ōr* ∅-*a-lokot* (3PL)
“nickname”

	Chamacoco verb inflection		Chamacoco free pronouns
	REALIS	IRREALIS	
1SG	<i>t</i> / <i>tVk</i> -V-ROOT	–	<i>jok</i>
2SG	∅-<i>a/e</i> /V-ROOT	–	<i>owa</i>
3	<i>t</i> / <i>ts</i> / <i>t</i> / <i>d</i> / <i>j</i> /∅-(V)-ROOT	<i>d</i> / <i>t</i> /∅-(V)-ROOT	<i>ir</i> (<i>e</i>), [<i>witei</i> (M), <i>wate</i> (F)]
1PL.INCL	<i>j</i> -V-ROOT(- <i>lo</i> = GP)	–	<i>ejok</i> (1PL.INCL), <i>ejoklo</i> (1GP.INCL)
1PL.EXCL	<i>o</i> - <i>j</i> -V-ROOT	–	<i>ōrjok</i>
2PL	∅-V-ROOT- <i>lo</i>	–	<i>olak</i> (PL), <i>olaklo</i> (GP)
3PL	<i>o</i> -3.RLS	<i>o</i> -3.IRLS	<i>ōr</i> , [<i>wir</i>]

Table 6. Chamacoco verb inflection and free pronouns.

The 1SG possessive *p*-prefix does not share any similarity with either verb inflection or free pronouns. This is a CH innovation (see §6.1). The 2SG is prefixless (with exceptions to be discussed in §4.2). As already described for OZ and AY (see §1.2, §2.1 and §3.1), nouns with high thematic vowels (in CH including /i/ alongside /i u/) exhibit the 2SG-vowel /a/ or – as a CH innovation – /e/, originally a prefix vowel (29). Here again, this thematic vowel replacement is also found in verb inflection (30):

- (29) a. *p-i-tilta* (1SG), ∅-*e-tilta* (2SG), ∅-*i-tilta* (3), *d-e-tilta* (REFL) “stick”
b. *p-u-kuta* (1SG), ∅-*a-kita* (2SG), ∅-*u-kuta* (3), *d-a-kita* (REFL) “branch”

- (30) *t-i-juhu* (1SG), ∅-*e-juhu* (2SG), *t*-*i-juhu* (3.RLS),
j-i-juhu (1PL.INCL), *o-j-i-juhu* (1PL.EXCL), ∅-*e-juhu-lo* (2PL), *o-t*-*i-juhu* (3PL.RLS) //
d-i-juhu (3.IRLS), *o-d-i-juhu* (3PL.IRLS) “to remove, to extract”

²² When discussing data in general terms, only the oral allomorphs are reported, and only /d/ is mentioned in relation to the word-initial free alternation /d/ ~ /l/. With individual examples, the form(s) most frequently found in fieldwork is cited. Table 6 shows that CH has lost the IRLS inflection in the 1st- and 2nd-persons; interestingly, AY presents the complementary distribution (see Table 4 and Ciucci & Bertinetto 2015).

The morphology of the 3rd-person will be described while analyzing the individual inflectional classes. The REFL has the same *d*-allomorphs as the 3.IRLS of most CH verbs, and can turn into *n*- in nasal-harmony contexts (see fn. 22). As noted in §1.2, the theme of the REFL always coincides with that of the 2SG (see, e.g., examples 32 and 34).

The 1PL.INCL, the 1PL.EXCL and 2PL do not have a dedicated affix in noun inflection.²³ In these persons, the relevant free pronoun precedes the quotation form, which in turn coincides with the 3rd-person. This underlines the pivotal role of the 3rd-person in the possessive inflection. For simplicity, the CH plural persons are only reported in (28) to provide a generally valid example (note that the 3PL pronoun is optional).

The GF is discussed in §4.5. Since possessive inflection is no longer productive in CH, recent loanwords are treated as non-possessable. This suggests that *ixit* “son” (33), from Spanish *hijo*, probably entered the CH lexicon at an early stage of contact.

4.2 Thematic nouns (Ø – THEMATIC VOWEL – ROOT)

Thematic nouns form the largest and most regular class. The 2SG has no prefix, and the 2SG-vowel is replaced by /a/ (as in OZ and AY) or /e/ in nouns with high thematic vowel. By contrast, in thematic nouns with non-high thematic vowel, where no replacement occurs, the 2SG and the 3rd-person coincide (31; see also ex. 3c-d, §1.2):

- (31) a. *p-e-rtɛ* (1SG), *Ø-e-rtɛ* (2SG), *Ø-e-rtɛ* (3), *d-e-rtɛ* (REFL) “nape”
 b. *p-o-bitɛ* (1SG), *Ø-o-bitɛ* (2SG), *Ø-o-bitɛ* (3), *d-o-bitɛ* (REFL) “wound, injury”

Some nouns with thematic /o/ followed by bilabial consonant, where /a/ replaces the thematic vowel in the 2SG and in the REFL (32a), are an exception. This is also found in a few verbs (32b):

- (32) a. *p-o-mtsit* (1SG), *Ø-a-mtsit* (2SG), *Ø-o-mtsit* (3), *n-a-mtsit* (REFL) “bed”
 b. *t-o-mtis* (1SG), *Ø-a-mtis* (2SG), *ts-o-mtis* (3.RLS),
j-o-mtis (1PL.INCL), *o-j-omtis* (1PL.INCL), *Ø-a-mtis-lo* (2PL), *o-ts-omtis* (3PL) //
n-o-mtis (3.IRLS) “to turn”

Another exception is to be found in several nouns which preserve the thematic vowel /i/ in the 2SG, turned into /j/ after /e/ (33). This confirms the prefixal origin of 2SG /e a/ (see again §1.2, ex. 3c-d):

- (33) *p-i-xit* (1SG), *e-j-xit* (2SG), *Ø-i-xit* (3), *de-j-xit* (REFL) “son”

In some nouns with thematic /i/ or /i/, the 2SG and the REFL vowel /a/ is accompanied by root alternations, such that the root-initial consonant contrasts with that of the 1SG- and 3rd-person. The following alternations occur: /tɛ/ (1SG/3) ~ /ts/ (2SG) (34a-b), /j/ (1SG/3) ~ /l/ (2SG) (34c), /j/ (1SG/3) ~ /h/ (2SG) (34d-e), and /ɛ/ (1SG/3) ~ /s/ (2SG) (34f). By contrast, when the 2SG-vowel is /e/, the 2SG root-initial consonant is the same as in the 3rd-person (34d). The first root-vowel can reduce to /i/ after root-initial /h/ when the latter alternates with /j/, as in (34e). These idiosyncrasies will be discussed in §5.2:

- (34) a. *p-i-tɛukut* (1SG), *Ø-a-tsukut* (2SG), *Ø-i-tɛukut* (3), *d-a-tsukut* (REFL) “navel”
 b. *p-i-tɛita* (1SG), *Ø-a-tsita* (2SG), *Ø-i-tɛita* (3), *d-a-tsita* (REFL) “mosquito net”
 c. *p-i-jertɛ* (1SG), *Ø-a-lertɛ* (2SG), *Ø-i-jertɛ* (3), *d-a-lertɛ* (REFL) “place”
 d. *p-i-jutɛ* (1SG), *Ø-a-hutɛ* / *Ø-e-jutɛ* (2SG), *Ø-i-jutɛ* (3), *d-ahutɛ* (REFL) “house”
 e. *p-i-jōrta* (1SG), *Ø-a-hiřta* (2SG), *Ø-i-jōrta* (3), *n-a-hiřta* (REFL) “plant”
 f. *p-i-ɛuwo* (1SG), *Ø-a-suwo* (2SG), *Ø-i-ɛuwo* (3), *d-a-suwo* (REFL) “possessed thing, clothing”

²³ As shown in Ciucci & Bertinetto (2015), clusivity is a CH innovation.

4.3 Prefixal nouns (PREFIX – THEMATIC VOWEL – ROOT)

The most common prefixal nouns are characterized by the 3rd-prefix *d-* (35a), in free alternation with *l-* and normally alternating with *n-* in nasal-harmony contexts (35b). As in the other Zamucoan languages, most *d-* nouns are kinship terms and mostly show the 3rd-vowel /a/ or /e/, so that the 3rd-person and the REFL overlap. The other lexically determined allomorphs – *j-* (35c), *k-* (35d) and *w-* (35d) – are less common; *d-* and *j-* are the only ones that coincide with some of the 3.RLS prefixes of verb inflection (Table 6; see also Table 11):

- (35) a. *p-a-tahatẽa* (1SG), *Ø-a-tahatẽa* (2SG), *d/l-a-tahatẽa* (3/REFL) “stepmother”
b. *jama* / *p-e-rmit̃e* (1SG), *Ø-e-rmit̃e* (2SG), *n-e-rmit̃e* (3/REFL) “uncle”
c. *p-o-nĩ:t* (1SG), *Ø-o-nĩ:t* (2SG), *j-o-nĩ:t* (3), *n-o-nĩ:t* (REFL) “ghost, evil spirit”
d. *p-i:-lak* (1SG), *Ø-a:-lak* (2SG), *k-a:-lak* (3), *d-a:-lak* (REFL) “food, meal”
e. *p-o-lt* (1SG), *Ø-o-lt* (2SG), *w-o-lt* (3), *d-o-lt* (REFL) “cap”

The 1SG-vowel of prefixal nouns (and of *d-*nouns in particular) is often different from the 3rd-vowel, so that 1SG /i i/ can alternate with 3rd-person /a e/ (36a-b). We discuss this in §5.1 and §5.4. In a few nouns, /i/ can alternate with /o/ in the 1SG (36b):

- (36) a. *p-i-tibitẽa* (1SG), *Ø-a-tibitẽa* (2SG), *d-a-tibitẽa* (3/REFL) “older sister (of a woman) / niece (of a woman)”
b. *p-i-sibitẽa* / *p-o-sibitẽa* (1SG), *Ø-a-sibitẽa* (2SG), *l-a-sibitẽa* (3/REFL) “niece (of a man)”

4.4 Radical nouns (Ø – Ø – ROOT)

Radical nouns form the smallest class, with interesting irregularities to be used for reconstructive purposes. The 1SG-vowel is mostly high and the 2nd-vowel is either /a/ or /e/, but the vocalic pattern is often idiosyncratic and accompanied by pervasive root allomorphy. The possibly original first root-vowel is often only found in the 3rd-person, for it deletes (37a) or reduces to /i/ (37b) elsewhere (§5.5). This finds a parallel in radical verbs such as (37c). The inflectional vowel and the first root-vowel occasionally give rise to harmonic processes as in (37d), with /u/ in the 1SG and /e/ in the 2SG (supposing that /u/ was the original thematic vowel, the actual rule-breaking phenomenon is the harmonization in the 2SG).

Root-allomorphy can also concern the root-initial consonant, as in (37e) where /j/ in the 1SG alternates with /n/ elsewhere. Since /n/ is the nasalized counterpart of /l/ (§4.3), this corresponds to the alternation /j/ ~ /l/ (see ex. 34c), where /j/ is normally found in 1SG and 3rd-person while /l n/ occurs in 2SG and REFL. As argued in §5.4, the contrast of 1SG /j/ with 3rd-person /l n/ (as in ex. 66c) suggests that the latter person assimilated to the REFL. Finally, the root-initial consonant can undergo word-initial fortition in the 3rd-person, as in (37f):

- (37) a. *p-i-ktsirbit* (1SG), *Ø-a-ktsirbit* (2SG), *Ø-Ø-kotsirbit* (3), *l-a-ktsirbit* (REFL) “bag”
b. *p-i-tirĩ:t* (1SG), *Ø-e-tirĩ:t* (2SG), *Ø-Ø-torĩ:t* (3), *d-e-tirĩ:t* (REFL) “faint”
c. *tik-i-tila* (1SG), *Ø-a-tila* (2SG), *Ø-Ø-tola* (3),
j-i-tila (1PL.INCL), *o-j-i-tila* (1PL.EXCL), *Ø-a-tili-lo* (2PL), *o-tola* (3PL) “to be afraid of”
d. *p-u-huta* / *p-u:-ta* (1SG), *Ø-e-heta* / *Ø-e:-ta* (2SG), *Ø-Ø-huta* (3), *d-e-heta* / *d-e:-ta* (REFL) “head”
e. *p-i-jěr* (1SG), *Ø-a-ner* (2SG), *Ø-Ø-ner* (3), *n-a-ner* (REFL) “behind”
f. *p-o-bitita* (1SG), *Ø-a-bitita* (2SG), *Ø-Ø-potita* (3), *l-a-bitita* (REFL) “edible fruit”

4.5 The generic form

The CH GF, unlike that of the sister languages, has almost completely disappeared (§1.2). In addition, some of the surviving GFs have partly lost the original function and can optionally and counterintuitively be used

together with a possessor (see Ciucci 2016). Despite their low number, GFs exhibit remarkable idiosyncratic variability: they can coincide with the root (38a), or be obtained via a prefix or a pre-prefix added to the 3rd-person. Apart from the last mentioned allomorph (see below), the possible prefixes are: *d-* (38b), *k-* (38c) and *dVk-* (38d), where *-V-* is a copy of the thematic vowel. As seen above, *d-* and *k-* are also possible prefixes of the 3rd-person. Since /d l/ are in free alternation word-initially, *d-* and *dVK-* can be realized as *l-* and *lVk-*:

- (38) a. *Ø-i-xōrta* (3), *Ø-Ø-xōrta* (GF) “plant”
 b. *Ø-i-kirmista* (3), *d-i-kirmista* (GF) “blood”
 c. *Ø-i:-bitē* (3), *k-i:-bitē* (GF) “smoke”
 d. *Ø-i-ṭeibitē* (3), *dik-i-ṭeibitē* (GF) “spirit, image”

The most common CH GF marker is the pre-prefix *o-* as added to the 3rd-person. This applies to words of all classes: radical (39a), thematic (39b) and prefixal (39c-d). In thematic nouns with high thematic vowel, the latter is directly replaced by /o/ in the GF (39b), a mechanism identical to the one concerning /a/ or /e/ in 2SG and REFL (§4.1, see also §1.2). This gives some of these GFs the appearance of thematic nouns (39a-b). The pre-prefix *e-* in (39d) may be regarded as a variant of the last type, possibly caused by assimilation to the contiguous prefix /j/ and the following thematic vowel /i/, which deletes in the GF:

- (39) a. *Ø-Ø-ṃartita* (3), *o-ṃartita* (GF) “ring”
 b. *Ø-i-terpita* (3), *o-terpita* (GF) “pants”
 c. *j-o-ni:t* (3), *o-j-o-ni:t* (GF) “ghost, spirit”
 d. *j-i-nsīrtē* (3), *e-j-Ø-nsīrtē* (GF) “boss, owner”

The pre-prefix *o-* is also found in verb morphology, where it is a pluralizer used to form the 3PL out of the 3rd-person, and is also used to express an impersonal subject. As suggested by Ciucci & Bertinetto (2015), the 3rd-person verbal pluralizer *o-* probably derives from the 3PL pronoun *ōr*, as shown in Table 6. As the same table indicates, an identical pre-prefix *o-* marks the 1PL.EXCL of CH verbs, but its origin is less obvious: it may be a morphomic reuse (in the sense of Aronoff 1994) of the 3rd-person pluralizer, or it may stem from the noun *os* (reduced form of *oso* “people”) via the typologically not uncommon shift from collective unspecified plurality to 1PL reference (Chafe 1990).²⁴ Indeed, words analogous to CH *os* are used as indefinite reference pronouns in other American Indian languages (Mithun 1991, 1993). Interestingly, as far as nouns are concerned, 3PL reference can be expressed by the anteposed 3PL pronoun *ōr*, while generic possession is either expressed by the 3PL pronoun or by the noun *os*: cf. *Ø-Ø-huta* “his/her/their head”, *ōr Ø-Ø-huta* “their head / head (in general)”, *os Ø-Ø-huta* “head (in general)”. The construction with *os* may be considered a suppletive strategy to repair the scarcity of GFs.

5. Comparison

This section compares the possessive inflection within the family, pointing out innovative vs. conservative features and paving the way for the reconstruction of Proto-Zamucoan in §6. Of special importance are common exceptions or peculiar divergences. In (40), for instance, AY has an irregular GF also present in OZ and this could hardly be a mere matter of chance; in (41), by contrast, the CH noun exhibits irregular root-allomorphy, opposing 2SG and REFL to the rest of the paradigm, but the AY cognate shows that the root-consonant /ŋ/ found in the two mentioned persons is the original one:

- (40) OZ *j-i-terepek* (1SG), *Ø-a-terepek* (2SG), *Ø-i-terepek* (3), *Ø-Ø-pepek* (GF) “fabric, cloth”

²⁴ Further hypotheses are discussed in (Ciucci & Bertinetto 2015).

AY *j-i-tarāpej* (1SG), *b-a-tarāpej* (2SG), *Ø-i-tarāpej* (3), *Ø-Ø-pepej* (GF) “what is used to cover”²⁵

- (41) AY *j-i-ña* (1SG), *b-a-ña* (3), *Ø-i-ña* (3), *d-a-ña* (REFL) “woman’s breast”
CH *p-ĩ-ta* (1SG), *Ø-ã-ñta* (2SG), *Ø-ĩ-ta* (3), *n-ã-ñta* (REFL) “udder”

The Zamucoan languages have the same inflectional classes (prefixal, thematic, radical), and exhibit general class correspondence between cognate words, indicating substantial diachronic stability, with thematic nouns forming the largest and most regular class. Subsection 5.1 compares the thematic vowel correspondences within this class. The presence of /a/ instead of /e/ in the CH 2SG (§4.2) is often accompanied by root-allomorphy (§5.2). Prefixal nouns present shared irregularities (§5.3), some of which stemmed from assimilation of the 3rd-person to the REFL (§5.4). Subsection §5.5 compares radical nouns, while §5.6 deals with loss of possessive inflection, which mainly occurred in CH.

5.1 Thematic vowel

The thematic vowels are lexically idiosyncratic (recall the assignment of Latin verbs to different conjugations). Similar to the verbal conjugations in Romance, thematic vowels are diachronically rather stable, as confirmed by the frequently found intrafamily correspondences. As in Romance, however, there are exceptions, even independently of the fact that the CH vocalic inventory is richer, owing to the innovative presence of /i/. This vowel corresponds to a high vowel in the other languages (42) or derives from reduction of a non-high thematic vowel (see ex. 43, with AY /e/ → CH /i/ in the 1 and 3rd-person):

- (42) AY *j-u-mahoto* (1SG), *b-a-mahoto* (2SG), *Ø-u-mahoto* (3), *d-a-mahoto* (REFL) “enemy” (F)
CH *p-i-mahata* (1SG), *Ø-a-mahata* (2SG), *Ø-i-mahata* (3), *n-a-mahata* (REFL) “enemy” (F)

- (43) AY *j-e-rubi* (1SG), *Ø-e-rubi* (2SG), *Ø-e-rubi* (3), *d-e-rubi* (REFL) “urine”
CH *p-i-hirbitɛ* (1SG), *Ø-e-hirbitɛ* / *Ø-e-herbitɛ* (2SG), *Ø-i-hirbitɛ* (3), *d-e-hirbitɛ* (REFL) “urine”

The CH counterpart of OZ/AY inflectional /a/ can be /a/ or /e/, owing to massive (although not systematic) /a/ → /e/ change. This can be observed in the vocalic pattern of many nouns (44) and verbs (45). As illustrated with OZ examples in §1.2 (see ex. 3c-d), the Proto-Zamucoan 2SG-vowel */a/ used to be part of the prefix, and indeed CH too presents a few nouns, as shown in (46; see also 33, §4.2), that maintain thematic /i/ (turned into /j/) together with the preceding original prefix-vowel /e/ (< */a/). Example (47) repeats example (3c), where the same phenomenon is observed for OZ; comparison with the AY lexical cognate shows the idiosyncratic nature of this conservative feature:

- (44) AY *j-a-hej* (1SG), *b-a-hej* (2SG), *a-hej* (3), *d-a-hej* (REFL) “inside of, in the midst of”
CH *p-e-het* (1SG), *Ø-e-het* (2SG), *Ø-e-het* (3), *d-e-het* (REFL) “inside of, in the midst of”

- (45) AY *j-a-huke* (1SG), *b-a-huke* (2SG), *tɛ-a-huke* (3),
j-a-hu-ho (1PL), *wak-a-hu-tɛo* (2PL) “to split, to chop”
CH *t-e-hek* (1SG), *Ø-e-hek* (2SG), *ts-e-hek* (3.RLS),
j-e-hek (1PL.INCL), *o-j-e-hek* (1PL.EXCL), *Ø-e-hek-lo* (2PL), *o-ts-e-hek* (3PL.RLS) //
d-e-hek (3.IRLS) “to divide, to split”

- (46) OZ *j-i-gios* (1SG), *Ø-a-gios* (2SG), *Ø-i-gios* (3), *Ø-Ø-gios* (GF) “relative”
AY *j-i-giosi* (1SG), *b-a-giosi* (2SG), *Ø-i-giosi* (3), *d-a-giosi* (REFL) “relative”

²⁵ In the AY variety of Colonia Peralta, *itarāpej* and *pepej* underwent slight semantic differentiation, with *pepej* giving rise to a different inflectional paradigm.

CH *p-i:-sit* (1SG), *e-j-sit* (2SG), *Ø-i:-sit* (3), *de-j-sit* (REFL) “relative”

(47) OZ *j-i-geda* (1SG), *a-i-geda* (2SG), *Ø-i-geda* (3), *da-i-geda* (REFL),
aj-i-geda (1/2PL) “house”

AY *j-i-giṅaj* (1SG), *b-a-giṅaj* (2SG), *Ø-i-giṅaj* (3), *d-a-giṅaj* (REFL) “house”

Some AY exceptions equally show the 2SG-vowel /e/, probably due to raising assimilation induced by adjacent /i u/, as in (48; see also 13b, §3.2), or to /ai/ → /e/ vowel fusion, as in (13a, in §3.2) and (49), with the latter example illustrating the same phenomenon in verb morphology:

(48) AY *j-i* (1SG), *b-e-j* (2SG), *i* (3), *d-e-j* (REFL) “name”

CH *p-i:-tə* (1SG), *e:-j-tə* (2SG), *Ø-i:-tə* (3), *de:-j-tə* (REFL) “name”

(49) OZ (RLS): *a-i-se* (1SG), *da-i-se* (2SG), *tə-i-se* (3),

a-i-ko (1PL), *da-i-so* (2PL) “to reach”

AY *j-i-se* (1SG), *b-e-se* (2SG), *tə-i-se* (3),

j-i-ko (1PL), *wak-e-so* (2PL) “to find, to meet, to reach”

CH *t-i-ε* (1SG), *Ø-e-ε* (2SG), *tə-i-ε* (3.RLS),

j-i-ε (1PL.INCL), *o-j-i-ε* (1PL.EXCL), *Ø-e-ε-lo* / *Ø-e-εi-lo* (2PL), *o-tə-i-ε* (3PL.RLS) //

d-i-ε (3.IRLS) “to meet, to reach”

Finally, example (50) illustrates an exceptional paradigm shared by AY and CH, with a back 2nd- and REFL-vowel in a noun with high thematic vowel, which should normally yield the vowel replacement mechanism. For comparison, see examples (12c) and (29b):

(50) AY *j-u-hoj* (1SG), *b-o-hoj* (2SG), *Ø-u-hoj* (3), *d-o-hoj* (REFL),

jok-u-hoj (1PL), *wak-o-hoj* (2PL) “fellow”²⁶

CH *p-u-hut* (1SG), *Ø-u-hut* (2SG), *Ø-u-hut* (3), *d-u-hut* (REFL) (classifier “fellow”)

5.2 Root allomorphy

Some CH nouns exhibit root allomorphy in the root-initial consonant when the 2SG-vowel is /a/ instead of /e/ (see ex. 34, §4.2). The same sort of root alternations occurs in CH verb inflection (51), unlike in the sister languages (Ciucci & Bertinetto 2015):

(51) OZ RLS: *a-i-saw* <aizau> (1SG), *d-a-saw* <dazau> (2SG), *tə-i-saw* <chizau> (3) “to take”

AY *j-i-sa* (1SG), *b-a-sa* (2SG), *tə-i-sa* (3),

j-i-sa-go (1PL), *wak-a-sa-jo* (2PL) “to touch, to pick up, to grab, to accept”

CH *t-i-εew* (1SG), *Ø-a-sew* (2SG), *tə-i-εew* (3.RLS),

j-i-εew (1PL.INCL), *o-j-i-εew* (1PL.EXCL), *Ø-a-sew-lo* / *Ø-a-si-lo* (2PL), *o-tə-i-εew* (3PL.RLS) //

d-i-εew (3.IRLS) “to hold, to take, to grab”

Family-internal comparison allows one to reconstruct the original root-initial consonant. We simply report here the 2SG and 3rd-person, since (as shown in 51) their roots are, respectively, identical to those of the REFL and 1SG. With the root-initial alternations /ts/ (2SG) ~ /tə/ (3rd-person) as in (52), and /l/ (2SG) ~ /j/ (3rd-person) as in (53), the 2SG root is innovative. Conversely, the 2SG preserves the original root-initial consonant when /h/ (2SG) alternates with /j/ (3rd-person) as in (54). CH verb inflection sheds light on the

²⁶ In some AY varieties, the tendency to regularize the inflectional vowel /o/ into /a/ emerges (Gabriella Erica Pia, pers. comm.).

alternation /s/ (2SG) ~ /ɕ/ (3rd-person), for which comparative data in the nominal domain are scanty. In the only nominal pair that allows comparison (55, disregarding the AY root-initial syllable /ka/ which is lacking in the CH cognate), there is an irregular distribution of CH /ɕ/ and /s/, with /ɕ/ only present in the 1SG. However, verbs such as the one in (51) suggest that /s/, as exhibited by OZ and AY and preserved in the CH 2SG, turned into /ɕ/ in the CH 1SG and 3rd-person:

(52) AY *j-u-teaj* (1SG), *b-a-teaj* (2SG), *Ø-u-teaj* (3), *d-a-teaj* (REFL) “excrement, feces, dung”
 CH *p-i-tɛit* (1SG), *Ø-a-tsit* (2SG), *Ø-i-tɛit* (3), *d-a-tsit* (REFL) “excrement, feces, dung”

(53) AY *j-i-jarit* (1SG), *b-a-jarit* (2SG), *Ø-Ø-tearit* (3), *d-a-jarit* (REFL) “stopping place”²⁷
 CH *p-i-jertɛ* (1SG), *Ø-a-lertɛ* (2SG), *Ø-i-jertɛ* (3), *d-a-lertɛ* (REFL) “place”

(54) AY *j-i-hōra* (1SG), *b-a-hōra* (2SG), *Ø-Ø-hōra* (3), *d-a-hōra* (3) “friend, companion” (F)
 CH *p-i-jěra* (1SG), *Ø-a-hĩra* (2SG), *Ø-i-jěra* (3), *n-a-hĩra* (REFL) “friend, companion” (F)

(55) AY *j-i-kasisōri* (1SG), *b-a-kasisōri* (2SG), *Ø-i-kasisōri* (3), *d-a-kasisōri* (REFL)
 “opponent who is not afraid”

CH *p-i-ɕipsĩrtɛ* (1SG), *Ø-a-sĩpsĩrtɛ* (2SG), *Ø-a-sĩpsĩrtɛ* (3), *l-a-sĩpsĩrtɛ* (REFL) “opponent in combat”

Table 7 summarizes the evolution of CH noun and verb root-allomorphy. We surmise that the 3rd-person root-initial palatal consonants /ɕ/ (</s/, ex. 51, 55) and /j/ (</h/, ex. 54) were innovatively brought about by the high thematic vowel /i/ or /ĩ/, while the 2SG inflectional vowel /a/ prevented palatalization. By contrast, 2SG /a/ innovatively caused the depalatalization of /tɛ/ into /ts/ (52) and of /j/ into /l/ (53). Evidence that /ɕ/, /j/, /ts/ and /l/ are CH innovations comes from the absence of these consonants from the phonological inventory of OZ and AY:

ORIGINAL CONSONANT		INNOVATIVE CONSONANT	EXAMPLES
/tɛ/ (1SG/3)	>	/ts/ (2/REFL)	(7a-b), (52)
/j/ (1SG/3)	>	/l/ (2/REFL)	(7c), (53)
/h/ (2/REFL)	>	/j/ (1SG/3)	(7d-e), (54)
/s/ (2/REFL)	>	/ɕ/ (1SG/3)	(7f), (51), (55)

Table 7. Root-initial consonant alternation.

As shown in §5.4, the consonantal alternations discussed here with respect to CH shed light on some assimilation processes occurring in Zamucoan.

5.3 Prefixal nouns (PREFIX – THEMATIC VOWEL – ROOT)

The family-internal correspondences among kinship terms, most of which are *d*-nouns, suggest the hypothesis that this irregular set traces back to Proto-Zamucoan. Here only irregularities allowing diachronic inferences are focused upon.

In some *d*-nouns, an irregular 1SG alternates with the regular one (56-58). The AY and CH 1SG of “father” (56) and the CH 1SG of “mother” (57) also exhibit suppletive loanwords from Spanish: *japade*, *papa*, *mama*, respectively. The 1SG of “mother” (57) has an irregular prefixless form in Zamucoan; in OZ, the irregularity of this noun extends to 1PL and 2PL (§2.1). The coincidence between OZ and CH suggests that

²⁷ The 3rd-person of this AY noun shows an irregularity to be addressed in §5.5 (ex. 72).

1SG **ote* presumably was a Proto-Zamucoan form, while AY *jate* and CH *pati* are regularized forms (with final /i/ of *pati* stemming from vowel reduction, see §5.1). Another irregularity to be assigned to Proto-Zamucoan is the AY and CH 1SG of “grandmother” (58), consisting of the bare root:

- (56) OZ *j-a-itie* (1SG), \emptyset -*a-itie* (2SG), *d-a-itie* (3/REFL) “father”
 AY *j-a-j* / *j-a-pade* (1SG), *b-a-j* / *b-a-je* (2SG), *d-a-j* / *d-a-je* (3/REFL) “father”
 CH *di:* / *p-e-jtɛ* / *papa* (1SG), \emptyset -*e-jtɛ* (2SG), *l-/d-e-jtɛ* (3/REFL) “father”
- (57) OZ \emptyset -*o-te* (1SG), \emptyset -*a-te(tae)* (2SG), *d-a-te* (3), *as-o-te* (1PL), *aj-a-te* (2PL) “mother”
 AY \emptyset -*i-te* / *j-a-te* (1SG), *b-a-te* (2SG), *d-a-te* (3/REFL) “mother”
 CH \emptyset -*o-te* / *p-a-ti* / *mama* (1SG), \emptyset -*a-ta* (2SG), *d-a-ta* (3/REFL) “mother”
- (58) AY \emptyset - \emptyset -*kode* / *j-i-kode* (1SG), *b-a-kode* (2SG), *d-a-kode* (3/REFL) “grandmother”
 CH \emptyset - \emptyset -*kole* / \emptyset - \emptyset -*koli* / *p-e-kita* (1SG), \emptyset -*e-kita* (2SG), *l-/d-e-kita* (3/REFL) “grandmother”

A group of AY and CH *d*-nouns exhibit the 1SG-vowel /i/ or (in CH) /i/, contrasting with the 3rd-vowel /a/ or /e/, as in the AY 1SG *jikode* “grandmother” (58), where 3rd-person and REFL coincide. The anomaly here is that 1SG- and 3rd-vowel do not coincide. Since this anomaly is often shared by cognates in both languages, as shown in (59; see also ex. 63, §5.4), this can be regarded as a very old feature. Although 3rd-person high inflectional vowels are rare among *d*-nouns, one may surmise that in this small set of nouns **i/* was the original thematic vowel, while 3rd-person /a e/ comes from assimilation to the REFL. The same process was pointed out above to explain some exceptional CH thematic nouns (see §4.1 as well as 5.4), but in *d*-nouns this is particularly striking. The strong attraction by the REFL might be understood, in the case of kinship terms, with the relative frequency of reflexive reference for pragmatic reasons; however, cases such as the CH noun in (60), where 3rd-person and REFL do not coincide, might suggest that the *d*-prefix also existed as an independent 3rd-person marker. The CH nouns in (60-61), compared with their thematic cognates in AY, are exceptions to the normal correspondence of prefixal nouns within Zamucoan. Since the general tendency should be for nouns to belong to the largest inflectional class (thematic nouns), the AY thematic forms might be regarded as innovative. Finally, (62) shows that not all kinship terms were *d*-nouns in Proto-Zamucoan:

- (59) AY *j-i-ŋoŋamia* (1SG), *b-a-ŋoŋamia* (2SG), *d-a-ŋoŋamia* (3/REFL) “aunt, father’s sister”
 CH *p-i-ŋemtea* / *p-e-ŋemtea* (1SG), \emptyset -*a-ŋemtea* (2SG), *n-a-ŋemtea* (3/REFL) “aunt” (also: *nane:mtea*)
- (60) AY *j-u-suguruj* (1SG), *b-a-suguruj* (2SG), \emptyset -*u-suguruj* (3), *d-a-suguruj* (REFL) “fingernail, claw, hoof”
 CH *p-u-ɛurtɛ* (1SG), \emptyset -*e-ɛurtɛ* (2SG), *d-u-ɛurtɛ* (3), *d-e-ɛurtɛ* (REFL) “fingernail, toenail”
- (61) AY *j-a-buhi* (1SG), *b-a-buhi* (2SG), \emptyset -*a-buhi* (3), *d-a-buhi* (REFL) “nephew, woman’s brother”
 CH *p-e-bihit* (1SG), \emptyset -*e-bihit* (2SG), *d-e-bihit* (3/REFL) “nephew, woman’s brother”
- (62) AY *n-a-ŋami* (1SG), *m-a-ŋami* (2SG), \emptyset -*a-ŋami* (3), *n-a-ŋami* (REFL) “grandson”
 CH *p-a-ŋimite* (1SG), \emptyset -*a-ŋimite* (2SG), \emptyset -*a-ŋimite* (3), *n-a-ŋimite* (REFL) “grandson”

5.4 On the attraction of the 3rd-person by the reflexive

This subsection provides evidence that some irregularities or subregularities found in the Zamucoan languages can be explained by Proto-Zamucoan assimilation of the 3rd-person to the REFL.

The CH nouns in (63-64) show the root-initial consonant alternation /ɛ/ ~ /s/ (the former a CH innovation). When such alternation occurs, /s/ is always preceded by /a/, and /ɛ/ by a high vowel. Thus, as

pointed out in §5.2, the irregularity of this consonant alternation is enhanced by the irregular vocalic pattern, whereby the 1SG- and 3rd-vowel do not coincide. The interpretation of this pattern is however straightforward: /ɕ/ normally occurs in the 1SG – as well as (in regular cases) in the 3rd-person – owing to palatal assimilation induced by a preceding high vowel, while /s/ in the 2SG was immune from this phonological process owing to the preceding /a/. This suggests the following sequence of changes in the nouns in (63-65): first there was partial or total assimilation of the 3rd-person to the REFL, next 1SG palatalization took place. This combined vowel and consonant change occurred not only in *d*-nouns (63), but also in some thematic nouns (64-65). The alternative hypothesis, such that the vowel change took place in 1SG rather than in the 3rd-person, is contradicted by examples like (64), where the AY noun maintains thematic /i/ in the 3rd-person, while CH shows the innovative 3rd-vowel /a/ under REFL influence:

(63) AY *j-jn-ĩ-sarai* (1SG), *b-/m-ã-sarai* (2SG), *n-a-sarai* (3/REFL) “son-in-law”
 CH *p-i-εẽ:t* (1SG), *Ø-a-sẽ:t* (2SG), *l-a-sẽ:t* (3/REFL) “son-in-law”

(64) AY *j-i-kasisōri* (1SG), *b-a-kasisōri* (2SG), *Ø-i-kasisōri* (3), *d-a-kasisōri* (REFL)
 “opponent who is not afraid”

CH *p-i-εipsĩrte* (1SG), *Ø-a-sipsĩrte* (2SG), *Ø-a-sipsĩrte* (3), *l-a-sipsĩrte* (REFL) “opponent in combat”

(65) CH *p-o-mate* (1SG), *Ø-a-mate* (2SG), *Ø-a-mate* (3), *d-a-mate* (REFL) “anus; bottom of a boat”

Another type of CH root-initial consonant alternation is /j/ ~ /n/ (where the latter consonant is the nasalized counterpart of the CH innovative phoneme /l/). In §5.2 we showed that /j/ – to be found in 1SG and 3rd-person – is conservative, while /l n/ is an innovation brought about by the non-palatal 2SG-vowel /a/. This occurs in both nouns (66a) and verbs (66b). However, in (66c) root-initial /n/, rather than /j/, is unexpectedly found in the 3rd-person (see also ex. 37e, §4.4). Since root-initial consonant alternation is normally conditioned by vowel quality, one might claim that the radical form *nerpta* underwent attraction by REFL *nanerpta*:

(66) a. CH *p-i-jermite* (1SG), *Ø-a-nermite* (2SG), *Ø-Ø-jermite* / *Ø-Ø-jirmite* (3), *n-a-nermite* (REFL)
 “back” (anatomy)

b. CH *t-i-jem* (1SG), *Ø-a-nem* (2SG), *Ø-i-jem* (3),

j-i-jem (1PL.INCL), *o-j-i-jem* (1PL.EXCL), *Ø-a-nem-lo* (2PL), *o-jem* (3PL) “to wait”

c. CH *p-i-jẽrpta* (1SG), *Ø-a-nerpta* (2SG), *Ø-Ø-nerpta* (3), *n-a-nerpta* (REFL) “shirt, dress”

To sum up, AY and CH nouns may have an irregular vocalic pattern, as mostly observed in *d*-nouns, whereby the 1SG- and the 3rd-vowel differ. Some of these irregularities must derive from Proto-Zamucoan. Furthermore, the CH root allomorphy suggests that the REFL must have exerted an attraction on the 3rd-person.

5.5 Radical nouns (Ø – Ø – ROOT)

The radical lexemes form the most irregular class in both nouns and verbs. In §4.4 (ex. 37) we claimed that the original first root-vowel of CH radical nouns (/a/ in ex. 67, /o/ in ex. 68-69) is only preserved in the 3rd-person and reduces to /i/ (or deletes) elsewhere. This is confirmed by comparison with the sister languages, in which one and the same first root-vowel shows up in the whole paradigm. Thus, while the 3rd-person of Zamucoan radical nouns can be innovative in the root-initial consonant, in CH this person may be the most conservative as far as the first root-vowel is concerned. As for the 1SG-vowel of radical nouns, it is generally high in Zamucoan, so that its occasional change into /o/ in CH (68-69) must be due to attraction by the original first root-vowel (§4.4). In addition, in Zamucoan word-initial voiced bilabial stops can undergo

fortition in the 3rd-person of both nouns and verbs (68-70; see (7c) for a similar example of root-initial fortition in OZ):

- (67) OZ *j-i-manai*(*tie*) (1SG), \emptyset - \emptyset -*manai* (3) “hand”
 AY *j-i-ṃanaj* (1SG), *b-a-ṃanaj* (2SG), \emptyset - \emptyset -*ṃanaj* (3), *d-a-ṃanaj* (REFL) “hand”
 CH *p-i-ṃita* / *p-o-ṃita* (1SG), \emptyset -*a-ṃita* (2SG), \emptyset - \emptyset -*ṃata* (3), *n-a-ṃita* (REFL) “hand”
- (68) OZ *j-i-bosodoe* (1SG) “food”
 AY *j-i-boti* (1SG), *b-a-boti* (2SG), \emptyset - \emptyset -*poti* (3), *d-a-poti* (REFL) “food”
 CH *p-o-biēt* (1SG), \emptyset -*a-biēt* (2SG), \emptyset - \emptyset -*poēt* (3), *d-a-biēt* (REFL) “food”
- (69) AY *j-i-mataraj* (1SG), *b-a-mataraj* (2SG), \emptyset - \emptyset -*pātaraj* (3), *d-a-mataraj* (REFL) “tooth”
 CH *p-o-bitēt* (1SG), \emptyset -*a-bitēt* (2SG), \emptyset - \emptyset -*potēt* (3), *l-/d-a-bitēt* (REFL) “tooth” (plural: \emptyset - \emptyset -*potēre*)
- (70) AY *j-i-bo* (1SG), *b-a-bo* (2SG), \emptyset - \emptyset -*po* (3), *j-i-bo-go* (1PL), *wak-a-bo-jo* (2PL) “to cry”
 CH *t-o-bitā* (1SG), \emptyset -*a-bitā* (2SG), \emptyset - \emptyset -*pota* (3),
j-o-bitā (1PL.INCL), *o-j-o-bitā* (1PL.EXCL), *a-bitī-lo* (2PL), *o-pota* (3PL) “to envy, to lust after”

In CH there are comparatively fewer radical nouns than in the sister languages, possibly owing to change of inflectional class. A case in point is (71), where the AY first root-vowel /o/ is identical to the CH thematic vowel, suggesting shift from radical to thematic inflectional class (see fn. 31 for the phonetic correspondence):

- (71) AY *j-i-hogat* (1SG), *b-a-hogat* (2SG), \emptyset - \emptyset -*hogat* (3), *d-a-hogat* (REFL) “place”
 CH *p-o-witē* (1SG), \emptyset -*o-witē* / \emptyset -*a-witē* (2SG), \emptyset -*o-witē* (3), *d-o-witē* / *d-a-witē* (REFL) “place”

A counterexample is (72), presenting an AY radical noun paired with a CH thematic one, with the original root-initial consonant /j/ of both languages turned into /tɕ/ in the AY 3rd-person. The same can be observed in ex. (53, §5.2). In the verb inflection of Zamucoan (see ex. 73), we find the same root-initial alternation /j/ ~ /tɕ/ (or /ts/ in CH), with the latter restricted to the 3rd-person (more precisely, 3.IRLS in OZ and CH). This alternation in the verb morphology of the whole family must be an archaic feature. In Ciucci & Bertinetto (2015) two hypotheses were formulated: (i) /j/ turns into /tɕ/ owing to word-initial fortition; (ii) the 3(.IRLS) person of such verbs originally consisted of the *d*-prefix followed by thematic /i/ and root-initial /j/, with /tɕ/ stemming from spontaneous affrication of the sequence /dij/. The latter hypothesis provides a more economical explanation in verb inflection, but its application to possessive inflection presupposes that AY *teagueo* in (72) originally had the *d*-prefix (due to attraction by the REFL) and the 3rd-vowel /i/. Its CH cognate *ijuwo* confirms that the 3rd-vowel was indeed /i/ but, being thematic, does not offer any cue as for the possible existence of a prefix:

- (72) AY *j-i-jagueo* (1SG), *b-a-jagueo* (2SG), \emptyset - \emptyset -*teagueo* (3), *d-a-jagueo* (REFL) “hunger”
 CH *p-i-juwo* (1SG), \emptyset -*a-luwo* (2SG), \emptyset -*i-juwo* (3), *d-a-luwo* (REFL) “hunger”
- (73) OZ RLS: *a-i-jage* (1SG), *d-a-jage* (2SG), \emptyset -*i-jage* (3),
a-i-jage-go (1PL), *d-a-jage-o* (2PL);
 IRLS: *j-i-jage* (1SG), \emptyset - \emptyset -*teage* (3),
j-i-jage-go (1PL), \emptyset -*a-jage-o* (2PL) “to stand up”
 AY *j-i-jage* (1SG), *b-a-jage* (2SG), \emptyset - \emptyset -*teage* (3),
j-i-jage-go (1PL), *wak-a-jage-jo* (2PL) “to stand up”

CH *t-i-jehet* / *tik-i-jehet* / *tik-i-jehet* (1SG), *Ø-a-lehet* (2SG), *Ø-i-jehet* (3.RLS),
j-i-jehet (1PL.INCL), *o-j-i-jehet* (1PL.EXCL), *Ø-a-lehet(i)-lo* (2PL), *o-jehet* (3PL.IRLS) //
Ø-Ø-tsehet (3.IRLS) “to stand, to stand up”

5.6 Loss of possessive inflection

As noted in §4.1, possessive inflection is no longer productive in CH, as shown by the fact that the CH counterparts of many OZ/AY possessable nouns have no possessive inflection. In some cases, the surviving form is a relic of what used to be the GF, and this in turn contributes to the scarcity of GFs in the language. We distinguish a number of situations.

First, a CH non-possessable noun can correspond to an OZ/AY GF, either expressed by the bare root as in (74), or by the *dV**k*-prefix (§4.5) as in (75):

- (74) a. AY *Ø-u-guteaj* (3), *Ø-Ø-kuteaj* (GF) “thing” ~ CH *kuteit* “thing (NPS)”
 b. AY *Ø-i-bora* (3), *Ø-Ø-bora* (GF) “article of clothing” ~ CH *bortiet* “clothing (NPS)”
 c. OZ *Ø-u-rahec* (3), *Ø-Ø-dahec* (GF) “path” ~ AY *Ø-ü-rahej* (3), *Ø-Ø-dahej* (GF) “path” ~
 CH *dehet* “path (NPS)”
 d. AY *Ø-u-burut* (3), *Ø-Ø-purut* (GF) “shade” ~ CH *pu:rtē* “shade, shadow (NPS)”

- (75) AY *Ø-o-de* (3), *duk-o-de* (GF) “tomb, grave” ~ CH *dukuta* “cemetery (NPS)”

Second and third, the CH non-possessable noun can correspond to the AY root, as distinguished from the GF (76), or can derive from the original 3rd-person, as in (77; see also ex. 84, §6.3). In the fourth and last situation, we detect traces of prefixation in the CH non-possessable noun, such as a relic of the prefix *d-* in (78), or /*j*/ in (80, §6.1):

- (76) AY *Ø-i-daj* (3), *g-i-daj* (GF) “village” ~ CH *dit* / *dut* (NPS) “village”

- (77) a. AY *j-u-ɲori* (3) “killer; winner in a game” ~ CH *juwĩrtē* (NPS) “killer”
 b. AY *Ø-a-sõre* (3) “lance” ~ CH *asõ,µa* (NPS) “lance”

- (78) AY *Ø-u-ʔakepie* (3), *d-a-ʔakepie* (REFL) “outhouse, toilet” ~ CH *ditēpita* (NPS) “outhouse, bathroom, toilet”

The noun in (79) is the only case so far observed in which an AY non-possessable noun corresponds to a CH possessable one:

- (79) AY *bisit* (NPS) “medicine” ~ CH *Ø-i-miet* (3) “medicine”

6. Reconstructing the Proto-Zamucoan possessive inflection

We now propose a reconstruction of Proto-Zamucoan possessive inflection. Table 8 offers a synoptic view, anticipating a plausible reconstruction of Proto-Zamucoan whose forms are justified in the following subsections, respectively devoted to: 1SG (§6.1), 2SG (§6.2), 3rd-person (§6.3), REFL (§6.4), 1PL and 2PL (§6.5), and GF (§6.6). Subsequently, the Proto-Zamucoan verb and possessive inflection are compared (§6.7).

	<i>Old Zamuco</i>	<i>Ayoreo</i>	<i>Chamacoco</i>	<i>Proto-Zamucoan</i>
1SG	<i>j</i> -V-root <i>tē</i> -V-root <i>s</i> -V-root	<i>j</i> -V-root - -	- - -	* <i>j</i> -V-root (§6.1) - -

	-	-	<i>p</i> -V-root	-
2SG	∅- <i>a</i> /V-root	<i>b</i> - <i>a</i> /V-root	∅- <i>a/e</i> /V-root	* <i>a</i> -V-root (§6.2)
3	<i>d</i> -V-root <i>g</i> -V-root - - - ∅-V-root ∅-∅- <i>root</i>	<i>d</i> -V-root <i>g</i> -V-root <i>k</i> -V-root <i>j</i> -V-root <i>p</i> -V-root ∅-V-root ∅-∅- <i>root</i>	<i>d</i> -V-root <i>j</i> -V-root, <i>w</i> -V-root <i>k</i> -V-root <i>j</i> -V-root - ∅-V-root ∅-∅- <i>root</i>	* <i>d</i> -V-root * <i>g</i> -V-root (§6.3) - (* <i>j</i> -V-root ?) - *∅-V-root *∅-∅- <i>root</i>
REFL	<i>d</i> - <i>a</i> /V-root	<i>d</i> - <i>a</i> /V-root	<i>d</i> - <i>a/e</i> /V-root	* <i>da</i> -V-root (§6.4)
1PL	<i>aj</i> -V-root <i>as</i> -V-root -	- - <i>jok</i> -V-root	- (see §6.5) -	* <i>aj</i> -V-root * <i>as</i> -V-root [rare] (§6.5) -
2PL	<i>aj</i> -V-root <i>as</i> -V-root -	- - <i>wak</i> - <i>a</i> /V-root	- - -	? (§6.5)
GF	<i>p</i> -V-root <i>d</i> -V-root - - - ∅-∅- <i>root</i> -	<i>p</i> -V-root - <i>dVk</i> -V-root <i>k</i> -V-root <i>g</i> -V-root ∅-∅- <i>root</i> -	- <i>d</i> -V-root <i>dVk</i> -V-root <i>k</i> -V-root - ∅-∅- <i>root</i> o-[3 rd -person]	* <i>p</i> -V-root * <i>d</i> -V-root (§6.6) * <i>dVk</i> -V-root * <i>k</i> -V-root - *∅-∅- <i>root</i> -

Table 8. Possessive inflection in Old Zamuco, Ayoreo, Chamacoco and Proto-Zamucoan.

6.1 First singular

The 1SG-prefix *j*- is a possessive marker in both OZ and AY, where it also is a 1.IRLS-prefix in verb morphology (see Table 2 and Table 4). By contrast, in CH it is restricted to the function of verbal 1PL.INCL-prefix (Table 6), although it presumably used to act as 1st-person marker for both singular and plural before the CH clusivity split occurred (see Ciucci & Bertinetto 2015). The *j*-prefix is also present in the 1SG free pronoun of Zamucoan: OZ/AY (*u*)*ju* and CH *jok* (Tables 2, 4, 6). This convergence of possessive inflection with pronominal and verbal morphology suggests that Proto-Zamucoan nouns must have had the 1SG possessive prefix **j*-. In CH this was subsequently replaced by *p*-, the most frequent GF marker of OZ and AY. This explains the rarity of GFs in CH.

Some fossilized *j*-forms can be detected in CH, e.g. in some non-possessable nouns stemming from inflected forms, such as *josĩrsĩrte* in (80), where initial /*j*/ corresponds to the AY (and Proto-Zamucoan) 1SG-prefix:

- (80) AY *j-o-sōrasōri* (1SG), ∅-*o-sōrasōri* (3) “one who is merciful, compassionate”
CH *josĩrsĩrte* “liberator, merciful person (NPS)”

Another example – CH <ioté> “mother” – was reported in the first half of the 19th century by the Austrian explorer Johann Natterer (Adelaar, pers. comm.; see also Adelaar & Brijnen 2014). This word is unknown to present-day CH speakers and does not appear in the data collected at the end of the 19th century by Boggiani (1894: 101). This form should be interpreted as *j-o-te*, with the irregular inflectional vowel /*o*/ documented in the 1SG of the same OZ and CH word (cf. ∅-*o-te* “mother.1SG”; ex. 57, §5.3), while *j*- is a remnant of the original prefix.²⁸

²⁸ The existence of an old 1SG-marker in *jote* does not contradict the fact that *ote* (found in both OZ and CH) can be traced back to Proto-Zamucoan, because other kinship terms equally present the alternation between a prefixed and a non-prefixed 1SG form (see ex. 57-58, §5.3).

A motivation of the CH substitution of 1SG *j-* by the GF prefix *p-* might lie in the process described by Mithun (1991) and Chafe (1990), whereby indefinite/defocusing person markers can evolve into 1PL-markers.²⁹ This has also occurred in French and Italian with, respectively, *on* and “impersonal *si*” as used for 1PL reference (cf. *on mange / si mangia* as a colloquial equivalent of “we eat”). The CH situation, though, presents a further step, namely transfer of the innovative 1PL-marker (as derived from the GF) to the 1SG. This finds, however, a parallel in free pronouns, where the original 1PL free pronoun *jok* replaced the 1SG pronoun (see Tables 6 and 10). The same transfer from 1PL to 1SG occurred in verbal morphology, although the prefix *tVk-* apparently differs from the pronoun *jok* (see Table 6). Ciucci & Bertinetto (2015) provided the supporting evidence for this particular change. Thus, CH shows in both nominal and verbal morphology the replacement of the 1SG-prefix **j-*.

OZ also exhibits the 1SG-prefixes *tε-* and *s-*, not found in the nominal morphology of the sister languages. These may be archaic, considering that OZ is the morphologically most conservative language (Ciucci 2016), but we prefer to exclude them from reconstruction, although *tε-* is also found in OZ verb morphology (see Table 2), where it can indeed be traced back to Proto-Zamucoan (Ciucci & Bertinetto 2015). As for *s-*, it might possibly stem from contact with Chiquitano (a.k.a. Besiro), the dominant language in the Jesuit missions where the Zamuco speakers – whose language was equally described by Chomé – were present. Chiquitano was a contact language for the Northern Zamucoan tribes much before the Jesuit period, and the data from the Jesuit grammars indicate that some possessable nouns and some verbs belonging, respectively, to the Chiquitano fifth declension and fifth conjugation, marked the 1SG by means of the *ts-* prefix (Adam & Henry 1880: 11, 34; Falkinger & Tomichá 2012: 22, 32-33). Since /ts/ is not part of the phonological inventory of OZ, it might plausibly have turned into /s/ by deaffrication.

6.2 Second singular

Zamucoan shows the 2SG-vowel /a/ replacing the high thematic vowels. In CH this vowel often turned into /e/, obeying a frequent phonological change (§4.1). As shown in §5.1, there are clear hints that **a/* used to be (part of) the 2SG-prefix in all three languages, as indicated by nouns where /a/ (or /e/) is preserved before a high thematic vowel, instead of replacing it (ex. 47-48). This suggests to assign **a/* to Proto-Zamucoan. The same phenomenon is found in verb inflection, where **a/* used to be the Proto-Zamucoan 2(.IRLS) prefix (§6.7, Table 10). By contrast, with non-high thematic vowels the opposite occurred, namely 2SG **a/* was itself replaced, leaving no relics.

The AY 2SG-prefix *b-* is innovative and either derives from the labial feature of the 2SG pronoun (*u)wa* or, most likely, is a copy of the 2SG.RLS prefix of the verb conjugation (see Table 4), stemming from Proto-Zamucoan **ba-* (see Table 10).

6.3 The third person

The examples above show frequent interlinguistic correspondences between thematic (the most conspicuous class), prefixal and radical nouns, indicating substantial diachronic stability despite occasional inflectional class shifts (§5.3 and §5.5). In this subsection, the class of prefixal nouns are dealt with.

The 3rd-prefix *d-* is found in all three languages and most probably existed in Proto-Zamucoan. As noted (see §3.3, §4.3, §5.3), most *d-*nouns are kinship terms and share a number of irregularities, partly caused by assimilation of the 3rd-person to the REFL, which probably already occurred in Proto-Zamucoan.

The AY 3rd-prefix *g-* is absent in CH, and indeed this phoneme is lacking in the CH phonological inventory. The CH counterpart of this prefix is \emptyset as in (81), or /j/ as in (82):³⁰

²⁹ As Mithun (1993) observes, indefinite pronouns can also turn into third person pronouns (see §6.6). See also Cristofaro (2013). For South American languages, Aikhenvald (forthcoming) shows that in some Arawak languages the impersonal marker **pa-* developed into a marker for the first person plural (inclusive) or the third person.

³⁰ The same applies to the nasalized counterpart of AY /g/, i.e. /ŋ/, which corresponds to \emptyset in CH (see ex. 59).

(81) AY *j-a-tëit* (1SG), *b-a-tëit* (2SG), *g-a-tëit* (3), *d-a-tëit* (REFL) “pet, domesticated animal, vehicle”
CH *p-e-tëit* (1SG), *Ø-e-tëit* (2SG), *Ø-e-tëit* (3), *d-e-tëit* (REFL) “pet, domesticated animal”³¹

(82) AY *j-a-ñesðri* (1SG), *b-a-ñesðri* (2SG), *g-a-ñesðri* (3), *d-a-ñesðri* (REFL) “owner, master, possessor”
CH *p-i-nsĩrte* (1SG), *Ø-e-nsĩrte* (2SG), *j-i-nsĩrte* (3), *n-e-nsĩrte* (REFL) “master, owner, employer”³²

The latter case might indicate that a */g/-like prefix might have existed in Proto-Zamucoan. However, CH /j/ does not necessarily derive from */g/. Consider, for instance, the rare AY 3rd-prefix *j-* in (83-84), where the two cognate words are obtained in a parallel way in both languages via two pairs of mutually equivalent derivational suffixes: AY *-sðri* ~ CH *-sĩrte* in (83), and AY *-ñori* ~ CH *-wĩrte* in (84). The AY nouns, characterized by irregular vocalic pattern, share the 3rd-prefix *j-* (§3.2); by contrast, the CH counterpart in (83) is a thematic noun, while the word in (84), although turned into a non-possessable noun, preserves a trace of the /j/ prefix. The latter conclusion is enhanced by the presence of /u/ in CH *juwĩrte* (84), to be compared with AY *juñori*: this is an unmistakable sign of an original 3rd-person, despite subsequent loss of the possessive inflection.³³ It is thus possible that the small group of AY nouns with 3rd-person *j-* may have been present in Proto-Zamucoan:

(83) AY *j-i-sðri* (1SG), *b-e-sðri* (2SG), *j-u-sðri* (3), *d-e-sðri* (REFL) “killer; winner in a game”
CH *p-i-rsĩrte* (1SG), *Ø-e-rsĩrte* (2SG), *Ø-i-rsĩrte* (3), *d-e-rsĩrte* (REFL) “winner”

(84) AY *j-i-ñori* (1SG), *b-e-ñori* (2SG), *j-u-ñori* (3), *d-e-ñori* (REFL) “killer; winner in a game”
CH *juwĩrte* (NPS) “killer”

The 3rd-person prefix *k-* is absent in OZ and is rarely found in both AY and CH (where this prefix never shows up in cognate pairs), hence it might be an independent innovation in both languages. For instance, the CH 3rd-prefix *k-* in (85) probably derives from reinterpretation of the root-initial velar, as shown by the AY/CH cognates (*igatade* ~ *k-e-tita*; recall that in CH the velar stop has no voicing contrast). The same process occurred in some CH prefixal verbs which used to be radical (Ciucci & Bertinetto 2015):

(85) AY *j-i-gatade* (1SG), *b-a-gatade* (2SG), *Ø-i-gatade* (3), *d-a-gatade* (REFL), *Ø-Ø-katade* (GF) “knee”
CH *p-i-tita* (1SG), *Ø-e-tita* (2SG), *k-e-tita* (3), *d-e-tita* (REFL) “knee”

Another problematic 3rd-prefix is *w-*, only found in CH. Since we observe phonological correspondences between AY /g/ and CH /w/ (see ex. 71 and fn. 31), one might hypothesize that CH *w-* stems from the *g-prefix (§6.1). However, no AY and CH cognates showing the prefix correspondence *g-* ~ *w-* has been found. CH *w-* in (86), just like *k-* in (85), seems to derive from root erosion plus reanalysis of the first root-consonant (AY *goro* ~ CH *w-o-łła*):

(86) AY *j-o-goro* (1SG), *b-o-goro* (2SG), *Ø-o-goro* (3), *d-o-goro* (REFL) “hip”
CH *p-o-łła* (1SG), *Ø-o-łła* (2SG), *w-o-łła* (3), *l-o-łła* (REFL) “hip”

AY also exhibits the rare 3rd-person marker *p-*, to be explained as a former GF.

³¹ The phonological change in (81) is found elsewhere, as in CH *Ø-i-tite* “pillow” corresponding to AY *Ø-u-gutat*, with deletion of the root-initial syllable. By contrast, in CH *Ø-o-wite* “place”, corresponding to AY *Ø-Ø-hogat* (see ex. 71, §5.5), /g/ turned into /w/, with reinterpretation of the first root-vowel as thematic vowel.

³² As noted in §5.1, the thematic vowel /i/ in this noun results from vowel reduction.

³³ The irregular vocalic pattern of the AY word is the same as in *juj* “bodily presence; victim” (ex. 15), which is in fact the base on which the derivative *juñori* is built.

6.4 The reflexive person

The REFL *d*-prefix is attested in the whole family, where 2SG and REFL share the same theme, even when this differs from the rest of the paradigm (§1.2). This occurs not just when the 2SG and REFL-vowel is /a/ (or, in CH, /e/) owing to thematic vowel replacement, but even with root allomorphy (§5.2). The presence vs. absence of /a/ in the REFL prefix depends, just as with the 2nd-person, on the thematic vowel of the individual noun. Having shown evidence that */a/ was the original 2SG-prefix (§1.2, §5.1), the same observation extends to Proto-Zamucoan REFL *da-.

6.5 First and second plural persons

The OZ 1PL and 2PL share the same prefix *aj*-, while CH has lost the 1PL and 2PL inflection, and AY has replaced the previous markers with the independent pronouns. At first sight, CH seems to have adopted the same solution as AY, as shown by Tables 3 and 5, but in fact the difference emerges as soon as one considers that: (i) the use of the independent plural pronouns is not compulsory in CH, whereas they have been turned into obligatory affixes in AY; (ii) the AY 1PL- and 2PL-prefixes are directly attached to the theme even in the case of radical nouns (where the 3rd-person, namely the citation form, presents no thematic vowel). It is worth pointing out that the adoption of the independent pronouns as plural persons prefixes in AY (in both nouns and verbs) must have occurred after the systematic application of the vowel replacement/deletion process in the 2SG/PL and REFL persons (§1.2), because the inflectional vowel that follows these innovative plural affixes is the expected one in both 1PL and 2PL.

The convergence of AY and CH might suggest that the use of plural pronouns as possessive markers was a Proto-Zamucoan feature. However, on top of the non-obligatory use of such pronouns in CH, some old studies provide hints that this language must have had a true 1PL-prefix. Since the relevant historical sources do not provide evidence of clusivity – which, as shown in Ciucci & Bertinetto (2015) is a CH innovation – this feature is neglected here. Baldus (1932: 393) reports the forms *aset* “mother.1PL” and *al(d)e* “father.1PL”. Sušnik (1972: 22), in turn, reports *asit* “mother.1PL”. *Aset* corresponds to the irregular OZ *asote* “mother.1PL”, characterized by the irregular 1PL-prefix *as*- (see §2.1 and ex. 57, §5.3). This suggests that in Proto-Zamucoan the 1PL of “mother” displayed the prefix *as-. The most frequent 1PL-prefix in OZ is, however, *aj*-, whose CH counterpart is *al*- in *al(d)e* “father.1PL”. The correspondence OZ /j/ ~ CH /l/ is easy to explain, owing to the CH alternation /j/ ~ /l/ (§4.2), where /j/ turns into /l/ when preceded by /a/ (§5.2). A related CH form reported by Baldus (1932: 392) is <áirum-me> “hands.1PL”, to be interpreted as *aj-r-u-me*,³⁴ with the original 1PL-prefix *aj*-, the inflectional vowel /u/ and the linking consonant /r/ to avoid the formation of a triphthong.

To sum up, the marginally attested CH 1PL-prefixes *al*- and *aj*- suggest that the 1PL-prefix *aj- – also found in OZ – can be traced back to Proto-Zamucoan. As for *as*-, it seems to be an OZ allomorph of the 1PL in nouns exhibiting the 1SG-marker *s*- (§6.1), but since it can also be detected in CH, we argue that it too might have existed in Proto-Zamucoan. On the other hand, the absence of AY relics relating to these plural affixes indicates that their loss must have occurred at a fairly early stage.³⁵

Finally, the coincidence of 1PL and 2PL, as found in OZ, is typologically quite puzzling and one has to hesitate to project this feature back onto Proto-Zamucoan. Chomé reports one noun (“mother”; §5.3, ex. 57) where 1PL and 2PL diverge (*asote* vs. *ajate*), but this is a highly irregular word, since these two forms also show an unpredictable inflectional vowel contrast, with 1SG/PL /o/ ~ 2SG/PL /a/. It is thus impossible to

³⁴ In Zamucoan, /i/ before or after a vowel is often ambiguous between vowel and semivowel. Here the root *-me* differs from that of ex. (67) because Baldus provides the plural rather than the singular, which is the form regularly reported in this paper.

³⁵ AY presents a possible relic of the Proto-Zamucoan prefix *as- in the word *asute* “chief”, very similar to *asote* / *aset*, the archaic OZ and CH form of “mother.1PL”. If this is so, we surmise that a 1PL form was reinterpreted as the word’s theme. AY *asute*, quite exceptionally, is morphologically feminine even though it only refers to males, and as a matter of fact it is not related to any OZ word for “chief / leader”. One might thus cautiously propose that, in a possibly matriarchal ancient society, the word for “mother” was also used with this nuance.

draw any solid conclusion as for the possible existence of an early stage at which 1PL and 2PL had a different marker (see also fn. 14).³⁶ Note however that, as Mithun (1991) observes, in North American languages exhibiting person affixes the 1 and 2 persons generally morphologized before the 3, and number grammaticized later than person. This can help one explain, on the one hand, why the OZ/AY possessive inflection has 1PL/2PL but no 3PL, and suggests, on the other hand, that the disappearance of the original 1PL/2PL in AY and CH could reflect a possible instability of these affixes in Proto-Zamucoan, due to later grammaticization of number. Support for a later creation of the 3rd-person affix, as opposed to the deictic persons, derives from the relatively small amount of prefixal nouns.

6.6 The generic form

The 3rd-person and GF allomorphs are summed up in the following table, with the proposed Proto-Zamucoan reconstruction:

	OZ		AY		CH		Proto-Zamucoan	
	3 rd - person	GF	3 rd - person	GF	3 rd - person	GF	3 rd - person	GF
<i>p-</i>		√	√	√				√
<i>dVk-</i>				√		√		√
<i>d-</i>	√	√	√		√	√	√	√
<i>g-</i>	√	√	√	√			√	
<i>k-</i>			√	√	√	√		√
<i>j-</i>			√		√			
<i>w-</i>					√			
thematic form	√		√		√		√	
bare root	√	√	√	√	√	√	√	√
<i>o-</i> (pre-prefix)						√		

Table 9. Expression of 3rd-person and GF in Zamucoan.

The GF allomorphs are lexically idiosyncratic. The *p*-prefix is by far the most common in OZ and AY, while it underwent reinterpretation in CH, where it turned into the 1SG-prefix (§6.1). Considering that the GF is now exceedingly rare in CH, one can claim that the reinterpretation of the *p*-prefix caused the decay of this inflection, while **p*- can be proposed as the predominant GF marker in Proto-Zamucoan. Some of the other allomorphs are also found as 3rd-person prefixes, and it is thus likely that one form expanded at the expense of the other, as observed for AY *p*- in §3.5. As Mithun (1993: 344) notes: “cross-linguistically, it is not unusual for indefinite pronouns to be used for specific reference, and even to evolve into general referential pronouns, particularly in languages originally lacking third person pronominal forms” (see also Mithun 1991). Nevertheless, since (precisely excepting *p*-) the frequency of these prefixes is far from overwhelming as either 3rd-person or GF marker, it is difficult to establish the direction of change.

The *dVk*-prefix is found in both AY (§3.5) and CH (§4.5). Since these two languages split long ago (§1.1), this marker can be reconstructed for Proto-Zamucoan despite its absence in OZ.

³⁶ According to Sušnik (1957: 101), in the CH variety spoken in Puerto Leda there was a 1PL.INCL prefix *j-*. Although the reliability of this author is doubtful when it comes to grammatical observations, we surmise that *j-* could be due to the influence of the verbal 1PL.INCL prefix *j-*, or else to extension of the original possessive 1SG-prefix *j-* to the plural (interestingly, in CH verb inflection *j-* originally marked both 1SG and 1PL, before specializing as 1PL.INCL marker; see Ciucci & Bertinetto 2015). A reviewer suggests that it might be connected with OZ 1/2PL possessive marker *aj-*.

Similarly, the *d*-prefix is found in OZ (§2.2) and CH (§4.5). The only trace of it in AY is found in (87), where one observes a small phonological difference in the root, opposing the GF to the possessed forms.³⁷

The *g*-allomorph, by contrast, is only found in the OZ / AY branch (88) and one can doubt whether it stems from Proto-Zamucoan. However, as mentioned in §6.3, /*g*/ is not part of the CH phonemic inventory. CH exhibits the GF *k*-allomorph, but this is probably unrelated to *g*-, since AY /*g*/ mostly corresponds to CH /*j* w/ or deletes (§6.3). Yet, the correspondence AY /*g*/ ~ CH Ø-morpheme (ex. 81) might justify including **g*- among the Proto-Zamucoan GF allomorphs. The *k*-allomorph, by contrast, is a weak candidate for reconstruction, because it is only found once in AY (ex. 23d), in a word with no corresponding GF in CH (similar considerations apply to the CH 3rd-prefix *k*-; ex. 85, §6.3):

(87) OZ Ø-*u-hos* (3) ~ *d-u-kos* (GF) “disease”

AY Ø-*u-hosi* (3) “wound; sore, sickness” ~ *d-u-kosi* (GF) “fever; sickness; wound”

(88) OZ Ø-*i-geda* (3) ~ *g-i-geda* (GF) “house”

AY Ø-*i-giñaj* (3) ~ *g-i-giñaj* (GF) “house”

Zamucoan show radical GFs, i.e. forms coinciding with the bare root (89). In §3.5 we noted that these occurrences are either due to phonetic erosion deleting the prefix and the thematic vowel, or to lexical borrowing, i.e. bare-root items interpreted as generic forms. In the latter case, a thematic 3rd-person can be formed by adding the default vowel /*i*/. Although this process is still productive in AY with Spanish loanwords (ex. 26), in (89) the presence of thematic /*u*/ and the fortition /*r*/ → /*d*/ support the former hypothesis for reasons detailed in §3.5 (the same kind of fortition is also found in verb inflection, see (90)):

(89) OZ Ø-*u-rahek* (3) ~ Ø-Ø-*dahek* (GF) “path”

AY Ø-*ũ-rahej* (3) ~ Ø-Ø-*dahej* (GF) “path”

CH *dehet* (NPS) “path”

(90) AY *n-i-rĩ* (1SG), *m-a-rĩ* (2SG), Ø-Ø-*di* (3), *n-i-rĩ-ño* (1PL), *wak-a-rĩ-ño* (2PL) “to arrive”

Finally, the CH GF pre-prefix *o*- is an idiosyncratic innovation presupposing the following steps: (i) reinterpretation of the most frequent GF allomorph (*p*-prefix) as 1SG, leaving a gap in the system (§6.1); (ii) introduction of a new construction, consisting of the 3PL free pronoun *ōr* (or possibly *os*, reduced form of *oso* “people”), as preceding the 3rd-person, to surrogate the GF function (§4.5); (iii) inclusion of *ōr/os* into the noun, creating a new inflected form in analogy with the 3PL of verb inflection, another CH innovation stemming from the analogous inclusion of *ōr/os* into the 3rd-person (see Table 6).

6.7 Verbal and possessive inflection in Proto-Zamucoan

We repeatedly mentioned structural and morphological similarities between the Zamucoan verb and possessive inflection. Table 10 presents a Proto-Zamucoan synoptic comparison, drawing on Ciucci & Bertinetto (2015). The expression of the possessor tends to converge with the person markers of the irrealis mood, with special regard to the 1SG-prefix *j*-, the 2SG morphology, and the 3rd-person prefix *d*-. The latter phoneme is also to be found in the REFL prefix *da*-; indeed, the possessive *d*- and *da*-prefixes might have the same origin (Ciucci 2014: 22-23). By contrast, there is no significant overlap between the possessive and realis mood inflection (ignoring the prefixless thematic and radical 3rd-person). Although nouns and verbs

³⁷ Although, according to Higham et al. (2000), AY *uhosi* and *dukosi* in (87) present a slight meaning contrast, they must nevertheless be part of the same inflectional paradigm. This semantic difference is not reported by Kelm (1964: 495); the translation takes into account data from Barrios et al. (1995).

have the same types of inflectional class (prefixal, thematic, radical), in Zamucoan verb morphology is more complex than nominal morphology, as illustrated in Table 11. Besides, the most frequent verbal 3(RLS) prefixes (*tɛ-*, *ts-* and *t-*) are not used as 3rd-person possessive markers. This ensures a sharp division of labour between the verbal 3(RLS) and the nominal 3rd-person.

As for the overlap between the prefixal system and the free pronouns, Table 10 highlights 1SG/PL /j/ and 2SG/PL /a/. The 3rd-person does not matter here, since the 3SG pronouns are (with the single exception of CH *ir(e)*) mere demonstratives filling a hole in the system, and the 3PL-person is missing in the verbal and possessive inflection of Proto-Zamucoan. The later formation of the 3rd-person morphology explains the multifarious nature of its allomorphs.

	<i>Proto-Zamucoan verb inflection</i>		<i>Proto-Zamucoan possessive inflection</i>	<i>Proto-Zamucoan free pronouns</i>
	REALIS	IRREALIS		
1SG	*a-V-ROOT	*j-V-ROOT *tɛ-V-ROOT	*j-V-root	*(u)jV _{back}
2SG	*ba-V-ROOT (*da-V-ROOT)	*a-V-ROOT	*a-V-root	*(u)wa
3	*tɛ-V-ROOT *t-V-ROOT *∅-V-ROOT *∅-∅-ROOT	*d-V-ROOT *t-V-ROOT – *∅-∅-ROOT	*d-V-root *g-V-root, (*j-V-root ?) *∅-V-root *∅-∅-root	[*wite (M)] [*wate (F)] –
REFL	–	–	*da-V-root	–
1PL	*a-V-ROOT-ko –	*j-V-ROOT-ko *tɛ-V-ROOT-ko	*aj-V-root *as-V-root [rare] (§6.5)	*(u)jV _{back} k –
2PL	*ba-V-ROOT-(j)o (*da-V-ROOT-(j)o)	*a-V-ROOT-(j)o	?	*(u)wak
3PL	–	–	–	*ore

Table 10. Reconstructed Proto-Zamucoan verbal and possessive inflection, as compared to free pronouns.

	FIRST MACRO-CLASS PREFIXAL VERBS				SECOND MACRO-CLASS NON-PREFIXAL	
	FIRST CLASS		SECOND CLASS		THIRD CLASS	FOURTH CLASS
OLD ZAMUCO	<i>tɛ</i> -verbs		<i>t</i> -verbs		Thematic verbs	Radical verbs
AYOREO	<i>tɛ</i> -verbs		<i>t</i> -verbs		Thematic verbs	Radical verbs
CHAMACOCO	1 st subclass: <i>tɛ</i> -verbs	2 nd subclass: <i>ts</i> -verbs	3 rd subclass: <i>t</i> -verbs	4 th subclass: <i>d</i> -verbs	Thematic verbs (<i>i-</i> , <i>u-</i> , <i>i-</i>)	Radical verbs
PROTO-ZAMUCOAN	*tɛ-verbs		*t-verbs		*Thematic verbs	*Radical verbs

Table 11. Verb classes in the Zamucoan languages, according to 3rd-person inflections.

7. Conclusions

We proposed a reconstruction of Proto-Zamucoan possessive morphology with data from the only three documented languages: †OZ, AY and CH. OZ emerged as the most conservative language, while both AY and CH showed innovative tendencies, some in complementary distribution. The similarities and differences may be summed up as follows:

- i. The Zamucoan languages show some degree of stability in the 3rd-person and the REFL (§6.3-6.4). The presence of the latter, as contrasted with the other Chaco languages, is a distinctive Zamucoan feature, although we have reasons to surmise that the split between 3rd-person and REFL was due to language contact (Ciucci 2014).
- ii. In 1SG and 2SG, AY and CH show complementary distribution of conservative features: CH has innovated the former (§6.1), AY the latter (§6.2). The CH 1SG stems from reinterpretation of the GF, only marginally replaced by the new GF pre-prefix *o-* (§6.6).
- iii. In 1PL and 2PL, both AY and CH are innovative, since they make use of the corresponding independent pronouns, except that AY has turned them into obligatory prefixes (§6.5). However, some CH 1PL relics suggest that the OZ 1PL-prefixes may be projected back onto Proto-Zamucoan (§6.5). As for the 2PL, one can only count on the OZ testimony. This preempts any solid reconstruction of this person in Proto-Zamucoan, although some hints suggest that these persons might have had distinct markers in the distant past (§6.5).

Our analysis is a contribution to the typology of person marking by highlighting features of general interest, namely:

- a. Diachronic interactions of the unspecified possessor (GF) with 1st and 3rd-person. These are observed in other families (§6.1, 6.6), but large-scale diachronic studies are still missing.
- b. The special behavior of kinship terms, which tend to form a separate group involving peculiar exceptions, like suppletion in the 1S-person. As noted by Baerman (2014: 414) with examples from New Guinea languages, “suppletion for properties of the possessor largely remains unexplored territory”.
- c. Neutralizations among person affixes. See the OZ homophony in 1P/2P and (disregarding the REFL-person) 3S/3P, which in some cases extends to the 2S-person. Existing cross-linguistic studies on person marking (Cysouw 2003) and syncretism (Baerman et al. 2005) do not consider pronominal possession. However, 1P/2P homophony is well documented in pronominal systems, whereas its co-occurrence with another case of homophony (here 3S/3P) is classified as rare (Cysouw 2003: 126). Furthermore, 1P/2P neutralization implies dependency of person on number, while 3S/3P neutralization implies dependency of number on person (Aikhenvald & Dixon 2011: 170-204). The unusual presence of two opposite dependencies in the same paradigm deserves attention.
- d. The convergence of personal markers for nouns and verb. This underlines a widespread feature among South American indigenous languages. Significantly, in both Zamucoan and neighbouring Mataguayan this characteristically involves the contribution of the irrealis mood (§6.7), whose pervasiveness in the Mataguayan family is a recent discovery (Ciucci 2014).

This last observation naturally brings us to the issue of interfamily language contact in the Chaco area. Well beyond possessive morphology, we find substantial evidence of transfer of morphological features among Zamucoan and Mataguayan / Guaycuruan. What makes this case especially interesting is that it highlights a rarely described, yet not uncommon situation among South American languages, whereby a limited number of lexical borrowings goes hand in hand with substantial transfer of grammatical markers, as claimed by Aikhenvald (2002), Evans (2005: 232-233), Seifart (2011), Epps (to appear). We intend to address this issue elsewhere, exploiting data from different domains of grammar, well beyond the possessive morphology. These include, according to Ciucci (2014): (i) person prefixes used for realis and irrealis mood

in verb inflection; (ii) possessive classifiers; (iii) nominal plural suffixes; (iii) adpositions; (iv) negation markers; (v) conjunctions; (vi) typologically rare para-hypotactical structures (Bertinetto & Ciucci 2012).

Abbreviations

1, 2, 3 = first, second, third person; AY = Ayoreo; OZ = Old Zamuco; BF = base form; CH = Chamacoco; EXCL = exclusive; GF = generic form; GP = greater plural; F = feminine; IF = indeterminate form; IGNOR = ignorative; INCL = inclusive; IRLS = irrealis; M = masculine; MOD = modality; NPS = non-possessable; PL = plural; REFL = reflexive person; RLS = realis; SG = singular.

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Résumé

Cet article présente une analyse comparative de la flexion possessive dans les trois langues Zamuco qui nous sont

connues: l’Ayoreo et le Chamacoco – toujours parlés dans la région du Chaco entre la Bolivie et le Paraguay – ainsi que †l’Ancien Zamuco, décrit par le jésuite Ignace Chomé au début du 18^e siècle. Les données autorisent une plausible reconstruction de la flexion possessive du Proto-Zamuco: l’Ancien Zamuco en ressort comme la langue la plus conservatrice des trois, tandis que le Chamacoco se révèle comme la plus innovatrice, bien qu’elle montre des résidus très significatifs du point de vue restructif. L’analyse signale en particulier une série de traits d’intérêt général pour la typologie des marques de personne.

Zusammenfassung

Der vorliegende Artikel schlägt eine vergleichende Analyse der Possessivflexion der drei dokumentierten Zamuco-Sprachen vor: Ayoreo und Chamacoco – im Chaco-Gebiet von Bolivien und Paraguay gesprochen – und †Alt-Zamuco, das in der ersten Hälfte des 18. Jahrhunderts vom Jesuiten Ignace Chomé beschrieben wurde. Diese Vergleichen erlaubt eine plausible Rekonstruktion der Possessivflexion des Proto-Zamuco. Alt-Zamuco scheint konservativer als der Rest seiner Sprachfamilie zu sein. Chamacoco ist im Gegensatz dazu die am stärksten innovative Sprache, obwohl es auch konservative Züge von besonderer Bedeutung für die Rekonstruktion zeigt. Die vorgeschlagene Analyse dokumentiert auch einige Merkmale von allgemeinem Interesse für die Typologie der Personmarkierung.

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