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Grammatical replication: First-person non-singular verbal indexes in Eastern Toba, Western Toba (Guaicuruan) and Tapiete (Tupi-Guaraní)[1]

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Abstract
In this paper we suggest that linguistic features can show traces of the frequency and intensity of social interactions between indigenous peoples. We focus on peoples of the alluvial fan of the Pilcomayo River (South American Chaco), and analyze first-person non-singular verbal encoding in their languages. The corpus is composed of (a) data obtained during fieldwork, (b) descriptive grammars, and (c) published reports by missionaries, army officers, and European travelers. Combining environmental and

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ethnohistorical information, we propose that the first-person non-singular subject verbal indexes split visible in Eastern Toba of the Lower Pilcomayo River, Western Toba of the Upper-Middle Pilcomayo River (Guaicuruan), and Tapiete of the Upper Pilcomayo River area (Tupi-Guaraní) could be an outcome of language-internal resources used by the speakers of these languages to replicate the Matacoan (Maká, Nivaclé, and Wichí) external model.
Key words: verbal pronominal indexes; language contact; socio-cultural interaction; indigenous peoples; Pilcomayo River; South America.

Resumen

Replicación gramatical: índices verbales de primera persona no-singular en toba oriental, toba occidental (guaycurú) y tapiete (tupi-guaraní)

Este artículo analiza los rastros de la frecuencia e intensidad de las interacciones entre grupos indígenas a través del abanico aluvial del río Pilcomayo (Chaco sudamericano) que pueden encontrarse, sincrónicamente, en rasgos lingüísticos, específicamente en la codificación de la primera persona no-singular en los verbos. El corpus está compuesto por datos provenientes de trabajo de campo, gramáticas descriptivas y reportes publicados elaborados por misioneros, militares y viajeros europeos. A partir de la combinación de evidencias medioambientales y etnohistóricas, proponemos que la escisión de primera persona no-singular en toba oriental y occidental (guaycurú) y tapiete (tupi-guaraní) puede ser descrita como resultado del uso de estrategias internas a estas lenguas para replicar el modelo externo de las lenguas mataco-mataguayas (maká, nivaclé y wichí) o replicación gramatical.
Palabras clave: índices pronominales verbales; contacto lingüístico; interacción socio-cultural; pueblos indígenas; Río Pilcomayo; América del Sur.

Résumé

Réplication grammaticale : indices verbaux de première personne non singulier en toba oriental, toba occidental (guaycuru) et tapiete (tupi-guaraní)

Cet article analyse les traces de la fréquence et de l'intensité des interactions entre les groupes autochtones à travers de l'éventail alluvial de la rivière Pilcomayo (Chaco sud-américain) que l'on peut trouver, synchroniquement, dans des caractéristiques linguistiques, spécifiquement dans le codage de la première personne non-singulière dans les verbes. Le corpus est composé de données de terrain, de grammaires descriptives et de rapports publiés par des missionnaires, des militaires et des voyageurs européens. Sur la base de la combinaison de preuves environnementales et ethno-historiques, nous proposons que l'excision de première personne non-singulière dans le toba oriental, toba occidental (guaycuru) et tapiete (tupi-guarani) peut être décrite comme le resultat de l'utilisation de stratégies internes dans ces langues pour

reproduire le modèle externe des langues mataco-mataguayas (maká, nivaclé et wichí) or réplication grammaticale.

Mots-clés : index pronominaux verbaux; contact linguistique; interaction socioculturelle; peuples autochtones; Fleuve Pilcomayo; Amérique du Sud.

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INTRODUCTION

This paper focuses on the encoding of the first-person non-singular unique argument of an intransitive clause (S) and the most agent-like argument of a transitive clause (A) in three languages spoken by hunter-gatherers on the Pilcomayo Alluvial Fan. These languages diverge from the rest of the languages in their families: Eastern Toba of the Lower Pilcomayo River and Western Toba of the Upper-Middle Pilcomayo River (henceforth Eastern Toba and Western Toba) (Guaicuruan), and Tapiete of the Upper Pilcomayo River area (Tupi-Guaraní). Environmental and ethnohistorical information support the existence of intense and prolonged social contact between hunter-gatherers on the Pilcomayo Alluvial Fan.

Pilcomayo River meanders through the plains, forming a 210,000 km^2 alluvial fan of typical triangular form. The proximal zone of the fan is currently located near Villamontes, in Bolivia, and its distal zone runs some 700 km in length through Argentina and Paraguay. The proximal and distal zones of the Pilcomayo alluvial fan are geomorphologically different; while the proximal zone is characterized by ephemeral abandoned channels, the distal one runs through permanent and temporary swamp environments (Iriondo, 1993; Iriondo, et al., 2000) (Figure 1).

The adaptative strategies employed by hunter-gatherers in the semiarid savannas of the Pilcomayo fan are comparable to those developed by hunter-gatherers in similar latitudes around the world, such as in the Northern Desert of Central Australia (Bird & Bliege Bird, 2005): low population density, residential mobility, expedient tool technology, hunting and gathering activities differentiated by gender, extensive food exchange, and flexible social organization, with frequent fission and fusion of family groups.

Source: Geomorphology redrawn from Iriondo et al. (2000, p. 81)

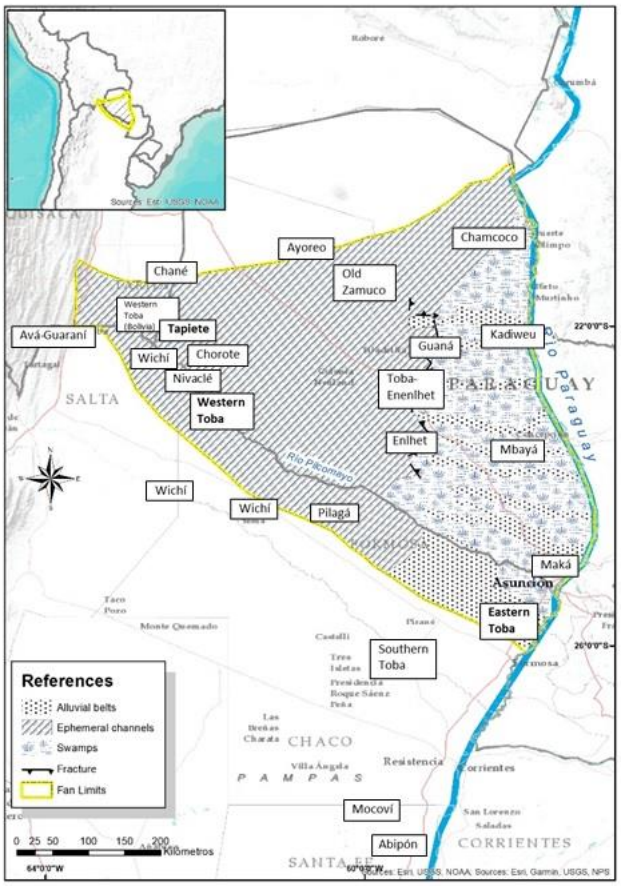

Figure 1. Indigenous peoples on the Pilcomayo Alluvial Fan

Examples of socio-cultural contacts among the peoples of the Pilcomayo River area are intercultural marriages, borrowing and adaptation of games, fishing techniques, tools, decorative styles, themes of oral narrative, and linguistic features. Their exchange networks resulted in very effective survival strategies employed by most hunter-gatherers in the same area: (a) temporary occupation of seasonal lagoons and non-flood campsites during the summer season, (b) fishing camps along the river and secondary channels during the winter season, and (c) seasonal mobility following the fluctuation in food supply (Mendoza, 2002, 2019a, 2019b).

Previous studies about language contact influence among different languages in the Gran Chaco region can be traced back to Lafone Quevedo (1912). Other, more recent approaches are Comrie, et al., (2010), Messineo (2011), Campbell and Grondona (2012), H. González (2015), Messineo et al. (2016), Carpio and Mendoza (2018), Vidal and Braunstein (2020), and Ciucci (2020). Birchall (2014) studied verbal argument marking patterns in South American languages of the "Chaco-Planalto region" and the "Southern Cone" including Mocoví (Guaicuruan), Pilagá (Guaicuruan), Wichí

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(Matacoan), Tapiete (Tupi-Guaraní), Bororo (Macro-Jêan), Timbira (Macro-Jêan), Tehuelche (Chonan) and Mapudungun (Araucanian) in the sample.

The conception of Chaco as a linguistic area is controversial. Comrie et al., (2010) and H. González (2015) focused on Pilagá (Guaicuruan), Wichí (Matacoan), Vilela (Lule-Vilela), and Tapiete (Tupi-Guaraní), comparing phonetic, phonological, and grammatical categories such as number, possession, and deixis and described Chaco as a linguistic area. On the other hand, Campbell and Grondona (2012) argued that there is diffusion of structural traits among Chaco languages, but "these do not come together in such a way as to suggest a cohesive self-contained (geographical) linguistic area" (p. 658). Proto-language reconstruction studies are available for Guaicuruan (Viegas, 2013) and Zamucoan (Ciucci & Bertinetto, 2015) languages. The scope of our analysis is limited to evaluating the possibility of describing the first-person non-singular subject verbal split in Eastern Toba, Western Toba, and Tapiete as instances of language-contact grammatical replication from Nivaclé, Maká, and Wichí (Matacoan) as model languages. At this stage in our research, our hypothesis seeks to posit these shared grammatical phenomena more than proving them, accounting for targeted linguistic occurrences in various languages of the Pilcomayo River Fan. Alignment systems of verbal indexes among the languages of the sample will be compared in future studies.

Among several South American indigenous languages (Campbell, 2012; Muysken, 2012), and native languages in Western North America (Jacobsen, 1980), contact has contributed to developing or shifting the distinction between inclusive/exclusive, and it may have affected only some languages of a family. For example, Matras (2007) says that the clusivity distinction disappears in some heavily Hispanicized varieties of Guaraní. Crevels and Muysken (2005) analyze the distinction between inclusive/exclusive in free and dependent pronouns in languages from Bolivia, Brazil, Peru, Ecuador, and Colombia. In Arawakan languages, they argue that the distribution of this feature is not uniform. This paradigmatic pronominal difference in Arawakan languages could have happened, according to Crevels and Muysken (2005), due to Quechuan influence. Why Yaneshá, another Arawakan language under Quechuan influence, did not undergo this contact-induced change remains puzzling to the authors (Crevels and Muysken, 2005).

The first-person non-singular verbal subject split in the language spoken by Western Toba was analyzed, from an ethnohistorical and crosslinguistic perspective, by Carpio and Mendoza (2018). Our hypothesis is that the first-person non-singular split could be explained in terms of grammatical replication or the use of language-internal resources by Eastern Toba, Western Toba, and Tapiete speakers to replicate the Matacoan (Maká, Nivaclé, and Wichí) external model.

METHODOLOGY AND THEORETICAL CONCEPTS

In multilingual settings with a history of frequent social contact among different peoples, such as the Pilcomayo Alluvial Fan region, contact-induced language change can imply direct replication of morphemes and phonological shapes from a source language, and/or, most frequently, the transfer of patterns of distribution, of grammatical and semantic meaning modelled on an external source. Matras and Sakel (2007) call these types 'replication of linguistic matter' and 'pattern replication', respectively. Heine and Kuteva (2005) refer to them as 'borrowing' and 'grammatical replication' from the model language (M) to the replica language (R). Particularly relevant to our analysis is pattern or grammatical replication. According to Heine and Kuteva (2005), this type of contact-induced grammatical replication is essentially in accordance with principles of grammaticalization: extension or context-induced reinterpretation, desemanticization or "semantic bleaching", decategorialization, and erosion or "phonetic reduction". Matras and Sakel (2007) argues that, although grammaticalization plays an important role in pattern replication, a corresponding pivot is the most basic step in cases of pattern replication.

Heine and Kuteva (2005) enumerate the following structural effects of contact-induced grammaticalization on the replica language: i. gap filling: a new category is introduced for which previously there was no equivalent category, ii. coexistence: either the new and the old category are combined and co-occur in the same construction or the two coexist as alternative constructions available to speakers of the replica language, iii. differentiation: an existing category is redefined with the emergence of a new category, iv. equivalence: some category of the replica language is restructured to be equivalent to a corresponding category of the model language whereby the grammatical categorization of the replica language is affected, v. category extension: the old category is assigned a new use pattern and it acquires a larger range of uses; what changes is the internal structure of categories, and vi. category replacement: the new category replaces the old one. These effects are not mutually exclusive.

Heine and Kuteva (2005) used the following reasoning to identify instances of contact-induced linguistic transfers. They said that if two languages M and R shared a linguistic property x and additional traits such as (i) these languages were immediate neighbors and/or were known to have been in contact with each other for an extended period of time, and (ii) x was also found in languages genetically related to M but not in languages genetically related to R; then, a likely outcome was that x had been transferred from M to R. In other words, x was an instance of contact-induced transfer.

Contact development within the pronominal domain, according to Matras (2007), tends to occur crosslinguistically more frequently in relation to terms of address and their degree of lexicalization, or the clash of linguistic systems that distinguish exclusive/inclusive reference, and those that do not, i.e. whether the inclusion of the

hearer within the first complex is relevant or not (Cysouw, 2003) or clusivity (Filimonova, 2005).

We adopt the heuristic proposed by Heine and Kuteva (2005) to describe the first-person non-singular subject verbal indexes in Eastern Toba, Western Toba, and Tapiete as probable instances of contact-induced grammatical replication. We hypothesize that this linguistic feature in the three replica languages (Eastern Toba, Western Toba, and Tapiete) is the result of intense interethnic contact with speakers of Maká, Wichí, and Nivaclé (Matacoan model languages).

The corpus is composed of (a) data obtained during fieldwork with Western Tobas and Eastern Tobas, (b) linguistic studies and grammars on Guaicuruan, Matacoan, Tupi-Guaraní, Zamucoan, and Enhlet-Enenhlet/Maskoian languages, and (c) published reports written by missionaries, army officers, and European travelers who visited the region in the late 1800s and early 1900s. These different data sources are collated to understand the occurrence of a peculiar first-person non-singular split in the verbal indexes of Western Toba, Eastern Toba, and Tapiete.

Fieldwork data collection among Western Tobas took place at Vaca Perdida and surrounding communities located 50 km to the North of Ing. G. N. Juárez city (Formosa, Argentina) (1983-1995, 2007-). Data from Eastern Tobas was collected at *Nam Qom*, a neighborhood located on the outskirts of Formosa city, and the ex-secular colony Bartolomé de las Casas in the center-east of Formosa province (2010-).

RESULTS AND DISCUSSION

Social relations among peoples with traditional territories on the Pilcomayo Alluvial Fan

The Pilcomayo river provided the axis for most of the ranges trekked by hunter-gatherer groups (Mendoza, 2002). This water-tethered mobility characteristic of the semiarid Chaco is described by army officers and ethnographers who visited the zone. For example, in his daily account of the Bolivian expedition along the Pilcomayo in 1883, Campos (1888) said that as soon as the explorers deviated from the "big river" and wandered through the palm zone, they experienced hunger and were very distressed by thirst because they did not know where to find other sources of potable water (Campos, 1888). Ethnographer Erland Nordenskiöld (1920), who visited the semiarid Chaco between 1908 and 1909, said that water accessibility determined the location of temporary camps.

Campos (1888) said that indigenous peoples communicated quickly with one another through fires, something he compared to both a telegraph and *chasquis* of the Inca type. Campos (1888) singled out the camp in *Cabayo-repoti* or *Cabayudepoti* as the headquarters (*cuartel general*) where several tribes gathered to discuss peaceful and/or aggressive collective actions.

Nordenskiöld (1910) described the exchange networks among indigenous groups and their rivalry in securing access to the most productive riverine areas. The Swedish ethnographer witnessed a fight between Nivaclés (*Asluslay*) and Western Tobas for possession of a riverine area teeming with fish. At the time when the ethnographer made this observation, the Toba warriors defeated the Nivaclé.

Eastern Tobas were enemies of the Maká from the left bank of the Pilcomayo River in the Paraguayan Chaco, and they considered themselves rivals of the Pilagá, their neighbors to the West (Mendoza & Wright, 1989).

Intergroup aggressive encounters during the winter fishing season are still remembered by elders in Western Toba communities. Western Toba oral tradition recorded past alliances, enmities, hostilities, and economic and social exchanges with neighboring Wichís and Nivaclés in riverine areas. EC-m1938[2], a Western Toba elder, said that in the past they had many enemies: *qadawtéwa Teyaɢáyk*, *Kéaɢayk*, *Damelé?ek* 'our enemies were Nivaclé, and Wichí'. After a successful surprise attack, the warriors would take captives from their enemies. Elder Western Tobas said that some people living in their communities were descendants from former Wichí and Nivaclé captives. For example, *Wacháñiho* and *Qometáyk* were Wichí and Nivaclé captives among Western Tobas, and *Chadáta* was a Wichí captive among Nivaclés.

Bolivian officer Leocadio Trigo reported in 1906 (as cited by Mujía, 1914; Robertson Trigo and Robertson Orozco, 2005; Trigo, 1939) the names of two Western Toba men: *Pagánayk* and *Pyagáyc*. These proper names are currently used to name men in the communities. According to AG-f1952, a female Western Toba elder, *Pagánayk* was Nivaclé (*Teyaɢáyk*), probably a Nivaclé captive who married a Toba woman called *Pyaɢa?ñó?*.

Since the beginning of Spanish conquest, colonial chroniclers documented contentious relationships between Chiriguanos of the Cordillera (today self-identified as Avá-Guaraní) and Western Toba groups on the Chaco plains. Sometimes they fought one another, other times they visited and exchanged goods. Their alliances became more frequent in the mid-1800s, as more Bolivian colonists began encroaching on the lands of Avá-Guaraní villages and on the territories of hunter-gatherers on the plains (Combès, 2017). Places like *Macharetí* in the piedmont and *Cabayurepoti* on the plains were meeting places where warriors from different tribes celebrated alliances and planned attacks.

In 1935, at the end of the devastating Chaco War between Bolivia and Paraguay, the ethnographer Max Schmidt visited the camps of indigenous peoples around the Upper Pilcomayo River area. During fieldwork, Schmidt encountered displaced Chané and Izoceño from Parapetí River, Avá-Guaraní in Macharetí, Wichí-Guisnais, Western Tobas, Tapietes, Chorotes, and Nivaclés in riverine areas. He documented these

[2] Speakers' initials, sex, and birth year.

peoples' fluid interethnic relationships, mixed marriages, multilingualism, exchange networks, and cultural borrowing (Bossert & Villar, 2013). For example, Schmidt (1937) visited a band of Wichí-Guisnais in a riverine camp near the Bolivian Fortín Linares on the Upper Pilcomayo, documenting their alliances with Nivaclés and Western Tobas and comparing their culture to that of Avá-Guaraní and Izoceño-Guaraní.

In the early twentieth century, the Tapietes of the Bolivian Chaco were a small tribe "somewhat mixed with the Tobas," said Anglican missionary W. Barbrooke Grubb (1911, p. 39). Tapiete oral histories described their enduring alliances with the Tobas. According to the narratives, Tapietes participated in multiethnic raids, mainly doing scouting for the warriors but playing a secondary role during the actual attacks (Carvajal, 1998). Interestingly, Arthur Thouar (1906a, 1906b) noticed that after a fight between any two Toba women, the one defeated would disappear from the community and take refuge among the Mataguayans or the Tapietes. When the Bolivian Tobas moved out of their traditional territories on the left margin of Upper Pilcomayo River, Tapiete families occupied some of their riverine camps. Arce et al. (2003) documented intermarriages between Tapietes and Western Tobas, and Tapietes and Wichí-Weenhayek settled on the right bank of the Upper Pilcomayo. Tapietes intermarry today with Wichís-Weenhayek, Chorotes, Tobas, Guaraníes, and Spanish speakers. Daily verbal interactions can develop in two or more languages within the same speech event (Ciccone, 2015).

First-person non-singular verbal indexes in Western Toba, Eastern Toba, and Tapiete as instances of grammatical replication

Applying the methodology adopted by Heine and Kuteva (2005), we identify a probable instance of a contact-induced first-person non-singular split in Eastern Toba, Western Toba (Guaicuruan) and Tapiete (Tupi-Guaraní) based on the model of Matacoan languages. In Eastern Toba and Western Toba, a new category is included within the verbal subject pronominal paradigm to encode a first-person non-singular split through different language internal mechanisms, but in Tapiete only the structural morphological encoding of the split is affected. These peoples have been in contact for an extended period. First-person non-singular split is found in Matacoan languages, except Chorote (Campbell, 2013; Carpio & Mendoza, 2018). It is absent among the rest of the Guaicuran languages and it is encoded by prefixes among Tupi-Guaraní languages. We hypothesize that this is an instance of contact-induced transfer from Wichí, Nivaclé, and Maká (model languages) to Eastern Toba, Western Toba, and Tapiete (recipient or replica languages). We describe the language internal resources used by Eastern Toba, Western Toba, and Tapiete peoples to replicate the Wichí, Nivaclé and Maká model of first-person non-singular subject encoding on verbs.

In Table 1 we systematize data about first-person non-singular verbal encoding on indigenous languages from the Pilcomayo Alluvial Fan in the South American Gran Chaco region. It becomes evident that Eastern Toba, Western Toba, Tapiete, Chamacoco, and Chorote diverge from the rest of the genetically related languages. In this paper, we focus our analysis on the probable contact-induced origin of the first-person non-singular subject verbal split in the first three languages. The Chamacoco first-person non-singular split is described as "an innovation" among Zamucoan languages (Ciucci, 2016; Ciucci & Bertinetto, 2015). The distinction between first-person inclusive/exclusive is also encoded on free pronouns but not on possessor markers in Chamacoco (Ciucci, 2016). Chorote is the only Matacoan language that synchronically does not have a first-person non-singular split. Campbell and Grondona (2012) and Campbell (2013) argued that varieties of modern Chorote have lost the inclusive-exclusive contrast in first-person plural pronominal forms.

Table 1. First-person non-singular subject verbal indexes among indigenous languages on the Pilcomayo Alluvial Fan

		Subject verbal indexes		
	Language	**1NSG split**	**No 1NSG split**	Authors
Guaicuruan	Southern Toba		Circumfix: 1SG prefix plus 1PL suffix (1PL)	Buckwalter (1980); Klein (1978); Censabella (2002); Messineo (2003); Carpio (2007)
	Pilagá			Vidal (2001)
	Mocoví			Gualdieri (1998); Grondona (1998)
	Mbayá			Sánchez Labrador (1917 [ca. 1760])
	Kadiwéu			Griffiths and Griffiths (1976); Sandalo (1995)
	Abipón			Dobrizhoffer (1970 [1784]); Najlis (1966)
	Western Toba (Bolivia)			Cattunar (ca. 1911)
	Western Toba	Prefix (1GR) / Circumfix: 1SG prefix plus 1PL suffix (1G)		Carpio (2012, 2014)
	Eastern Toba	Circumfix: 1SG prefix plus 1PL suffix (1GR) / Circumfix: 1SG prefix plus collective suffix (1G)		R.E. González (2015, 2016)

		Subject verbal indexes		
	Language	**1NSG split**	**No 1NSG split**	Authors
Matacoan	Nivaclé	Prefix (1INCL) / Circumfix: 1SG prefix plus 1PL suffix (1EXCL)		Stell (1987), Fabre (2016)
	Maká			Gerzenstein (1994)
	Wichí	Prefix (1INCL) / Circumfix: 1SG prefix plus 1PL suffix (1EXCL)		Terraza (2009), Nercesian (2014)
		1EXCL free pronoun plus 1SG verbal prefix or verb without person inflection (1EXCL)		Nercesian (2014)
		1EXCL free pronoun plus verb with 1SG prefix (1EXCL)		Terraza (2009)
	Chorote Yojwáha, Yowuwa, Manjuy		Circumfix: 1SG prefix plus 1PL suffix (1PL)	Gerzenstein (1978, 1983), Carol (2014)
	Chorote Manjuy	Combination of 1SG or 1PL verbal indexes with 2PL suffix ('You (PL) and I/We do X')		Gerzenstein (1978)
Tupi-Guaraní (Selection)	**Tapiete**	Prefix (1INCL) Circumfix: 3SG prefix plus 1EXCL suffix (1EXCL)		González (2005)
	Avá-guaraní	Prefix (1INCL) Prefix (1EXCL)		Dietrich (1986)
	Chané			Dietrich (1986)
	Izoceño			Dietrich (1986)
	Sirionó			Crevels and Muysken (2005)
Zamucoan	Chamacoco	Prefix (1INCL) Prefix (1EXCL) 1INCL+GREATER PLURAL suffix		Ciucci (2016)
	Ayoreo		Circumfix: 1SG prefix and 1PL suffix (1PL)	Ciucci (2016)
	Old Zamuco			Chomé (1958 [ca. 1745])
Enhlet-Enenhlet (Maskoian)	Toba-Enenhlet		Prefix (1PL)	Unruh et al. (2003)
	Enhlet			Kalisch (2010)
	Guaná			Unruh and Kalisch (1999)

First-person non-singular in Matacoan model languages

Nivaclé, Maká, and Wichí (Matacoan) have a first-person non-singular split that can be understood in terms of clusivity, and it also occurs on free pronouns and possessor markers. In Nivaclé (1) and Maká (2), the verbal indexes that encode first-person inclusive are prefixes, and the ones that encode first-person exclusive are circumfixes composed of the first-person singular prefix plus a first-exclusive suffix.

(1) Nivaclé (Matacoan)

a. ˈ**št–**aˈščiʔ[3]
1PL.INCL.SBJ–wait
'We (inclusive) wait'

b. **x–**aˈščiʔ**–eˣɬ**
1SG.SBJ–wait–1PL.EXCL.SBJ
'We (exclusive) wait'

(Stell, 1987, p. 149)

(2) Maká (Matacoan)

a. **xit–**otoy
4.SBJ–dance
'We dance (you and me)'

b. **hoy–**otoy**–iɬ**
1.SBJ–dance–1PL
'We dance (she/he and me)'

(Gerzenstein, 1994, p. 103)

Lower Bermejo River Wichí has the following verbal strategies to encode first-person non-singular subject (Nercesian, 2014): i. first-person inclusive prefix (3a), ii. first-person exclusive free pronoun plus a first-person singular verbal prefix (3b), and iii. first-person exclusive free pronoun plus verb without person inflection (3c), and iv. first-person singular prefix plus the verbal plural clitic *=hen* (on intransitive verbs) (4).

(3) Wichí (Matacoan, Lower Bermejo, Argentina)

a. ts'ilak **to–**tefw pini, w'ahat
only 1PL.INCL.SBJ–eat honey fish
'We (inclusive) only ate honey, fish'

(Nercesian, 2014, p. 415)

[3] The notation used by the consulted authors is maintained.

b. **n'lham–ilh** toj mamse–s nemhi[4] **n'**–tefw mak
1EXCL–PL CONJ young–PL NEG.IRR.anymore 1SBJ–eat stuff

toj hatsu
CONJ like.that
'We (exclusive), the youth, don't eat anymore that kind of stuff'
(Nercesian, 2014, p. 316)

c. wit iche ch'ithan iche l(a)–fwetsil toj **n'lham–ilh** tefw
CONJ EXIST pasacana EXIST 3POSS–roots CONJ 1EXCL–PL eat
'And it was pasacana and roots that we (exclusive) ate'
(Nercesian, 2014, p. 324)

(4)

S
n'–n(i)chey(e)=**hen**
1SBJ–be.hungry=PL
'We (exclusive) are hungry'
(Nercesian, 2014, p. 228)

In the variety of Wichí spoken in Rivadavia (Salta province, Argentina), Terraza (2009) describes a verbal prefix to encode first-person inclusive (5), and the juxtaposition of first-person exclusive free pronoun and the verb with the first-person singular prefix to encode first-person exclusive (6), or the use of the first-person singular prefix with the morpheme *-hen* (7).

(5) Wichí from Rivadavia (Matacoan, Salta, Argentina)
(**namił**) **ya**–k^{y}o–hat halo
1PL.INCL 1PL–break–CAUS stick
'We (inclusive) break the stick'
(Terraza, 2009, p. 157)

(6) yax nox^{w}el, si **nłamił** **n**–han–ex maq ta
PROHIB be ashamed if 1PL.EXCL 1–understand–APPL stuff SUB

la–t'ehiloq la–wuye
2–want 2–do
'Don't be ashamed, if we (exclusive) understand what you want to do…'
(Terraza, 2009, p. 250)

[4] Wichí has a negative irrealis subject person verbal paradigm (Nercesian, 2014). In (3b) negation is encoded by the negative adverb *nemhi*. Hence, the verbal pronominal indexes used in this example are the same as those of declarative affirmative clauses.

(7) nuxu mak–hwas to **na–**hope**–hen** wikyi…
all thing–DIM that 1–to be–PL people
'Many things happened to us that we (exclusive) are Wichí…'
(J. Terraza, personal communication, March 1, 2020)

According to Nercesian (2014) and Terraza (2009), the morpheme =/–*hen* shows absolutive alignment because it encodes plurality of S (4) and (7) – not restricted to first-person plural, for example in (8) it co-occurs with the second-person prefix–, and of the most patient-like argument of a transitive clause (9a).

(8) **la–**t'ischey=**hen**
2SBJ–laugh=PL
'You are laughing/You laugh'
(Nercesian, 2014, p. 228)

(9) P
a. atsinha tefw=**(h)en** **atseta(j)–s**
woman eat=PL orange–PL
'The woman eats oranges'

b. atsinha wit hin'u tefw atsetaj
woman CONJ man eat orange
'The woman and the man eat an orange'
(Nercesian, 2014, p. 228)

Gerzenstein (1994) and Terraza (2009) argue that in Maká and in the variety of Wichí spoken in Rivadavia (Salta province, Argentina), the first-person non-singular split does not always correspond to an opposition in terms of clusivity. For instance, Gerzenstein (1994) says that in Maká first-person non-singular inclusive encodes an ethnic plural (*plural étnico*) which includes the Maká speaker and all members of the community, and first-person exclusive refers to the Maká speakers and people who do not belong to their community (Paraguayans, Nivaclés, etc.). According to Terraza (2009), in the variety of Wichí spoken in Rivadavia (Salta province, Argentina), the distinction between inclusive/exclusive is diffuse and it seems to be "pragmatically motivated" (p. 115). The possible extension of the meaning of the first-person non-singular split in Maká and Wichí from Rivadavia to the number of participants with the speaker involved and the social context of the utterance (i.e. its non-restrictedness to clusivity) are particularly relevant to understanding the meaning of the first-person non-singular split on the replica languages, Eastern Toba and Western Toba.

Collective *–pi* as a first-person group verbal index in Eastern Toba

In Eastern Toba, González (2016) described a first-person non-singular split only to encode the unique argument of an intransitive clause. The split is explained in terms of the number of participants plus the speaker involved. First-person restricted group is encoded by a circumfix composed of a first-person singular prefix plus first-person plural (10a) – as in the rest of the Guaicuruan languages – and first-person group by another circumfix composed of a first-person singular prefix plus the collective suffix (10b). This split does not apply to transitive verbs (11).

(10) Eastern Toba (Guaicuruan, Formosa, Argentina)

S

a. qomiʔ **s–**oʔon–aɢan**–aq**–tak
1PL 1.I–sing–AGT–1PL–PROG
'We (a few) are singing'

S

b. qomiʔ **s–**oʔon–aɢana–tak**–pi**
1PL 1.I–sing–AGT–PROG–1G
'We are (all) singing'

(González, 2016, p. 232)

(11) A

qomiʔ **s–**awaɢana**–q** so pyoq (*sawaɢanapi)
1PL 1.I–hit–1PL DEM dog
'We hit that dog'

(R.E. González, 2015, p. 89)

The collective morpheme is also synchronically used on nouns to refer to a group of entities (12) and as the final segment of a circumfix of third person non-singular marker (13a) alternating with the third person agreement marker (13b). [5]

(12) a. lawoɢo
'Flower'

b. lawoɢo–l
flower-PL
'Many flowers'

[5] For further readings on the suffix *–pi* as a collective marker in varieties of Toba see Carpio (2007, 2011, 2012).

c. lawoɢo–**pi**
flower–COL
'A bouquet of flowers'

(González, 2016, p. 229)

(13) a. daʔamaʒe d–ata–weʔk
PD.PL 3.I–go–LOC.3PL
'They (a few) run away'

b. damaʒe–**pi** d–ata–wek–**pi**
PD–COL 3I–go–LOC–COL
'They (all) run away'

(González, 2016, p. 235)

The use of collective *–pi* as a third person plural agreement marker has also been described in Southern varieties of Toba by Censabella (2002) and Messineo (2003), but its use as a first-person group marker was only recorded in Eastern Toba (González, 2016).

We hypothesize that the introduction of a new category, a split in first-person non-singular, for which previously there was no equivalent category in Eastern Toba can be understood as a case of gap filling. The new and the old categories coexist as alternative constructions available to the speakers of the replica language, and the existing first-person plural category was redefined as first-person restricted group as opposed to first-person group, making it an instance of coexistence and differentiation. The collective suffix *–pi* has been included in a new paradigm. Synchronically, it remains in its nominal domain (12) and acquires a new function as the marker of "group" within the verbal pronominal domain (10b), (13b). In this case, it is not the structural morphological pattern which is replicated to convey certain meaning available in neighboring languages, but the inclusion of an existing morpheme in a new paradigm with new syntactic compatibilities. Although the collective maintains its semantic content, it loses syntactic autonomy because it must co-occur with a third person or first-person prefix within the pronominal domain. There is not phonological attrition.

The overall process can be understood as one of equivalence in which the collective category of Eastern Toba is assigned new functions within the verbal pronominal domain to be equivalent to a corresponding category of the model language. The first-person non-singular split replicated in Eastern Toba is based on the number of participants plus the speaker involved not on clusivity. In the model languages Maká and Wichí from Rivadavia (Salta, Argentina), the first-person non-

singular split can be described in terms of clusivity but also according to the number and ethnic origin of participants with the speaker involved.

Addition of a new subject verbal index in Western Toba

Western Toba distinguishes first-person non-singular restricted group and group subject by a prefix and a circumfix, respectively, on intransitive and transitive verbs. The circumfix is composed of a first-person singular prefix and a first-person group pronominal suffix.[6] Following Cysouw (2003), we studied the possibility of describing this split within first-person non-singular verbal pronominal indexes in terms of clusivity, i.e., according to the kind of category of person involved (inclusive (1+2, 1+2+3)/exclusive (1+3) or minimal inclusive (1+2)/augmented inclusive (1+2+3)). Transitive constructions in which a first-person non-singular acts on a second person were analyzed. If there were an inclusive/exclusive split within first-person non-singular pronominal indexes, the use of the inclusive affix should have been considered ungrammatical in these kinds of transitive clauses. However, both first-person non-singular verbal indexes may occur as A on transitive verbs when the most patient-like argument (P) is a second person (Carpio, 2014) (14)-(16). This split also appears on free pronouns, but not on possessive inflection on nouns.

(14) Western Toba (Guaicuruan, Argentina)

a. ʔam **qaw–**atetón
2SG 1RG.I–know
'We (a few) know you'

b. ʔam **h–**atetón**–aq**
2SG 1.I–know–1G
'We (all) know you'

(Carpio, 2012, p. 108)

(15) a. **qan–**towén
1GRII–remember
'We (a few) remember'

b. **ñ–**itowéna**–q**
1II–remember–1G
'We (all) remember'

(Carpio, 2012, p. 125)

[6] The suffix *-q* does not function as pluralizer elsewhere in the language.

(16) a. **qal**–oqochiyá ñíʔ–me noɢotolé–k
1GRIII–help DEM–ENDOPH girl–MASC
'We (a few) help the boy'

b. **y**-ikocha<**ɢ**>á níʔ–me noɢotolé–k
1III–help<1G> DEM–ENDOPH girl–MASC
'We (all) help the boy'

(Carpio, 2012, p. 129)

Western Toba has an additional paradigmatic unit to encode first-person restricted group – (14a), (15a), (16a)[7] – within its subject verbal pronominal paradigm that distinguishes it from the rest of the Guaicuruan languages. Western Toba encodes first-person non-singular restricted group opposed to the the first-person non-singular group circumfix. This morpheme – with allomorphic variation – is the only first-person non-singular verbal index found in the other Guaicuruan languages (Carpio & Mendoza, 2018).

We hypothesize that the Matacoan first-person non-singular verbal morphological pattern was replicated in Western Toba incorporating new units, the prefixes *qaw*–, *qan*–, and *qal*–, within the verbal pronominal paradigm. The structural morphology of the first-person non-singular verbal indexes in Western Toba is the same as that of the Matacoan model languages (prefix and circumfix). The inclusion of these new verbal pronominal prefixes implied the change from general first-person non-singular to group of the existing person indexes. It could be described as an instance of differentiation. The rise of a new restricted group marker can be viewed as gap filling, and the overall process as one leading to equivalence because Western Toba acquired a grammatical distinction that matches that of the Matacoan model languages. As in the case of Eastern Toba, the first-person non-singular split replicated in Western Toba is not based on clusivity. Nevertheless, as it was argued by Gerzenstein (1994) and Terraza (2009) in Maká and Wichí from Rivadavia (Salta, Argentina), the first-person non-singular split is not restricted to clusivity either; it may also include number and ethnic origin, and pragmatic conditionings.

[7] In Western Toba, the first-person non-singular split was recorded in the three types of lexically conditioned subject verbal paradigms. It was not attested with change of state, location, and change of position verbs (Carpio, 2012, 2014).

Morphological structure of the first-person non-singular verbal split in Tapiete

Tapiete, a Tupi-Guaraní language, has a prefix to encode first person inclusive subject (17a), and a circumfix to encode first-person exclusive subject (17b), which is composed of a third person prefix (17c) plus a first-person exclusive suffix (González, 2005)[8].

(17) Tapiete (Tupi-Guaraní)

a. tenta mbiri **ya–**h ña–mbareka–nä
village far.away 1PL.INCL–go 1PL.INCL–hunt–SUB
'We (inclusive) used to go hunting far away from the village'
(González, 2005, p. 403)

b. ore **o–**ho**–ha**
we (EXCL) 3.AC–go–1EXCL
'We (exclusive) go'
(González, 2005, p. 208)

c. **o–**ho
3.AC–go
'(S)he goes'
(González, 2005, p. 144)

Proto Tupi-guaraní and other Tupian languages, for example Sirionó, Yuki, Izoceño (18), Avá-Guaraní, and Chané (19) (Crevels & Muysken, 2005; Dietrich, 2009-2010; Dietrich, 1986) encode first-person inclusive and exclusive subject through verbal prefixes.

(18) Izoceño (Tupi-Guaraní)

a. **yá–**ha
1PL.INCL–go
'We (inclusive) go/went'

b. **ró–**ho
1PL.EXCL–go
'We (exclusive) go/went'
(Dietrich, 1986, p. 88)

[8] The use of third person affix with other morphemes to encode first-person exclusive has been described, for example, in Huave (Huavean, México) and Shuswap (Salishan, Canadá) (Jacobsen, 1980).

(19) Avá and Chané (Tupi-Guaraní)

a. **yá**–ha
1PL.INCL–go
'We (inclusive) go/went'

b. **ndó**–ho
1PL.EXCL–go
'We (exclusive) go/went'

(Dietrich, 1986, p. 88)

The first-person non-singular split verbal morphological pattern of Tapiete differs from the rest of the languages of the family. We hypothesize that this morphological peculiarity of Tapiete could be described as a linguistic instance of the miscegenation process between Chanés and Chacoan groups (Combès, 2008). Although the morphological pattern 'prefix/circumfix' in Tapiete is of the Matacoan model type, the semantics of the first segment of the circumfix is different, i.e. instead of a first-person prefix, a third person prefix co-occurs with the first-person exclusive suffix.

The use of the third person prefix as part of the first-person non-singular circumfix by Tapiete speakers could be explained as an attempt to accord with the structures of the Matacoan model languages. The third person singular morpheme coexists in Tapiete as a third person marker and as part of the first-person exclusive verbal marker. It could be understood as having been restructured to be equivalent to a corresponding category of the model languages.

CONCLUSIONS

In this paper we propose that the peculiar first-person non-singular subject verbal indexes in Eastern Toba, Western Toba and Tapiete – when compared with genetically related languages – can be viewed as instances of contact-induced grammatical replication from Matacoan model languages (Maká, Nivaclé, and Wichí). The language internal resources used to replicate the first-person non-singular subject verbal split are different in the three replica languages: i. the use of the collective suffix *–pi* within the verbal pronominal domain in Eastern Toba, ii. the addition of a new verbal pronominal paradigmatic unit, a prefix to encode first-person restricted group, in Western Toba, and iii. the adoption of a morphological structure of first-person non-singular verbal split in Tapiete that is closer to the Matacoan model languages than to Tupi-Guaraní languages. The structural effects of contact-induced grammaticalization on the first-person non-singular verbal indexes of the replica languages are summarized in Table 2.

Table 2. Contact-induced grammaticalization on first-person non-singular verbal indexation in Eastern Toba, Western Toba, and Tapiete

Structural effects of contact-induced grammaticalization on the replica languages	Eastern Toba	Western Toba	Tapiete
Gap filling	x	x	-
Coexistence	x	-	x
Differentiation	x	x	x
Equivalence	x	x	x
Category extension	x	-	-
Category replacement	-	-	-

Our argument builds on historical and ethnographic documentation describing the Western Toba groups' expansion along the Pilcomayo River Fan and resulting in distancing from Eastern Toba groups, while they both maintained close contact with speakers of Matacoan languages (Mendoza, 2019a, 2019b). It also builds on information about social contacts between Western Toba and Tapiete groups on the Upper Pilcomayo River area. The complexity of Tapiete ethnohistory has not been discussed here, although their connections with speakers of Matacoan languages have been a subject for academic discussions before.

This interdisciplinary analysis of social and cultural exchanges among indigenous groups that have interacted over hundreds of years across the alluvial fan of the Pilcomayo River shows that traces of the frequency and intensity of those interactions are still visible in linguistic features as the first-person non-singular verbal indexes. The scope of our analysis is restricted to only one feature, but a more extensive study of social and cultural exchanges between Chacoan, Amazonian, and Andean peoples would be valuable in order to evaluate all possible sources of language contact.

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Abbreviations

1, 2, 3, 4	first, second, third and fourth person
AC	active
AGT	agentive
APPL	applicative
CAUS	causative
CONJ	conjunction
DEM	demonstrative
DIM	diminutive
EXCL	exclusive
EXIST	existential
F	feminine
G	group
I, II, III	pronominal index type 1, 2, and 3
INCL	inclusive
IRR	irrealis
MASC	masculine
NEG	Negation
PL	plural
POSS	possessor
PROG	progressive
PROHIB	prohibitive
RG	restricted group
SBJ	subject
SG	singular
SUB	subordinator