

Loanwords in Wichí, a Mataco-Mataguayan language of Argentina

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1. The language and its speakers

Wichí has approximately 40,000 speakers in Argentina and Bolivia. In Argentina, it is spoken in the western and central parts of the provinces of Salta and Formosa, and in the northeastern part of the province of Chaco. In Bolivia, it is spoken in Tarija County. The data for this study are based on fieldwork on the Bermejo dialect, which has approximately 3,000 speakers in the province of Formosa, Argentina.

All of the communities in Formosa are organized as Civil Associations with legal status. In addition to hunting and gathering activities, they have also developed textile weaving, pottery, and, to a lesser extent, ranching and some degree of farming. There is an ongoing tendency for these families in rural communities and their urban relatives to migrate. This has to do, among other reasons, with the search for part-time jobs, the sale of their crafts, the need for health care services, the completion of administrative procedures, and the payment of subsidies. Some of the elderly and the heads of families receive government pensions and a small group (3%) is employed by the state.

An alternative name of Wichí that was current until recently is Mataco. The Wichí language belongs to the Mataco-Mataguayan family, spoken in the region known as Chaco. The other languages of the family are Maká, Chorote and Nivaklé. The Chaco region is located in the South American Lowlands and includes the great woody plain bounded on the west and southwest by the Andes and the Salado River basin, in the east by the Paraguay and Parana Rivers and in the north by the Moxos and Chiquitos Plains. This vast region spans 1,000,000 square kilometers across western Paraguay, eastern Bolivia, northeastern Argentina and a little portion of Brazil

The Wichí language exhibits several dialects. Tovar (1964) mentions the existence of two dialects in the province of Salta, Argentina (Vejoz and Guisnhay) and a third in Bolivia (Noctén, also called *Weenhayek*). Gerzenstein (2003) introduced a slightly different dialect division, though she kept the number of Wichí dialects to three. She called both the Guisnhay and Vejoz dialects from Tovar's study *Salteño* (spoken in eastern Salta, Argentina), and added a linguistic variety that was not recognized in Tovar's classification, the Bermejo (also called *Teuco*) dialect (spoken in Formosa and

Chaco, Argentina), and still acknowledged Noctén (in Tarija, Bolivia) as one of the three dialects.

Geographically, the Guisnhay dialect can be found in the cities of Embarcación and Tartagal, east of Salta and west of Formosa (district of Ramón Lista). The Bermejo (or Teuco) dialect is spoken by the communities in the district of Rivadavia (Salta), on the Bermejo riverbanks (in Chaco and Formosa) and along National Route 81 in Formosa going from Pozo del Tigre to Laguna Yema. Finally, the Noctén dialect is spoken between the mouth of the Bermejo River and Parallel 64 in Bolivia.

Map 1: Geographical setting of Wichí



Lexical, morphological, and phonological differences exist among these varieties, which the speakers themselves can identify. The division in dialects, however, is not so clear cut. As the lexical and grammatical elements of one variety can also be found in another, it would be necessary to establish isoglosses within the three major dialects.

The Bermejo dialect, for example, is spoken in 25 Wichí communities (Braunstein & Dell’Arciprete 1997) distributed in three Argentinian provinces (Salta, Chaco and Formosa). However, there are a few linguistic differences among the speakers of this dialect. In the Rivadavia county (Salta), for instance, the clausal negation *-hit’e* can be interrupted (*hi...t’e*) by other verbal suffixes like the directional or object markers (Terraza 2005). Our data, which was collected in the Pozo del Tigre, Las Lomitas, and Bazán (Formosa) communities, show that the same clausal negation morpheme is

formally different *ha-.....-hi*. Likewise, we have detected phonological differences – the voiceless palatalized velar stop of the Rivadavia variety corresponds to the voiceless palatal affricate of the Formosa variety.

Of the languages spoken in the Chaco region, Wichí is the language with the greatest number of speakers, along with Toba. The degree of vitality of the Wichí language, however, is different from one region to another. While speakers in the province of Formosa are Wichí-dominant, those in the district of Rivadavia (Salta) are Spanish-dominant (Terraza 2002). In general, we have witnessed a growing tendency to bilingualism nowadays accompanied by an effort to maintain the native language.

The language is transmitted across generations and is spoken vigorously at the community and family levels. It is also used as a means of communication on local radio broadcasts that are produced and anchored by the speakers themselves. Wichí is not used as a means of communication by non-Wichí persons. It has been taught in Wichí schools as part of the bilingual intercultural education program implemented since 1984. However, the government has not developed key bilingual education programs or curricula for the Wichí communities. For that reason, the program is rather ineffective for its lack of scope or sequence in Wichí instruction and its deficiency of didactic materials.

The most widely used writing system was created by Anglican missionaries. In 1937, Richard Hunt, an Anglican preacher, developed the first Wichí alphabet. To represent certain special sounds in Wichí, they used a combination of specific letters, for example *th*, to the voiceless lateral fricative sound. In 1998, the Anglican missionaries introduced some modifications into the alphabet so that each letter is now associated with a phoneme. In our transcriptions, we use the modified version of the alphabet.

Once the first alphabet of the Wichí language had been developed, the Anglicans translated the bible into Wichí and promoted reading and writing for the Wichí speakers to be able to access biblical texts.

The Anglicans' first contact with the Wichí was in the province of Salta and can be traced back to the beginning of the 20th century. The first written materials belong to a dialect of that area (Salteño or Guisnhay, according to the dialect classification presented above). The emergence of written texts and of literacy in Wichí in the area of Bermejo, Formosa appeared later on in the 1980s. Some Wichí speakers of different varieties were trained as Anglican preachers and educated by the Anglican missionaries in Salta. They fostered literacy in Wichí years later. This is, for instance, the case of Francisco López who, having trained as an Anglican preacher in Salta, conducted teaching tasks in his own community in the province of Formosa. Part of Francisco López's personal project was supported and financed by the DOBES Project "Chaco Languages" (2002-2005).

Sustained contact with nearby society took longer – from the early 20th century –

and for this reason, Wichí was used as the sole means of communication among these peoples. The first published linguistic texts (vocabularies, grammars) date back to the late 19th century and continued until the first half of the 20th century. These were undertaken by missionaries and European travelers that had been hired by the Instituto Geográfico Militar Argentino to explore the area. Their work did not lead to the production of reference grammars and/or dictionaries and, hence, linguistic documentation is still work in progress.

2. Sources of data

Given that no prior studies exist on contact between Wichí and Spanish, and/or other languages, the data for this chapter had to be specially compiled. We collected the information in the communities of Tres Pozos (Bazán), and Lote 27 (Las Lomitas), Formosa, with young and adult native speakers. We complemented the corpus with other data elicited on prior occasions in these communities and in Lakhawichí (Pozo del Tigre) in the province of Formosa and the Sauzalito neighborhood in the province of Chaco.

Other sources for this paper are: Pelleschi (1886, 1897); Remedi (1890); Massei (1895); D'Orbigny (1896) and Hunt (1913, 1937, 1940).

2.1. Nineteenth century sources (1850-1900)

Pelleschi (1886) is a traveler's diary describing his experiences across the Bermejo River from east to west. The author registers the characteristics and particularities of two indigenous groups that inhabited the zone: the Tobas in Chaco and the Wichí from northeastern Chaco (on the border of Salta) and in eastern Salta.

The book contains descriptions of diverse aspects of the culture of each ethnic group and of the relationships between the peoples. The author offers his impressions of different aspects of the grammar and phonology of the Wichí language (which he calls "Mataco"), and includes the systematization of lexical and grammar categories, together with examples in Wichí, and the comparison of its phonological system with Spanish, with Toba, and at times, with Italian.

Pelleschi's second book (1897) contains a grammatical description of Wichí, and references to the phonological adaptations of Spanish loanwords. These two books constitute the most important grammatical account on the Wichí language written during the second half of the 19th century.

Remedi was a Franciscan missionary from the Colegio Apostólico de Salta. His book (Remedi 1890) includes brief comments on some aspects of the language: sounds, nouns, verbs and adjective classes, and subject and possessive pronominal paradigms. It also contains an appendix with a short list of Wichí-Spanish words.

Inocencio Massei published a series of notes on the Noctén variety of Wichí as a contribution to the dialectal documentation undertaken by his contemporaries (Massei 1895). The author includes a grammatical appraisal of the Noctén variety of Wichí together with an analysis of the noun and verb categories, and the subject and possessive person paradigms. The work also provides a description of the group's customs and activities.

Finally, D'Orbigny (1896), based on the data provided by his contemporary, Father Doroteo Gionnecchini in Tarija (Bolivia), focuses on the Vejoz dialect located in the province of Salta (Argentina) from the Orán River to the Seco River, quite near the Noctén group. Using sources from other missionaries and his own information, D'Orbigny proposes to develop a grammar of this Wichí dialect. He presents subject and possessive pronoun paradigms and interrogative pronouns, as well as including references to the noun, to number and case markers, and a description of the verb forms and their structure. He concludes with a comparison between Wichí and Toba, suggesting a possible historical relationship between them, though he does not develop this idea any further.

2.2. Twentieth century sources (1900-1950)

The most important sources from the first half of the 20th century are Hunt (1913, 1937 and 1940). Based on the hypothesis of a possible genealogical relationship between the Mataco-Mataguayan and Guaycuruan languages that Lafone Quevedo had proposed, Hunt establishes comparisons between Wichi and Toba throughout his work, which was published in 1913.

His Wichí grammar based on the study of the Vejoz dialect includes a lexicon of about 2,000 words in alphabetical order in Spanish with English and Wichi translations, and the same in alphabetical order in Vejoz with translations into Spanish and English.

Hunt (1937) is a bilingual Wichí-English dictionary that contains an appendix with brief grammatical notes. Lastly, his grammar (Hunt 1940) represents the work of approximately ten years of study of the Wichí language and was published with a slight modification one year before he died.

It was of major importance for the missionaries to be able to speak the language of the group with whom they were carrying out their work. To this end, and as a way to help his fellow missionaries learn Wichí, Hunt developed this grammar, including exercises to practice the grammatical structures, which was then published in English. Likewise, each of the chapters contains a corpus of words and phrases in Wichí-English.

The lexical forms found in the secondary sources do not differ greatly as far as we currently know. At any rate, fewer than 50 percent of the total entries in the database

used appear in the bibliographical sources that were cited.

3. Contact situations

In the province of Formosa several indigenous groups coexist whose languages belong to different families: Pilagá and Toba (Guaycuruan), and Wichí and Nivaklé (Mataco-Mataguayan). In eastern Formosa, the population originally from Paraguay speaks Guaraní and all of these languages have had contact with Spanish since the conquest.

No multilingual communities exist in this province with speakers of several of these languages. The overall social norm reflects marriages within the same ethnic group, although the partners belong to distinct bands¹. There are a relatively small number of interethnic marriages. However, we can see a growing tendency for marriages to take place between indigenous and non-indigenous persons (Spanish-speaking *Criollos*), which fosters the advance of bilingualism and the possibility that Spanish loanwords are progressively incorporated into Wichí in the future.

3.1. Contact with languages in the Chaco area

Despite scarce archeological data, Braunstein proposes a hypothesis on the time when the area was populated (from 6,000 to 2,000 BP). He claims that two principal groups, the Mataco-Mataguayan and the Guaycuruan, settled in Chaco. The first came from the north by way of the west and followed the Pilcomayo and Bermejo river basins toward the southeast. The second inversely came from the south by way of the east and moved toward the northwest following the same river basins (Vidal & Braunstein 2009+).

The Chaco thus became an area of migration and displacement where these peoples were organized internally into tribes. That they had to share the same geographical area and its resources promoted interchange and relations between these peoples. In addition, it was a propitious scenario for linguistic and cultural contact over prolonged and somewhat stable periods.

Although the sustained contact between Wichí and other languages in the area is undeniable, from the linguistic perspective it is still difficult to identify which loanwords originated in which language and what direction they could have taken. Some hypotheses on possible genetic and contact relations among the Chaco languages

¹ *Band* is the term used in the literature for a bilateral group perceived like a single family that migrated together and was represented by a single principal leader. The exogamic local groups or bands kept more or less permanent alliances with other bands, and the result was the conformation of larger groups that we name "tribes". Each tribe was mainly endogamous, and postmarital residence tended to be that of the woman/uxorilocal (Braunstein 1983; Braunstein & Miller 1999).

were pointed out in the nineteenth century sources. Based on the individual works of the missionaries and travelers in the Chaco (D'Orbigny, Massei, Remedi, Pelleschi), Lafone Quevedo (1896), states how strikingly similar the pronoun systems of the Mataguayan languages are to the Guaycuruan languages, but at the same time, he observes that the percentage of lexical items they share is quite low. Our data confirm this.² According to Lafone Quevedo, the Matacoo-Mataguayan languages were closer to Lule (of the Lule-Vilela family) with respect to the amount of shared lexicon, despite their grammar being notably more similar to that of Toba (Guaycuruan). The questions Lafone Quevedo posed, and which have still gone unanswered, considered, on the one hand, which of these similarities between the languages could be attributed to genetic relations and which to linguistic contact. On the other, he debated the direction of these loanwords.³

Lafone Quevedo was well aware that one needed to know more about the languages spoken in the Chaco area before one could offer a thorough explanation of the linguistic situation. He maintained that the picture was extremely complex, with linguistic groups and subgroups, though he could not account for the similarities that, according to Braunstein are the result of migratory movements of the populations in the Chaco, centuries beforehand.

For the moment, the impossibility of clarifying the outcome of this contact for the Chaco languages involved can be partly attributed to the absence of complete or specific documentation in each case. Also, by studying only one dialect, we cannot be sure whether the other Wichí varieties were more influenced by neighboring languages than the Bermejo dialect, selected for the present study.

3.2. Contact with Spanish

The Chaco indigenous languages' contact with Spanish developed relatively late when compared to other languages in the Americas like Quechua (in this volume), Nahuatl and Quiché. In the Chaco, the Spanish conquerors arrived in the 16th century, reaching the Bermejo River in the late 18th century (Kersten 1968 [1905]). However, sustained contact with the European population began with missionary activities and then the evangelization of the indigenous peoples when the missions were established. The Catholic Franciscans first arrived in the last quarter of the 19th century, settling on the

² At least with respect to Pilagá, a Guaycuruan language.

³ "Vejoz, the language of the Mataco group, has a pronominal marking mechanism that is almost identical to that of the Guaycuruan group. However, its vocabulary is far from manifesting the same analogies. Undoubtedly, we could find some common roots between the two languages, but homophonies, which are the rule between pronouns, are more the exception in the rest of the vocabularies. Now the question is, should we admit a linguistic relation based on the first or reject it based on the second?" (Lafone Quevedo 1896: 131-132) (our translation).

right bank of the Bermejo River. They were followed by the Anglican South American Mission, who founded the Misión Chaqueña in Salta in the 1920s.

Sources dating back to the 19th century mention some contact between indigenous peoples, and between these communities and the European population on the plantations and the Franciscan and Anglican missions (Palmer 2005).

In the early 20th century, the Wichí were incorporated into the workforce as laborers on the sugar and cotton plantations and in manufacturing. The indigenous workers thus began to come into greater contact with Spanish (also used as the lingua franca among the indigenous peoples that spoke different languages). Contact with small farmers and ranchers also grew during this period (García 2005: 56ff). In sum, the incorporation of the indigenous population into the capitalist system and the labor market occurred relatively late, as well as their contact with the European population and its language, Spanish. Consequently, we could say that bilingualism among the Wichí developed early within the past 100 years and even more recently among the Bermejo communities.

That might explain why the contact influence of Spanish on the indigenous languages play such a small role in the works of 19th and early 20th century authors. Of all the sources we have examined, only Pelleschi (1897) notes the way in which the Wichí pronounce certain Spanish loanwords like: *cailá* < cabra (goat), *Peiló* < Pedro (Peter), *nelom* < melón (melon), *thilalol* < tirador (suspend), *hléno* < freno (brake), *húyelo* < pueblo (people), *tes* < tres (three), *poole* < pobre (poor) (Pelleschi 1897: 181, 237-238).⁴

Despite the centuries of contact, the share of Spanish loanwords is 15.5 percent, of which 10 percent are co-existent words and very few are replacements (8 words altogether, of which 5 are the words for numbers).

Mixed varieties of Spanish-Wichí have not emerged. Nor is code-switching a widely spread phenomenon in the older generation (Vidal 2006).

4. Number and kinds of loanwords in Wichí

Of the 1460 Loanword Typology (LWT) meanings, 195 have no equivalent in Wichí. There are 1361 meaning-word pairs in the Wichí subdatabase: 820 pairs have an exact counterpart in Wichí; 269 pairs have a super-counterpart (i.e. the word corresponds to several meanings of the LWT list, e.g. *hunhat* ‘world, land, floor, soil’; *iyhot* ‘mud, clay’; *lhip* ‘half, side, part, piece’); and 101 have sub-counterparts (i.e. several words correspond to a single meaning, e.g. *hulu*, *lamukw* ‘dust’; *wuk’u*, *winalhch’u* ‘owl’; *nichay’uhi*, *nichay’ukwe* ‘warm’). Finally, 171 pairs are para-counterparts (their meanings are not completely equivalent, e.g. *tshotoyw’et* (‘place of animals’) of the

⁴ These examples reflect the transcription of Wichí that Pelleschi developed in his book.

LWT meaning ‘stable or stall’; *ts’iwase* (‘a species of the same family like the reindeer/caribou or elk/moose’) for the LWT meaning ‘reindeer/caribou, elk/moose’; *chelhcchep* (‘time after summer’)/ for the meaning ‘the autumn/fall’).

The Wichí subdatabase contains 197 words that show some evidence of loanwords status. Of these, 194 are Spanish loanwords (95.7%). Quechua is the earliest source language for 6 of the total number of loanwords (2.8%). However, they were probably borrowed into Spanish first and then into Wichí. Of words coded in the database as “perhaps borrowed” (10 total items), 9 (4.2%) are also present in the Guaycuruan lexicon, presumably dating back to pre-Hispanic contact.

Spanish loanwords are distributed in the following categories: 4 probably borrowed, 1 perhaps borrowed, and 198 clearly borrowed. Of this total, 165 are insertions of new terms, 8 are replacements and 22 co-exist with the native word; about the last 3 there is no information. Of the total number of insertions, 32.5 belong to the semantic field *Modern world* (71.8% of all words in the semantic field). The remaining insertions are basically distributed in the fields of *Food and drink*, *Law*, and *Quantity*. When examining the number of insertions according to time periods, we can see almost the same number of borrowed words during the early period and modern times.

4.1. Loanwords by semantic word class

Table 1 shows the Spanish loanwords in the database by lexical class. All maintain the grammatical category to which they belong in the donor language.

Table 1: *Loanwords in Wichí by semantic word class (percentages)*

	Spanish loanwords	Non- loanwords
Nouns	23.1	76.9
Verbs	2.7	97.3
Adjectives	1.7	98.3
Adverbs	-	100
Function words	21.5	78.5
all words	15.8	84.2

Of the word classes in the database (noun, verb, function word, adjective and adverb), nouns show the greatest number of Spanish loanwords. There is at least one borrowed noun in each field with the exception of *Sense perception*, *Emotion and values* and *Miscellaneous function words*. The fields *Modern world* and *Food and drink* include

most of the borrowed nouns, 33 in the first and 23 in the second of the 160.5 borrowed nouns.

The word class with the second highest percentage of loanwords is “Function words” (21%). All Spanish loanwords in the function word class are cardinal numbers. There existed a numeral system from 1 to 5 that could act as lexical replacements, but new words were incorporated as from 6. Wichí’s numeral system was replaced by the western system. The same occurred regarding the division and organization of time. The months of the year and the days of the week are terms that were incorporated into the Wichí lexicon.

Verbs are the third word class with loanwords. Only 8 verbs (see below) represent 2.4% of the total words in this class (see examples in 1).

(1)			Gloss
Spanish loanword verb class			
pinta	<	pintá	‘to paint’
wayla	<	bailá	‘to dance’
manija	<	manejá	‘to drive’
wende	<	vendé	‘to send’
pesa	<	pesá	‘to weigh’
meli	<	medí	‘to measure’
kunta	<	contá	‘to count’
fwulena	<	frená	‘to brake’

The Spanish input form for these loanwords is the second person of the imperative mood. It is used as a verb root (like others from Wichí) and receives the same inflectional affixes as any other non-borrowed verb (cf. §5.2). This imperative form may have been chosen for its prosodic form (with right-head stress in Spanish, more similar to the Wichí stress pattern), that consequently requires less phonological integration.

Adjectives do not exist as a word class in Wichí. Rather, they belong to the word class of stative verbs. There is, however, one borrowed adjectival form (Spanish *pwili*/poor) that, interestingly, was integrated as a verb and behaves like a Wichí stative verb.

Finally, the adverb word class is the only one to manifest no loanwords.

4.2. Loanwords by semantic field

All of the semantic fields contain Spanish loanwords except two, *Emotions and values* and *Miscellaneous function words*. The distribution of loanwords by semantic field is given in Table 2.

Table 2: *Loanwords in Wichí language by semantic field (in percentages)*

	Spanish loanwords	Non- loanwords
1 The physical world	3.8	96.2
2 Kinship	4.2	95.8
3 Animals	12	88
4 The body	0.7	99.3
5 Food and drink	33.2	66.8
6 Clothing and grooming	23.6	76.4
7 The house	27.2	72.8
8 Agriculture and vegetation	20.7	79.3
9 Basic actions and technology	23.3	76.7
10 Motion	20.8	79.2
11 Possession	20.5	79.5
12 Spatial relations	4.2	95.8
13 Quantity	54.3	45.7
14 Time	23.7	76.3
15 Sense perception	2.2	97.8
16 Emotions and values	-	100
17 Cognition	4.4	95.6
18 Speech and language	5.3	94.7
19 Social and political relations	11.4	88.6
20 Warfare and hunting	8.1	91.9
21 Law	42.3	57.7
22 Religion and belief	20	80
23 Modern world	71.8	28.2
24 Miscellaneous function words	-	100
	15.8	84.2

Note the three fields with a striking percentage of loanwords: *Modern world* (71.8%), *Quantity* (54.3%) and *Law* (42.3%). Of the remaining semantic fields, 9 exhibit 33%-20% of loanwords, and the other 9 exhibit 11% -0% of loanwords.

Interestingly, 29.2% of non-loanwords are innovations (compounds or derivations of native bases, i.e., *wej itoj* [end fire] ‘car’; *wiy’o-taj* [fly-AUG] ‘airplane’; *to-chemet* + *cha* [POSS.INDEF-work + tool] ‘machine’; or words whose meaning was extended to embrace new concepts, e.g. *niyat* ‘any person with power’, later ‘president, rich,

government, minister, queen, king’; *lanek* ‘shell’, later ‘spoon’). Both the incorporation of loanwords and lexical innovations are the speakers’ responses to their modern lifestyle.

The field YY comprises a large number of loanwords designating numbers. Wichí, by tradition, has a system of five numbers. Amounts over five are conceived of or measured as sets of elements.

5. Integration of Spanish loanwords

Of the total 198 Spanish loanwords, 22 are unintegrated. That is, they have been incorporated into Wichí but have maintained the language’s phonological particularities of the word in the source language, for example, “*herrero*” (blacksmith), “*oro*” (gold), “*plata*” (silver), “*bronce*” (bronze), “*impuesto*” (tax), “*puerto*” (port), “*carne*” (meat), and “*ora*” (pray). Three arguments could explain their incorporation without integration to the Wichí phonological system: that they have only recently been incorporated and show little use, as in the case of “*oro*”, “*bronce*”, “*timón*” (rudder), “*impuesto*”; that the phonological form of the word is acceptable to the phonological patterns of Wichí, as in the case of “*papel*” (paper), “*país*” (country), “*azul*” (blue); and that the degree of bilingualism and the use of Spanish has increased in recent years and shows a tendency to rise.

The rest of the 177 loanwords were adapted to the patterns and phonological and morphosyntactic rules of Wichí.

5.1. Phonological integration

The phonological adaptation of Spanish loanwords to Wichí is made both at the level of the phoneme inventory and at the level of the syllable structure, as well as at the prosodic level (adaptation of Wichí’s stress pattern). When loanwords are adapted, they take on these three aspects.

5.1.1. Phonological adaptation of Spanish vowels

The phonological integration of Spanish loanwords involves vocalic changes like vowel raising. Mid vowels of Spanish loanwords, /e/ and /o/ are raised to /i/ and /u/ (despite the fact that the Wichí vowel system is composed of five vowels like Spanish). This is quite a regular and predictable mechanism. The change in the Spanish vowel /a/ for the Wichí /u/ only occurs at the end of the word. A similar phenomenon is

found in the lexical loanwords of Imbabura Quechua (this volume).

(2)

Wichí		Spanish	English
<i>platu</i>	<	<i>plato</i>	'the plate'
<i>tulu</i>	<	<i>toro</i>	'the cow'
<i>pulutu</i>	<	<i>poroto</i>	'the bean'
<i>pusti</i>	<	<i>poste</i>	'the post or pole'
<i>mati</i>	<	<i>mate</i>	'type of hot drink'
<i>munelu</i>	<	<i>moneda</i>	'the coin'
<i>semanu</i>	<	<i>semana</i>	'the week'
<i>esk^welu</i>	<	<i>eskwela</i>	'the school'

5.1.2. Phonological adaptation of Spanish consonants

The other phonological adaptations consist of replacements for those Spanish consonants that do not exist in Wichí. The Spanish consonants /b/, /ʃ/, /r/, /r/, /d/ and /f/ are replaced by those of the Wichí inventory whose features have some resemblance to Spanish consonants: example (3a) labial; (3b) palatal; in (3c) the two consonants belonging to the group of liquids; in (3d) sharing coronal feature, and (3e), the labiodental articulation point. In example (3f), the change in sound is not motivated by the absence of the voiceless velar fricative in Wichí's phonological inventory, but, as the /x/ never occurs in the syllabic onset position, it is replaced by the continuant labialized consonant. In the last case, (3g), the consonant in the onset position changes its point of articulation from palatal to alveolar (Nercesian 2009+).

(3)

Consonant adaptations			Examples			
	Spanish	Wichí	Spanish	Wichí	English	
(a)	b	→ w	batata	watata	'the	sweet
			banana	wanana	potato'	
			pava	pawa	'the banana'	
					'the kettle'	
(b)	ʃ	→ y	poʃera	puyelu	'the skirt'	
			ʃerba	yelwa	'type of herb'	
			boteʃa	wuteya	'the bottle'	
(c)	r, r	→ l	arena	alena	'the sand'	
			kareta	kaletaj	'the cart or wagon'	
			martes	maltis		

						‘Tuesday’
(d)	d	→	l	domingo	luminku	‘Sunday’
				toro	tulu	‘the cow’
				moneda	munelu	‘the coin’
(e)	f	→	f ^w	fideos	f ^w ilel	‘pasta’
				fo ^h foro	f ^w uf ^w ulu	‘the match’
				kafe	kaf ^w e	‘the coffee’
(f)	x	→	f ^w	xavon	f ^w awun	‘the soap’
				xweves	f ^w ewis	‘Thursday’
(g)	tʃ	→	ts	tʃalana	tsalana	‘the canoe’
				pontʃo	puntsu	‘the poncho’
				letʃe	letsu	‘the milk’

The phonological adaptations of consonants are quite a regular and predictable processes. But, Spanish-dominant speakers tend to use the Spanish words instead.

5.1.3. Integration to syllabic structure

The syllable structure in Wichí can be CV, CVC, CCV, CCVC, of which CV and CVC are most frequent.

Only three consonant clusters exist in this language: /tl/, /pl/ and /kl/. So if the Spanish loanword has a cluster, it will be replaced according to the above mechanism (see examples (4d) and (4e) with acceptable clusters). Yet, if an unacceptable cluster still results, as in examples (4a), (4b) and (4c), it will be adapted to form a good syllable structure in different ways.

In (4a) and (4b), the adapted consonants of a cluster will be constituted by two elements with unexpected degree of sonority /br/ > /wl/ violating the sonority hierarchy sequence, from lesser to greater sonority. Accordingly, the two consonants will appear in two different syllables and the cluster will be broken up. Example (4c) is more difficult to explain because we expect the adaptation to be similar to (4b), something like “pu.wi.li”. However, it is preferable to form two syllables instead of three and add the labialized feature of /u/ and /w/ to the voiceless bilabial stop /p/.

(4)

	Wichí			Spanish	English
(a)	li.wu.lu	<	li.wlu	<	li.bro 'the book'
(b)	su.wu.la'	<	su.wla	<	so.bra 'the remains'
(c)	p ^w i.li	<	pu.wli	<	po.bre 'poor'
(d)	klus	<		krus	'the cross'
(e)	k ^w a.tlu	<		kwa.tro	'four'

All of the above mechanisms tend to preserve Wichí's preferred syllable structure.

Diphthongs do not exist in Wichí. Nor are two contiguous vowels possible within the word because there are no syllables without onset. If two vowels became contiguous after some morphological derivation, they would be separated into two different syllables by adding a glottal stop or a palatal glide to form a CV structure (CVV > CV.CV). A similar treatment can be seen in loanwords. In example (5a), the last two syllables of the Spanish word are reduced to one, so, the sequence of two open vowels is avoided. Example (5b) is re-syllabified forming two syllables CVC. Consequently, the Spanish diphthong /ya/ is also broken: the voiced dento-alveolar stop remains in the coda and is reinterpreted as a voiced lateral alveolar, and the palatal glide is placed on the onset of the following syllable. Finally, with diphthongs like /we/ and /wa/, the velar glide labializes the preceding consonants, as in examples (5c) and (5d).

(5)

	Wichí		Spanish	English
(a)	f ^w i.lel	<	fi.ðe.os	'the plate'
(b)	mel.yus	<	me.ðyas	'type of hot drink'
(c)	p ^w e.wu.lu	<	pwe.blo	'the bean'
(d)	f ^w en.ti	<	fwen.te	'the post or pole'

5.1.4. Integration to stress patterns

Wichí has a tendency for right-headed iambic feet from left to right with stress distributed iteratively. Primary and secondary stress can be found in contiguous syllables. As a phonetic correlate, it provokes stress vowel lengthening, generating an acceptable iambic foot (Nercesian 2008). The same stress pattern and rules are applied to the Spanish loanwords, see examples in (6):

(6)

	Wichí		Spanish		English
(a)	me.'sa:	<	'me.sa		'the table'
(b)	si.'ya:	<	'si.ʃa		'the chair'
(c)	a.,sey.'taχ	<	a.'sey.te		'the oil'
(d)	a.,su:.'k ^w i:	<	a.'su.kar		'the sugar'
(e)	pu.,lu:.'tu:	<	po.'ro.to		'the bean'
(f)	kas.,lu:.'la:	<	ka.se.'ro.la		'the pan'
(g)	a.,sey.tu.'na:	<	a.sey.'tu.na		'the olive'

In (6), when the loanword stresses the penultimate syllable, stress is moved to the last syllable in phonological adaptation.

5.2. Morpho-syntactic integration

Loanwords can be used as bases to form new words. The Spanish verb or noun keeps the form of a verb or a noun in the recipient language. These lexical bases are also subject to word formation processes: affixation and composition.

5.2.1. Inflectional and derivational processes

Inflectional and derivational affixes can be added to loanwords. In example (7a) an augmentative suffix has been added; in (7b), a directional marker; in (7c) and (7d) an agentive derivational suffix. All of these loanword bases are nominal. In examples (7e) to (7g) the loanword used as the base for derivation belongs to the verb word class, inflected with subject pronominal prefixes. And, finally, (7h) and (7i) are examples of nominal loan bases carrying inflectional affixes, a number marker in (7h), and possessive + classifier markers in (7i).

(7)

	Derivational processes		Inflectional processes
a.	<i>tulu-taj</i> cow-AUG 'the bull'	e.	<i>n'-pinta</i> 1SUBJ-paint 'I paint'
b.	<i>tulu-pe'</i> cow-LOC.on 'the grease or fat'	f.	<i>n'-medi</i> 1SUBJ-measure 'I measure'
c.	<i>sapatu-wu</i> shoe-AG 'the shoemaker'	g.	<i>n'-kunta</i> 1SUBJ-count 'I count'
d.	<i>tiena-wu</i> shop-AG 'the merchant'	h.	<i>kayla-lis</i> goat-PL 'the goats'
		i.	<i>n'-ka-wuma</i> 1POSS-CL-rubber 'slingshot'

5.2.2. Compounding and incorporation processes

Spanish loanwords are also good candidates for compounding and incorporation processes (the plus sign ‘+’ signifies the union of the two roots, and the hyphen indicates the union of an affix to the base):

(8)	Created on Wichí bases	Created on loanword bases
a.	fwiy’et + cha could + tool ‘coat’	tsalana + cha canoe + tool ‘oar’
b.	tshowet + lhos animal + son ‘young’	kayla + lhos goat + son ‘little goat (fem)’
c.	to-mo + w’et POSS.INDEF-sleep + place ‘bed’	pelota + w’et ball + place ‘soccerfield’
d.	i-wu + poset-a 3SUBJ-do + peak-ACC ‘whistle’	i-wu + guerra-ya 3SUBJ-do + war-ACC ‘he fights’
	(Composition)	
	(Composition)	
	(Composition)	
	(Incorporation)	

6. Conclusion

Wichí’s contact with Spanish in the Bermejo communities contrasts sharply with the situation of other communities that settled at the mouth of the Bermejo and Pilcomayo Rivers in the province of Salta, (Argentina) and in Bolivia. Although colonization began several centuries earlier at the beginning of the 17th century, the Wichí in the Bermejo zone did not come into contact with the Spanish-speaking population until about the mid-19th century.

According to our data, Wichí manifests a relatively low percentage of Spanish loanwords. Several factors may have contributed to this. First, the contact of the Spanish-speaking population with the Bermejo peoples came late and the evangelization process was conducted in Wichí. Second, the incorporation of Wichí speakers into the strongly “hispanicized” national education system was also late in coming. Third, the particular nature of the Wichí community has sustained its cultural features over time and even now considers the adoption of Spanish as a strategy to relate to the non-Wichí world without having to abandon the native language.

Likewise, this attitude is coherent with the mechanism to create new words from native roots, and even, by phonologically and morphologically adapting Spanish loanwords. Finally, it is interesting that the number of Spanish loanwords that have been incorporated over time have shown no substantial modifications when comparing the early period of contact and modern times, even though the contact with Spanish increased in the last century.

In addition, even if the Chaco region is populated with indigenous groups whose languages belong to diverse linguistic families, from the structural perspective, these groups have pre-conserved their differences and the particularities that set them apart. We have not detected the occurrence of pidgins, creoles or mixed languages in this case. Nevertheless, we could say that several grammatical features may have passed from one language to another given the contact between the Chaco peoples (Comrie et al. 2008). In this regard, common characteristics in the grammars and in the classification systems of the Chaco languages give the region a special configuration of the linguistic area. In closing, as the data we use are based solely on the Bermejo dialectal variety, we cannot say what the effects of contact between Spanish and the other varieties of Wichí may be.

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Abbreviations

ACC = accusative;

AG = agentive;

AUG = augmentative;

CL = classifier;

DIR = directional;

POSS = possessive;

POSS.INDEF = indefinite possessor;

PL = plural;

SUBJ = subject

Appendix

Semantic Fields	Spanish loanwords	Spanish word form	English gloss
1. PHYSICAL WORLD	<i>alena</i>	arena	'the sand'
2. KINSHIP	<i>meyisu</i>	mellizos	'the twins'
	<i>wajtsi</i>	guacho	'the orphan'
3. ANIMALS	<i>tulu</i>	toro	'the cow'
	<i>weyis</i>	buey	'the ox'
	<i>teinelu</i>	ternero	'the calf'
	<i>kaila</i>	cabra	'the goat'
	<i>asnu</i>	asno	'the donkey'
	<i>mula</i>	mula	'the mule'
	<i>kutsi</i>	cuchi 'chancho'	'the pig'
	<i>wuk'u</i>	búho	'the owl'
	<i>mitsi</i>	michi 'gato'	'the cat'
	<i>tulutaj</i>	búfalo < toro + AUM	'the bull'
4. THE BODY	<i>luktul</i>	doctor	'the doctor'
5. FOOD AND DRINK	<i>kumila</i>	comida	'the food'
	<i>pawa</i>	pava	'the kettle'
	<i>kutsala</i>	cuchara	'the spoon'
	<i>kaslula</i>	cacerola	'the pan'
	<i>fwenti</i>	f fuente	'the dish'
	<i>platu</i>	plato	'the plate'
	<i>pan</i>	pan	'the bread'
	<i>alina</i>	harina	'the flour'
	<i>pulutu</i>	poroto	'the bean'
	<i>papa</i>	papa	'the potato'
	<i>uwa</i>	uva	'the grape'
	<i>asukwi</i>	azúcar	'the sugar'
	<i>letsi</i>	leche	'the milk'
	<i>aseituna</i>	aceituna	'the olive'
	<i>aseitaj</i>	aceite	'the oil'
	<i>tulupe'</i>	grasa < toro + sobre/encima	'the grease or fat'
<i>chesu</i>	queso	'the cheese'	
<i>selwesa</i>	cerveza	'the beer'	
6. CLOTHING AND GROOMING	<i>ilu</i>	hilo	'the thread'
	<i>puntsu</i>	poncho	'the poncho'
	<i>westilu</i>	vestido	'the dress'
	<i>melyus</i>	medias	'the sock or stocking'
	<i>wutas</i>	botas	'the boot'
	<i>sapatuwu</i>	zapatero	'the shoemaker'
	<i>wutum</i>	botón	'the button'
<i>towayu</i>	toalla	'the towel'	

	<i>sepiya</i>	cepillo	'the brush'
	<i>fwawun</i>	jabón	'the soap'
7. THE HOUSE	<i>wentana</i>	ventana	'the window'
	<i>kandawu</i>	candado	'the padlock'
	<i>kulhtsa</i>	colcha	'the blanket'
	<i>mesa</i>	mesa	'the table'
	<i>siya</i>	silla	'the chair'
	<i>wela</i>	vela	'the candle'
	<i>pusti</i>	poste	'the post or pole'
	<i>alulis</i>	adobe	'the brick'
8. AGRICULTURE AND VEGETATION	<i>asala</i>	azada	'the spade'
	<i>pala</i>	pala	'the shovel'
	<i>tiliwa</i>	trigo	'the wheat'
	<i>alus</i>	arroz	'the rice'
	<i>wanana</i>	banana	'the banana'
	<i>manyuku</i>	mandioca	'the cassava/manioc'
	<i>lasu</i>	lazo	'the lasso'
	<i>matsetaj</i>	machete	'the sickle or scythe'
	<i>watata</i>	batata	'the sweet potato'
9. MISCELLANEOUS	<i>eskuwa</i>	escoba	'the broom'
	<i>kalpintelu</i>	carpintero	'the carpenter'
	<i>maltiya</i>	martillo	'the hammer'
	<i>wiliu</i>	vidrio	'the glass'
	<i>kanastu</i>	canasto	'the basket'
	<i>pintura</i>	pintura	'the paint'
	<i>pinta</i>	pintar < pintá (2° imper)	'to paint'
10. MOTION	<i>wayla</i>	bailar < bailá (2° imper)	'to dance'
	<i>manija</i>	manejar < manejar (2° imper)	'to drive'
	<i>pwentu</i>	puente	'the bridge'
	<i>kaletaj</i>	carreta	'the cart or wagon'
	<i>walku</i>	barco	'the ship'
	<i>tsalana</i>	chalana, canoa	'the canoe'
	<i>tsalanacha</i>	remo < chalana + herramienta	'the oar'
	<i>wandera w'et</i>	mástil < bandera + lugar	'the mast'
	<i>walku katmek</i>	ancla	'the anchor'
11. POSSESSION	<i>munelu</i>	moneda	'the coin'
	<i>wuletu</i>	boleta	'the bill'
	<i>wende</i>	vender < vendé (2° imper)	'to sell'
	<i>tienawu</i>	comerciante < tienda + AG	'the merchant'
	<i>tiena</i>	tienda	'the market'
	<i>pesa</i>	pesar < pesá (2° imper)	'to weigh'
	<i>pwili</i>	pobre	'poor'
12. SPATIAL RELATIONS	<i>suwula'</i>	sobra	'the remains'
	<i>meli</i>	medir < medí (2° imper)	'to measure'
	<i>klus</i>	cruz	'the cross'
13. QUANTITY	<i>selu</i>	cero	'zero'
	<i>unu</i>	uno	'one'

	<i>lus</i>	dos	'two'
	<i>tales</i>	tres	'three'
	<i>kwatlu</i>	cuatro	'four'
	<i>sinku</i>	cinco	'five'
	<i>seis</i>	seis	'six'
	<i>siete</i>	siete	'seven'
	<i>ocho</i>	ocho	'eight'
	<i>nwewe</i>	nueve	'nine'
	<i>lyes</i>	diez	'ten'
	<i>onsi</i>	once	'eleven'
	<i>lusi</i>	doce	'twelve'
	<i>kinsi</i>	quince	'fifteen'
	<i>wenti</i>	veinte	'twenty'
	<i>sien</i>	cien	'a hundred'
	<i>mil</i>	mil	'a thousand'
	<i>kunta</i>	contar < contá (2° imper)	'to count'
14. TIME	<i>semanu</i>	semana	'the week'
	<i>luminku</i>	domingo	'Sunday'
	<i>lunis</i>	lunes	'Monday'
	<i>maltis</i>	martes	'Tuesday'
	<i>mielkulis</i>	miércoles	'Wednesday'
	<i>fwewis</i>	jueves	'Thursday'
	<i>wielnis</i>	viernes	'Friday'
	<i>sawlu</i>	sábado	'Saturday'
15. SENSE PERCEPTION	<i>asul</i>	azul	'blue'
17. COGNITION	<i>mayistalu</i>	maestro	'the teacher'
	<i>eskwelu</i>	escuela	'the school'
18. SPEECH AND LANGUAGE	<i>papel</i>	papel	'the paper'
	<i>liwulu</i>	libro	'the book'
19. SOCIAL AND POLITICAL RELATIONS	<i>pais</i>	país	'the country'
	<i>pwewulu</i>	pueblo	'the town'
20. WARFARE AND HUNTING	<i>walia</i>	guardia	'the guard'
21. LAW	<i>ley</i>	ley	'the law'
	<i>jues</i>	juez	'the judge'
	<i>testiwu</i>	testigo	'the witness'
	<i>malewu</i>	malevo 'ladrón'	'the thief'
22. RELIGION AND BELIEF	<i>lius</i>	Dios	'the god'
	<i>altal</i>	altar	'the altar'
	<i>inlesia</i>	iglesia	'the church'
	<i>pastul</i>	pastor	'the priest'
23. MODERN WORLD	<i>laliu</i>	radio	'the radio'
	<i>telewisium</i>	televisión	'the television'
	<i>telefwu</i>	teléfono	'the telephone'
	<i>mutu</i>	moto	'the motorcycle'
	<i>pila</i>	pila	'the battery'
	<i>kuliktiwu</i>	micro	'the bus'

	<i>wapulh</i>	tren < vapor	'the train'
	<i>fwulena</i>	frenar < frená (2° imper)	'to brake'
	<i>mutul</i>	motor	'the motor'
	<i>uspital</i>	hospital	'the hospital'
	<i>enfwehmela</i>	enfermera	'the nurse'
	<i>pastiya</i>	pastilla	'the pill or tablet'
	<i>sulhtawu</i>	soldado, policía	'the soldier'
	<i>karne</i>	carnet	'the driver's license'
	<i>wutasiun</i>	votación	'the election'
	<i>numelu</i>	número	'the number'
	<i>kaye</i>	calle	'the street'
	<i>patente</i>	patente	'the license plate'
	<i>estampiya</i>	estampilla	'the postage stamp'
	<i>kalta</i>	carta	'the letter'
	<i>wanku</i>	banco (institución financiera)	'the bank (financial institution)'
	<i>kultsun</i>	colchón	'the mattress'
	<i>wuteya</i>	botella	'the bottle'
	<i>kalmelu</i>	caramelo	'the candy/sweets'
	<i>plastiku</i>	plástico	'the plastic'
	<i>sine</i>	cine	'the film/movie'
	<i>musika</i>	música	'the music'
	<i>kusilo</i>	mate cocido	'the tea (herb hot drink)'
	<i>te</i>	té	'the tea'
	<i>kafwe</i>	café	'the coffee'
	<i>mati</i>	mate	

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