Arawakan and Tukanoan contacts in Northwest Amazonia prehistory

Contatos Tukáno e Aruák na pré-história do Noroeste da Amazônia

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Abstract: This paper analyzes several linguistic traits that are evidences for ancient and continuous contacts between Arawakan, Tukanoan and neighboring languages from the Northwest Amazon. It is shown that Arawakan-Tukanoan contacts have a long-term duration and since ancient times have been shaping the languages from both families in terms of direct and indirect diffusion processes, with an overall tendency for Arawakan dominance in the exchange of linguistic traits. Broader patterns of areal relationships are also explored, showing evidence for large-scale multilingual regional systems in pre-history, as well as suggesting that Arawakan and Tukanoan had the most intense and prolonged contact situation in the region. These results contribute to our overall understanding of the cultural history and the complex regional systems in Amazonia.

Keywords: Arawakan; Tukanoan; Amazonia.
Introduction

This paper explores several linguistic traits that bear evidence to the long-term history of linguistic contacts between Arawakan and Tukanoan families in the Northwest Amazon (NWA). The main goal of this study is to enlarge our current temporal perspective of language contact between the two families, showing that they have mutually influenced each other long before the ethnographic present. A secondary goal is to present linguistic information for the study of NWA cultural history, as well as its connections to neighboring areas in Northern South America.

A general result of this paper is a timeline of Arawakan and Tukanoan contacts based on the relative chronology of contact induced change patterns, as well as archaeological and ethnological information. This will be discussed in section 1.1, along with some background information about the linguistic, historical and ethnological situation of Arawakan and Tukanoan languages. In section 1.2 the materials, methods and theoretical background are discussed.

The linguistic patterns that will be discussed in this paper range from different levels of grammars: lexicon, morphology and structural or functional patterns. The known cases of Tukanoan and Arawakan contacts in the literature are discussed in section 2. New analysis of phenomena that support Arawakan-Tukanoan contacts in more ancient times will be discussed in section 3. In section 4 we discuss data that supports a more general perspective of both families within the regional context of NWA and neighboring areas. Section 5 concludes this study.

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1Research towards this paper has been possible due to a grant from the Max Planck Institute for the Sciences of Human History (MPI-SHH).

2 The term “Arawakan” used in this paper refers to the same group of languages classified as “Arawak” (Aikhenvald 1999) or “Maipurean” (David Payne 1991). Aikhenvald prefers the term “Arawak” to name the family in order to avoid confusion with stock composed by the core “Maipurean” languages and also other smaller families or isolates, such as Mapipure + Arawá [Madi] + Chapacura, Guamo Harakmbet and Uro-Chipaya. Although we agree that there is not an Arawakan stock, there has been some pattern in the writing of indigenous linguistic families names as adjectives in the English language, thus Quechua > Quechuan, Tupi > Tupian, Tukano > Tukanoan, etc., especially when the name of the family is derived from a name of a language from that family.
1.1 The Tukanoan and Arawakan context

The NWA is here defined as an area that encompasses the Caquetá/Japurá and Putumayo basin in the west, Upper Rio Negro and Guaviare rivers to the east. Along with Tukanoan and Arawakan languages in NWA there are also languages from other linguistic families, such as Boran, Witotoan, Nadahup, Kakua-Nikak, Kariban, Andoke and Tupi-Guarani. From a broader geographical perspective, river and jungle pathways connect the NWA to neighboring areas, such as the Orinoco basin, Northern Andes and Andean foothills in Colombia, Venezuela and Ecuador, as well as central and western Amazonia (Eriksen 2011). See map 1 for a list of languages, linguistic families and regional scope of this paper.

![Map of NWA and neighboring languages](image)

Fig. 1: Map of NWA and neighboring languages (Hammarström et al. 2017)

Tukanoan and Arawakan languages occur in all corners of this large area, what makes their comparative study fundamental for understanding NWA cultural history. Intense language contact is a striking feature of this region, and Arawakan language groups were key players in this system, contributing to the integration of even wider regions in the Americas (Wright 1992, Hornborg and Hill 2011).

There is a consensus view that within the Arawakan family there is a subgroup encompassing all Northern Arawakan languages, such as: Resígaro, Yukuna, Kabiyarí, Baniwa, Koripako, Tariana, Piapoco, Achagua, Baniva, Yavitero, Baré, Werekena (Hammarström et al. 2017). There are important variations, though, in
the internal classification of Northern Arawakan languages (Payne 1991, Ramirez 2001, and Aikhenvald 2002). In Figure 2, I suggest a “reconciling” classification of Northern Arawakan languages abstracted from these three proposals and from an analysis of cognate sets from the Swadesh 100 list conducted in this study.

![Fig. 2: Northern Arawakan languages.](image)

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3 Payne (1991), based on lexical similarities, places Baniva and Yavitero as an out-group to all other Northern Arawakan languages, for which he finds no evidence for shallower subgrouping, except for Achagua-Piapoco and (Baniwa-)Kuripako-Tariana. Aikhenvald (2002) provides a holistic classification based on three subgroups: *Colombian* (Resigaro, Yukuna, Achagua, Piapoco, Kabiyari), *Upper Rio Negro* (Baniwa, Kuripako, Tariana), *Orinoco* (Bare, Baniva, Yavitero, Warekena). Ramirez (2001) propose 3 subdivisions: Japurá-Colombia (with most languages), upper Rio Negro (Baré) and upper Orinoco (Baniva and Yavitero). The Japurá-Colombian is further subdivided in Baniwa-Korripako-Tariana, Warekena, Piapoco-Achagua, Kabiyari, Yukuna, Resigaro.
The Tukanoan family is divided in two major branches, Western Tukanoan (WT) and Eastern Tukanoan (ET). An unrooted tree of the family, based on Chacon (2014) and with minor revisions in Chacon and List (2015) is given in Figure 3.

We can see that Tukanoan branches match clearly with a geographical dispersal pattern, from the West location of WT languages to the east in the ET-Eastern languages.

![Figure 3: Tukanoan languages.](image)

A relative chronology of contact induced changes in Tukanoan and Arawakan languages consists of the following layers of contact situations, presented from the most ancient and broad to the most recent and delimited (see section 1.2 for theoretical discussion regarding temporal, geographical and linguistic scope for explaining linguistic similarities):
1. PAN-NW *Pan-Northwest Amazonian traits*

2. PNA-PT *Proto Northern Arawakan (PNA) and Proto Tukanoan (PT)*

3. ARW-PET *Arawakan languages and Proto Eastern Tukanoan (PET)*

4. ARW-PWT *Arawakan languages and Proto Western Tukanoan (PWT)*

5. ARW-WT *Arawakan and some or one Western Tukanoan languages (WT)*

6. ARW-ET *Arawakan and some or one Eastern Tukanoan languages (ET)*

Patterns 5 and 6 are specific to more recent contacts, usually with a limited distribution across a well-defined area (e.g. the Vaupés linguistic area or even within sub-areas), or between only one Arawakan and one Tukanoan language (one-to-one language contact). These are discussed in section 2. Patterns 4, 3 and 2 are discussed in section 3, and pattern 1 is discussed in section 4.

Proto-Tukanoan (PT) homeland was suggested to be somewhere in the Caquetá-Japurá river (Nimuendaju 1950, Chacon 2013a, 2014). To the east, the most accepted proposals of Proto-Arawakan and Proto-Northern-Arawakan (PNA) homeland are, respectively, the adjacent areas of the Orinoco-Guainía and the Íçana basin, from where languages and cultures spread in a wave-like fashion (Wright 1992, Zucchi 2002, Eriksen 2011).

Tukanoan and Northern Arawakan languages have always been part of multilingual areas. NWA language ecology could have changed, but bilingualism and multilingual networks of cultural and linguistic exchanges can be attested by a few linguistic traits that are shared across a wide region in a great number of genetically diverse languages (pattern PAN-NW).

Ancient contacts between PT and PNA are here assumed to have taken place in about 2000BP. An age of 2500BP was suggested for both Proto-Tukanoan (PT) (Chacon 2013, 2014) and Northern Arawakan languages (Zucchi 2002, Ramirez 2001). That a similar temporal estimate for PNA and PT seems correct can be indirectly evaluated by the lexical and structural diversity in each clade, as discussed in section 3.1.

The first contact zone between Tukanoans and Arawakans was likely in the eastern part of NWA, such as in the upper Vaupés, Guaviare and, also, in lower portions of the Caquetá river. There was probably some kind of social unity and limited geographical distribution of PT speakers because there are contact induced changes that reached all Tukanoan languages in equal ways, suggesting that they occurred in PT times (PNA-PT). The reverse is not attested, as we haven’t been able to identify so far cases of PT loans in PNA. This suggests that Northern Arawakan
groups have historically outnumbered and were geographically more disperse than Tukanoans.

Other changes, though, are distinct for Proto-Western-Tukanoan (ARW-PWT) and Proto-Eastern-Tukanoan (ARW-PET); in the lexicon, they often match semantically, but differ in form. These patterns follow from two separate albeit structurally similar contact situations (see section 3), where the sociocultural motivations of contact induced changes were equivalent for ET and WT ancestral societies.

The geographical split between ET and WT languages is documented by the distinct contact induced changes in PWT and PET (ARW-PWT and ARW-PET). ET groups moved eastward, splitting from WT, and intensifying contact relations with Arawakan languages.

In the area where ET groups are located, since Koch-Grünberg (2005 [1905]) and Nimuendajú (1950 [1927]), the most accepted view that there are three general strata to this area: the first groups were the ancestors to the current hunter and gatherers or forest groups, also generically known as the “Makú”; a second layer was formed by Arawakan languages; and the third layer by the ET languages.

The arrival of the ET groups split the Northern Arawak languages in half, dividing a probable Arawakan dialect continuum. Warfare, followed by marriage alliances, fusion and fission of ethnic groups were the basis of important cultural change in subsistence, social structure and cosmology of the ET society (Chacon 2013a).

The ET languages diversified quite rapidly (with a peak at the headwaters of the Papurí, Tiquié, Paca and Pirá-Paraná rivers, the ET-Eastern languages) and supplanted Arawakan dominance over previous areas (Wright 1992). Focal areas of Tukanoan-Arawakan contact have emerged and are reflected in more recent contact induced changes, limited in the geographical scope and numbers of languages (see section 2). As a result, a very unique and hybrid cultural area was created in the Vaupes basin, where Tukanoan and Arawakan linguistic cultural traits have been interchanged (Wright 1992, Chacon 2013, Honborg and Hill 2015), in an ancient and continuous processes that has been understood as the Tukanization of Arawakans and Arawakization of Tukanoans.

WT groups are located in a fraction of their ancient territory (which used to extend close to Proto-Tukanoan homeland), as the region became heavily depopulated during the initial centuries of Spanish colonization (cf. Bellier 1994). Although nowadays no WT languages are in direct contact with Arawakan languages, contact induced changes suggest ancient contact situations (ARW-PWT). The reduction of their territory and migration of ET groups to the east might be directly related to the current presence of Boran, Witotoan and/or Karihona (Kariban) languages groups. Given that these latter languages share less similar traits with Tukanoan and Arawakan, and given the close similarities between Karihona and
Kariban languages in the Guianas (Meira 2000), it is very likely that they have integrated the NWA regional system in a more recent time.

It is possible that the latest layers of languages making their way to NWA is composed of Arawakan groups coming from lower parts of the Rio Negro in colonial times (Wright 1992, Vidal 2000). At about the same time, the Lingua Geral Amazônica (aka Nheengatu in recent times) started to make its way into NWA, first as a lingua franca of colonization, then as a first language of local Arawakan groups in the Upper Rio Negro (Rodrigues 1996). Finally, we have the arrival of Portuguese and Spanish which only took place, effectively, in the second half of the 20\textsuperscript{th} Century.

1.2 Materials, Methods and Theoretical background

This paper has used a variety of resources in order to draw a broad picture of language contact among Tukanoan, Arawakan and neighboring languages. Data for the comparative lexicon was from Payne (1991), Huber and Reed (1991), Ramirez (2001), Chacon (2013a, 2014), and Epps (2017). For the grammar, general Arawakan sources were Ramirez (2001) and Aikhenvald (1999, 2001, 2002). Tukanoan grammar patterns have been gathered from individual descriptions.

This paper also touches on key theoretical issues in the study of language contact, such as (i) determining whether patterns are shared by contact or descent; (ii) the directionality of contact induced changes; (iii) what kind of bilingualism was involved; (iv) what are the sociocultural and historical basis of the contact situations.

The analysis of the lexicon, bound morphology and grammar patterns aimed at identifying borrowings (contact) or cognacy (inheritance). For this analysis we applied traditional procedures in historical linguistics and typology in order to interpret specific events and processes of language change. When similarities could not be determined within a directionality pattern, they were classified as homologies (List 2014), i.e. as evidence of language relationship, whether by contact or descent.

Statistical and computational tools were used to organize the database and analyze the lexical and structural data in search for broad scale evolutionary patterns. The resources used were Edictor (List 2017) for analyzing lexical data and Splitstree for inferring similarity networks (Huson and Bryant, D. 2006). For creating matrixes of cognate sets we followed the standard approach discussed by Dunn (2014), although we have judged cognate sets from a traditional perspective, i.e., allowing for meaning variation within the cognate set. Homology was also a useful category of language relationship when we explored large-scale patterns in the lexicon of NWA languages (cf. section 4).

The directionality of contact induced changes was determined by the distribution of homologies in different branches of the families, geographical areas and regularity of sound correspondences. Besides directionality, we add a temporal and a
geographical dimension to the analysis of the data, and inferred correlations between temporality, geographical scope and the number of languages and families. The direction of how traits diffuse is not always possible to determine, which could be due to limitations in our current knowledge or to the nature of how these traits developed in contact situations. For instance, in “multilateral” contact situations, a common trait might have developed in a many-to-many fashion, i.e. from the contribution of different languages and not having only one language as the source of diffusion as in a one-to-many fashion. The fact that there are widespread homologies does not necessarily entail they are old or too old. They could be more recent and diffused in a one-to-many relation (e.g. lingua franca) or in a many-to-many relation (e.g. multilateral relations, several languages from different families in a highly multilingual context).

1.3 Review of known cases of Tukanoan and Arawakan contacts

Most linguistic studies have focused on more localized and historically recent contact situations, especially within the Vaupés area. Broader contact scenarios encompassing more sub-regions and language families in the NWA and beyond are just recently being developed. All known cases of Arawakan-Tukanoan contacts concentrate on the ET branch only; in fact, there has been not much investigation of Arawakan and WT contacts. Until recently, very little attention was also given to the reconstruction of Proto-Tukanoan and intermediate languages.

Aikhenvald (2002) is the most detailed study of language contact between Arawakans and Tukanoans. She identifies five main cases: (i) multilateral diffusion in the traditional linguistic area of the Vaupes; (ii) unilateral diffusion from Tukano to Tariana; (iii) one to one language contact between Yukuna and Tanimuka-Letuama; (iv) one to one language contact between Baniwa-Koripako and Kubeo; (v) ET and Kabiyari in the Apaporis and Pirá-Parana area.

Regarding the (i) traditional Vaupes area, Aikhenvald discusses contact induced changes in Tariana from ET languages in phonology, verbal and nominal morphology, as well as in syntax and discourse. She argues that such contact situation has been ongoing for more than “a few hundred years”, and has been based on linguistic exogamy, no dominance relation among languages and high linguistic awareness of language boundaries. Neves (1998) draw similar conclusion on the analysis from an archaeologica and ethnological point of view. Multilateral diffusion among these

5 The main focus of Aikhenvalds research was on (i) and (ii); she also provides important analysis from secondary data to situation (iii), and less so to (iv) and (v).
languages resulted in indirect diffusion of linguistic patterns from Tukanoan to Tariana, leading to an overall gain of grammatical complexity. Despite a strong structural convergence process, relatively few borrowings of morphemes occurred. By contrast, in the more recent (ii) Tukano and Tariana contact situation, language dominance by Tukano, language shift to Tukano by Tariana persons and disruption of linguistic exogamy system caused the loss of grammatical patterns and more cases of code-switching and direct borrowings in Tariana.

Since the ET-Tariana contact can be roughly dated as starting after 600BP (Neves, 1998), we have a reasonable proxy to estimate how fast structural contact induced changes can happen in one language in an intense contact situation. However, this situation is only a recent and very specific chapter on the Tukanoan and Arawakan contacts. In other situations, an Arawakan to Tukanoan dominance seems to hold (see section 3 and discussion below).

For (iii) Yukuna and Tanimuka-Retuarã situation, despite involving only two languages, Aikhenvald (2002) also claims that linguistic exogamy and no dominance relation resulted in similar contact induced changes as in the Vaupés. Rose et al. (2017) argues that bilateral contact between Yukuna and Tanimuka-Retuarã has developed only recently, just a few generations before the Yukuna and Tanimuka- Reutarã groups came together in the Miriti-Paraná river during the first rubber boom. Many features shared by both languages are also shared by other Tukanoan and other Arawakan languages, which points out to a much older language contact situation. There is also evidence for Yukuna and Arawakan dominance over Tanimuka-Retuarã and its ancestral language(s), contrasting with a Tukanoan overall dominance in ET-Tariana contact (Aikhenvald, 2002).

For the (iv) Kubeo-Baniwa situation, Aikhenvald suggests that language shift from previous Baniwa-Koripako speakers to Kubeo resulted in grammatical interference, such as the development of shape classifiers with animal referents. Chacon (2013b) argues that there must have been two phases of Kubeo and Arawakan contacts: the first involved extensive bilingualism and linguistic exogamy in the Querari and Cuduyari rivers, followed by gradual language shift by the Arawakan speaking groups; this is evident by the kind of contact induced changes in Kubeo, which involved many instances of direct borrowings of lexical items and bound morphemes, as well as a gain in complexity in the classifier system (see also Gomez-Imbert (1996)). We estimate that this initial phase was contemporary to the general arrival of ET to the Vaupes area, in between 1000BP ~ 600BP. The second phase, which evolved as a rapid language shift event and minimal interference (phonetics and vocabulary), was the recent migration of a Baniwa phratry to the Vaupes from the Aiyari (c. 300 ~ 150BP) due to slavery persecution in the Içana.

Stenzel and Gomez-Imbert (2009) raises seven characteristics in Kotiria (Wanano) as due to a possible influence from an Arawakan language. Due to the recent branching of Kotiria from the closely related ET languages, one could see these features as recent contact phenomena. However, from the seven potential contact induced changes, perhaps only two are demonstrably unique to Kotiria or to Kotiria and Kubeo contacts with Baniwa-Koripako. These are:
1. the \([r] \sim [l]\) alternation (in Kubeo one finds \([r] \sim [\xi]\)) as influenced by Baniwa-Koripako \(/\xi/\) phoneme;

2. \([d_\xi]\) as more frequent or the norm instead of \([j]\) from Proto-Tukanoan *j; \([d_\xi]\) is found as a variant in several ET languages, and a devoiced variant is also found in Koreguahe (Cook and Criswell 1993).

3. Aspiration of root initial voiceless stops: Baniwa-Koripako does not have aspirated stops phonemically (Ramirez 2001). They are the result of metathesis of word internal \([h]\): /nu-hadoa/ \(\sim [n^hudoa] \) ‘my mother’. In Kotiria pre-aspiration in word medial stops suffered the following change: *pehta > *p^hata. Pre-aspiration of stops was inherited, but metathesis was perhaps motivated by interference from Baniwa-Koripako. There are similar phenomena in related Tukanoan languages.\(^6\)

Three of the other remaining features were found to be shared with a number of other Tukanoan languages\(^7\). This suggests that they constitute older contact induced changes and/or inheritance of forms or patterns from the proto-language. The following points summarize these cases:

1. Use of shape classifiers with animate nouns: this is also found in Kubeo, the WT language Siona (Wheeler 1987), and somewhat marginally in Tuyuka (Vlcek 2016).

2. Pronominal pro-clitics in possessive constructions: also a tendency in other Tukanoan languages: Tanimuka-Retuarã, Desano, Tatuyo, Kubeo, Makuna, but not among WT languages.

Crucially, all of Kotiria’s features shared with an Arawakan language are also shared across other Tukanoan languages. Some of these features suggest PNA-PT or ARW-PET contacts, others are more likely to be independent events of contact between a Tukanoan and an Arawakan language, which resulted in parallel changes (i), (ii) and (iii).

\(^6\) It is also possible to articulate a contradictory view, which sees it as an internal development in Kotiria. Aspiration in general is a feature inherited from Proto-Tukanoan. In Koreguahe (WT), we see a parallel change where *p *t *k > p^h i^h k^h. Tukano also has aspirated stops, tough only in bound morphology: \(\text{ãyu-kha} \) [good-CL.BOUND] a nice ball. More importantly, it also has a tendency of root internal /h/ to suffer metathesis and appear in the initial position of the root /oho/ \(\sim [hoo] \) banana or /toha/ \(\sim t^h\text{oa}\) finish (Ramirez 1997).

\(^7\) The remaining two features were: Double negation seems a Vaupesian areal phenomena, rather than Arawakan – Kotiria contact. Initial vowel syncope was discarded by the authors.
Epps work on Nadahup contacts in the Vaupés region has also confirmed an ET dominance (see for instance Epps 2007). Furthermore, it seems that ET has influenced Hup and Yuhup more strongly than Arawakan languages did, even though contact with Tukanoan languages seems to be more recent than with Arawakan languages (Epps 2012, 2016). Epps suggests that major ET and Nadahup contacts must have occurred only after the arrival of Tukanoans to the Vaupés area, supplanting the previous Arawakan dominance, when Nadëb and Dâw had already separated from Hup and Yuhup. This conforms to the general timeline laid out in section 1.1.

In sum, we have seen that more recent Tukanoan-Arawakan contacts can be divided in two temporal layers: one correlates with the traditional Vaupes area as defined by Aikhenvald (2002) and shows greater evidence for multilateral relations. The other, more recent, correlates with the reorganization in social structure and territory in the past three centuries and is characterized by one-to-one relations. ET dominance seems to be a localized phenomenon of the central Vaupés area.

2 Ancient contact induced changes in Tukanoan and Arawakan

In this section we discuss evidence for ancient contact situations involving Arawakan, Tukanoan as well as neighboring languages. In section 3.1 we discuss the lexicon and 3.2 the grammar.

2.1 Lexicon

2.1.1 Internal diversity and distinct evolution patterns

An overall analysis of lexical distances of the basic vocabulary between Northern Arawakan, in one hand, and Tukanoan languages, on the other hand, indicate that both group of languages have similar internal diversity, which is a good proxy for determining that they must have a similar time depth (see section 1.1), and inferring other historical facts. Table 1 gives the average and standard deviations of pairwise lexical distances among all languages from each family.

<table>
<thead>
<tr>
<th></th>
<th>Average Lexical Distance</th>
<th>Lexical Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tukanoan</td>
<td>23%</td>
<td>10%</td>
</tr>
<tr>
<td>N-Arawakan</td>
<td>28%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Although Tukanoan has a lower average of lexical distances, the higher number of standard deviation shows that there is great variation among some languages.
This internal variation is related to a combination of factors: (i) isolation by distance, e.g., geographical split between WT and ET languages, and Kubeo and Tanimuka as more peripheral to the Vaupes area; (ii) a great number of closely related languages clustering as major nodes in the family, such as ET-Eastern languages. Given that Eastern-ET languages have very intense intermarrying patterns, languages are constantly converging. However, if borrowing is truly avoided among these languages as commonly thought (as in Sorensen 1967, Aikhenvald 2002), so their close similarity must be due to a recent punctuation event.\(^8\)

The Arawakan mean of lexical distance could be revealing of greater diversity, perhaps correlating with more language contact situations with unrelated languages or a time depth a little longer than Tukanoan. The low standard deviation might be related to the fact that Arawakan languages might had been in continuous contacts throughout its history, suggesting that the ET split movement into the Vaupés and Apapóris is a recent event. The continuous contacts among Arawakan languages have support in the wave model of dispersal discussed in section (section 1.1). This is also confirmed by observing the present distribution of some Arawakan languages over broad areas (such as Baniwa-Kuripako and Tariana in the past, for instance). This suggests that the Arawakan dispersal has created dialect chains over wide areas, which correlates with the star-like shape of Northern Arawakan branching into geographical areas.

On the other hand, Tukanoan tree structure is revealing of a migration pattern, where each branch represents a different geographical area where speakers have migrated to. Thus, geography, specially the direction from west to east seems to account for Tukanoan clade structure.

### 2.1.2 Shared lexicon between Arawakan and Tukanoan

Ongoing research into the shared lexicon between Arawakan and Tukanoan languages has revealed that there has been a considerable amount of lexical borrowing throughout their common history, since Proto-Tukanoan. Some lexical similarities are shared in a wider multilingual setting while others are from more limited bilateral contact situations.\(^9\)

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\(^8\)One should be able to test effects of contact with languages that used to be on the Uaupes basin before the current ET languages there. They were likely Arawakan (Wright 1992), or, perhaps, it was just the language of the Buopé indians, who were identified in the first historical records as the dominant group of the Vaupes, or even a hybrid contact culture between Tukanoan and Arawakan (Wright 1992).

\(^9\)Ramirez (2001) provides a fair amount of lexical homologies between the Arawakan and Tukanoan families, for which he presumes an ancient shared history between them, with no conclusive evidence whether that would be due to contact or common descent. We reviewed his analyses, confirmed a few of the alleged shared traits and added a few more cases.
In a specific study comparing Kubeo and Baniwa-Kuripako-Tariana, Chacon (2013b) has shown that Kubeo borrowed vocabulary from various cultural domains, such as fauna, flora, religion, kinship, and more. In a more recent study on Tanimuka and Yukuna contacts, Rose et al. (2017) identified 35 words also with diverse semantics, shared by both languages out from Huber and Reed (1992) list of 375 concepts. Table 2 summarizes the main figures and directionality patterns:

Tab. 2: Yukuna and Tanimuka figures of lexical homologies and directionality patterns.

<table>
<thead>
<tr>
<th><strong>Directionality Pattern</strong></th>
<th><strong>Tokens</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yuk→Tan: Borrowing from Yukuna to Tanimuka</td>
<td>6</td>
</tr>
<tr>
<td>Tan→Yuk: Borrowing from Tanimuka to Yukuna</td>
<td>1</td>
</tr>
<tr>
<td>Arw→Tan: Borrowing from an Arawakan language, other than Yukuna, to Tanimuka</td>
<td>4</td>
</tr>
<tr>
<td>Tuk→Yuk: Borrowing from a Tukanoan language, other than Tanimuka, to Yukuna</td>
<td>1</td>
</tr>
<tr>
<td>Tan&lt;-&gt;Yuk: Unknown directionality, involving Tanimuka and Yukuna only</td>
<td>2</td>
</tr>
<tr>
<td>Arw&lt;-&gt;Tuk: Multilateral directionality, involving other languages and families</td>
<td>21</td>
</tr>
</tbody>
</table>

These results show a tendency for Yukuna dominance, similar to Baniwa’s dominance in the contact situation with Kubeo. In both situations, the pattern of lexical and grammatical diffusion suggests intense bilingualism in the Tukanoan and Arawakan language.

In addition, it is clear that most of the shared lexicon is reminiscent of widespread multilingualism in the Northwest Amazon, where words and grammar patterns were shared across a wider region and set of languages. Hence, a more modern Yukuna and Baniwa dominance contrasts with a more multilateral egalitarian system, as described by Aikhenvald (2002) for the Vaupes system.

So far, we have also found 35 cases of lexical homologies involving a greater number of Tukanoan and Arawakan languages, which are distributed along the directionality patterns in table 3, and illustrated in table 4\(^{10}\).

\(^{10}\)PNA forms are from Ramirez (2001); Proto-Arawakan forms are from Payne (1991). Tukanoan forms are by the author.
Tab. 3: Arawak-Tukanoan figures of ancient lexical homologies and directionality patterns.

**PAN-NW**: Pan-Northwest Amazonian homologies, with an unknown focal origin distributed across several languages in the area

**PNA< >PT**: lexical homologies shared since the proto-languages, widely and exclusively distributed across Tukanoan and Northern Arawakan languages

**ARW > ET&WT**: words for the same concepts were independently borrowed by ET and WT languages from distinct Arawakan sources

**ARW > PET**: borrowings from an Arawakan language to Proto-Eastern Tukanoan

**ARW > PWT**: borrowings from an Arawakan language to Proto-Western Tukanoan

Tab. 4: Illustration of main patterns of Arawak-Tukanoan lexical homologies.

<table>
<thead>
<tr>
<th>PET</th>
<th>PWT</th>
<th>PT</th>
<th>PNA</th>
<th>Proto-Maipure</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAN-NW</td>
<td>'kii(i)</td>
<td>'kii</td>
<td>**'kii(i)</td>
<td>*kaini, *kini</td>
<td>**'kani</td>
</tr>
<tr>
<td>PNA&lt; &gt;ARW</td>
<td>*jepa</td>
<td>*jiha</td>
<td>**jepa</td>
<td>*dzipahi</td>
<td>**'kipa̱ji</td>
</tr>
<tr>
<td>PNA&lt; &gt;ARW</td>
<td>*nai</td>
<td>*nai</td>
<td>**'nai</td>
<td>*ndaiapi</td>
<td>-</td>
</tr>
<tr>
<td>ARW &gt; PET&amp;PWT</td>
<td>*dase</td>
<td>*jãase</td>
<td>-</td>
<td>*jaase</td>
<td>-</td>
</tr>
<tr>
<td>ARW &gt; PET&amp;PWT</td>
<td>*kude</td>
<td>*tuku</td>
<td>**'kute **tuku</td>
<td>*kuate tuke Baniwa</td>
<td>-</td>
</tr>
<tr>
<td>ARW &gt; PET</td>
<td>*bapi</td>
<td>-</td>
<td>-</td>
<td>*papi</td>
<td>-</td>
</tr>
<tr>
<td>ARW &gt; PWT</td>
<td>-</td>
<td>*k&quot;etsu</td>
<td>-</td>
<td>*keetsu</td>
<td>-</td>
</tr>
</tbody>
</table>

The patterns PAN-NW and PNA-PT reveal that Tukanoan and Arawakan contacts are as ancient as Proto-Tukanoan and, in addition, that they must be considered as part of a larger regional system. The data below illustrate a PAN-NW homology of the word for “heavy” (relevant parts of the words are underlined).

Tab. 5: Pan-Northwestern Amazonian Homology for the word for “heavy”.

<table>
<thead>
<tr>
<th>FAMILY</th>
<th>LANGUAGE</th>
<th>WORD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arawakan</td>
<td>Achagua</td>
<td>kadukunii</td>
</tr>
<tr>
<td>Boran</td>
<td>Bora</td>
<td>pʰatuμukʰˈtun</td>
</tr>
<tr>
<td>Chibchan</td>
<td>Chimila</td>
<td>n-dikko?</td>
</tr>
<tr>
<td>Chocoan</td>
<td>Wounaan</td>
<td>tʃuˈkhu</td>
</tr>
<tr>
<td>ET</td>
<td>Tukano</td>
<td>diki</td>
</tr>
</tbody>
</table>
Cases of PNA< >PT contact is not given any particular directionality pattern, because we still need more evidence to confirm them. In the case of words as “land, below” it is perhaps possible to classify it as PNA > PT because that word reconstruct to Proto-Arawakan, allegedly older than PT.

The lack of major figures indicating loans from Tukanoan to Arawakan is consistent with an overall dominance of Arawakan languages. This contrasts with the Vaupés situation where ET groups have been the source of borrowings and indirect diffusion to Tariana. However, more research into Northern Arawakan languages is necessary in order to truly determine the directionality of widespread homologous words.

Cases of ARW>PWT&PET show borrowing in a stage where the two branches of the family were separated. In “toucan”, for instance, the PWT form is more similar to Yukuna jáse, while the PET form is more similar to Mandawaka dase (Ramirez 2001). It is also remarkable to see independent borrowings into Western Tukanoan languages, given that these languages barely hold any present contact relations with an Arawakan language.

The semantics of these borrowings involve property concepts (4), birds (5), forest animals (6), aquatic animals (3), plant (2), utensils (2), body part (6), verbs (5) and a few others. These semantically diverse borrowings, similar to what has been found with Tanimuka and Kubeo, are revealing that language contact affected all kinds of vocabulary, not restricted to a certain cultural area.

2.2 Grammar

In this section we discuss three cases of contact induced changes in Tukanoan grammar as the result of Arawakan influence. These are: anaphoric and cross-referencing forms, system of nominal classification in subject-verb agreement and possession strategies. The first case relates to PAN-NW and PNA-PT contact situations, the second with ARW-PWT and the third with ARW-PET/ET languages.
2.2.1 Anaphoric and Cross-referencing forms

Table 6 gives a list of anaphoric and cross-referencing forms in selected Arawakan and Tukanoan languages.

Tab. 6: Tukanoan and Arawakan similarities in anaphoric and cross-referencing forms.

<table>
<thead>
<tr>
<th>3Fem</th>
<th>3Msc</th>
<th>3 Neut / 3 In</th>
<th>3 Pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tariana</td>
<td>du-</td>
<td>di-</td>
<td>i- di-</td>
</tr>
<tr>
<td>Baniwa</td>
<td>ro-</td>
<td>li-</td>
<td>i- li-</td>
</tr>
<tr>
<td>Yukuna</td>
<td>ru-</td>
<td>ri-</td>
<td>ri-</td>
</tr>
<tr>
<td>Resígaro</td>
<td>do-</td>
<td>gi-</td>
<td>gi-</td>
</tr>
<tr>
<td>Kubo</td>
<td>ō</td>
<td>i-</td>
<td>i-di-</td>
</tr>
<tr>
<td>Tanimuka</td>
<td>i-ko</td>
<td>i-ki</td>
<td>i-di- (which?)</td>
</tr>
<tr>
<td>Tukano</td>
<td>ko</td>
<td>ki</td>
<td>ti-</td>
</tr>
<tr>
<td>Koreguahe</td>
<td>i-kho</td>
<td>i-khi</td>
<td>i-</td>
</tr>
</tbody>
</table>

PAN-NW corresponds to the sharing of i-, ti-, di-, li, ii- in 3rd person in several Northwest Amazonian languages.

The second layer is the contact induced changes in PT, notably on the 3rd plural and the feminine versus non-feminine. There is a perfect match of form and meaning in both languages. Feminine and non-feminine contrast based on o/u and i/i can be reconstructed to PT and is one of the most sable inflection features for nominal and verbal morphology in these languages (Chacon 2015). The same pattern is also reconstructed to Proto-Arawakan (Aikehnvald 2002). This would have involved direct borrowing of morphemes and patterns of grammar. The plural marker is also reconstructable to PT and Proto-Arawakan. Hence, by similar reasoning, we interpret it as a borrowing into PT.

When PT borrowed these forms and categories, it already had an animate versus inanimate distinction. Hence, plural marker *na was used – and continues to be used – only with animate referents, specially with human nouns. Feminine and non-feminine too became a privative opposition only to animate nouns. Thus, while in Arawakan language non-feminine forms are used both with humans, animals and inanimates, in Tukanoan, inanimates and non-feminine animates have different exponence in inflectional and derivational systems (Chacon 2015). Such a sharp difference between Tukanoan and Arawakan nominal classification system is a diagnosis of borrowing of a grammatical pattern in WT languages verb-subject agreement, as will be discussed below.
2.2.2 Nominal Classification in Subject-Verb Agreement

The ANIMATE and INANIMATE distinction as well as FEMININE and NON-FEMININE in Animates only are pervasive in all levels of Tukanoan languages grammar. The sole exception to this pattern is subject-agreement in WT verbs. In these verbs, the morpheme coding 3rd person singular can refer to animates and inanimates. This is exactly the Arawakan pattern, but radically diverse to the ET pattern, as well to WT copula-verbs and nominal morphology in all Tukanoan languages. Table 6 summarizes the relevant patterns of subject-verb agreement in Tukanoan and Arawakan languages (cf. Chacon 2015, Aikhenvald 2002). Shaded cells indicate different syncretism patterns.

Tab. 7: Subject-verb agreement suffixes in 3rd person.

<table>
<thead>
<tr>
<th>Types</th>
<th>3IN</th>
<th>3AN.MSC</th>
<th>3AN.FEM</th>
<th>3AN.PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARAWAKAN BANIWA</td>
<td>li</td>
<td>li</td>
<td>ro</td>
<td>na</td>
</tr>
<tr>
<td>WT – VERBS SIONA</td>
<td>pi</td>
<td>pi</td>
<td>ko</td>
<td>wi</td>
</tr>
<tr>
<td>COPULA SIONA</td>
<td>?i</td>
<td>pi</td>
<td>ko</td>
<td>?i</td>
</tr>
<tr>
<td>ET–VERBS BARASANA</td>
<td>bi</td>
<td>mi</td>
<td>mo</td>
<td>ma</td>
</tr>
<tr>
<td>COPULA KUBEIO</td>
<td>bu</td>
<td>be</td>
<td>be</td>
<td>bu</td>
</tr>
</tbody>
</table>

The WT-Verbs type seems to be an innovation in Tukanoan family. This is confirmed by the WT copula paradigm, which has the same animacy pattern as verbs and copulas in ET languages. Although the extension of 3rd person to other categories in the pronominal and agreement systems is frequently attested cross-linguistically, in Tukanoan this has not taken place elsewhere, where a higher contrast between ANIMATE and INANIMATE is the norm. Hence, this seems to be a case of structural leveling between PWT towards the Arawakan pattern.

2.2.3 Possession strategies

In this section we provide new insights into the evolution of possession strategies in ET languages\textsuperscript{11}. The analysis shows that ET languages converged to an Arawakan

\textsuperscript{11}This section is largely based on Stenzel (2013), who gives a very detailed typological picture of nominal possession in Tukanoan, Northern Arawakan and Nadahup languages. She provides excellent discussion for long time depth interactions, where the development of a system of personal pro-clitics and an alienable vs. inalienable distinction has affected the ET and Nadahup languages in different ways. Another pattern attributed to Arawakan languages has been the procliticization of pronouns (as in many ET languages) or development of personal prefixes, as in Kubeo and Tanimuka (Aikhenvald 2002). This seems be a phenomenon broader than possession, but yet reveal multiple foci of Arawakan influence into ET languages.
pattern of alienable vs. inalienable distinction. This was coupled with a creation of a new construction for alienable possession and the borrowing of for use in those constructions. The old juxtaposition pattern, shared with WT languages, became restricted to inalienable possession only. The following examples illustrate the two possession patterns in ET languages:

(1) Inalienable – Juxtaposition - Tukano

\[ \text{mi} \text{i} \text{ paki} \]
\[ 2sg \text{ father} \]
\( \text{‘your father’} \)

(2) Alienable – Possessive morpheme - Tukano

\[ \text{mi} \text{i} \text{ yaa wii} \]
\[ 2sg \text{ POS house} \]
\( \text{‘your house’} \)

In Arawakan languages, possession for alienable and inalienable nouns also have different constructions. With the inalienable nouns, a personal prefix concatenates with the nominal root, whereas with alienable nouns a set of derivational suffixes are added to the noun root in addition to the personal prefixes. This is illustrated below:

(3) Prefix – Inalienable – Baniwa (Ramirez 2001)

\[ \text{no-kaapi} \]
\[ 1sg \text{-hand} \]
\( \text{‘my hand’} \)

(4) Prefix+Sufix – Alienable – Baniwa (Ramirez 2001)

\[ \text{no-tsino-ni} \]
\[ 1sg \text{-dog-der} \]
\( \text{‘my dog’} \)

WT languages only use juxtaposition and do not distinguish between alienable and inalienable possession, thus in Maihiki yi wèè ‘my house’ and yi ħaki ‘my father’ are equally marked by juxtaposition (Farmer 2015).

For every Tukanoan language with a possessive morpheme there is another Arawakan language with the same morpheme:
While Kubeo and Arawakan i clearly match in form and function (Chacon 2013), there are still a structural difference: in Kubeo the morpheme is usually attached to the possessor, as in *i-i piri* ‘his hand’ (he-pos hand), and in Baniwa it is attached to the possessed noun *Pedro i-kaapi* ‘Pedro’s hand’. ET *ya* has considerable differences from the Baniwa and Kuripako use of the related morpheme, the latter being restricted to possessive predicate (Stenzel 2013). Likewise, in Yukuna, *rika* is the 3rd person personal pronoun, but in Tanimuka it was borrowed as a genitive used in predicative possession or in adnominal possession when the possessed noun is a topic:\(^{12}\):

\[(5)\] Predicative possession

\[
\text{isi-a mamá-ka wiropái-á Ine-rika tiri-koá}
\]

\[
\text{DEM-CL new-CL knife-CL Ines-GEN cracked-PST}
\]

‘This new knife of Ines cracked’

\[(6)\] Adnominal possession

\[
\text{isi-a sáya mamá-ka yi-riká}
\]

\[
\text{DEM-CL dress new-N 1sg-GEN}
\]

‘This new dress of mine’

The analysis is that *rika* occupies the position of a fronted possessed noun; hence it might have started as a coreference device (as it is used in Yukuna) and was reanalyzed as a genitive marker.

This suggests that Tukanan languages borrowed a grammatical pattern and grammatical morphemes along with it, though yet created their own types of possessive constructions. This is indicative of high levels of bilingualism, with clear knowledge of Arawakan and Tukanan grammatical profile, so that an abstract category (alienability) was borrowed, leading to the creation of a new construction that uses morphemes from the donor language, but within a different morphosyntactic context. This is quite similar to the evolution patterns in Tariana in contact with ET languages in the traditional Vaupés system. The only difference is the directionality: possession shows a more ancient dominance of Arawakan languages over ET.

\(^{12}\)This analysis has been elaborated with the team of colleagues investigating Yukuna and Tanimuka contact: Françoise Rose, Natalia Eraso, Magdalena Lemus and the author. The data is from Natalia Eraso research on Tanimuka. Any mistakes are of my entire responsibility.
3 Large scale linguistic interactions in NWA

A series of quantitative studies were conducted in vocabulary and structural data on Tukanoan, Arawakan and other families in NWA and Northern South America. They reveal in a broad scale the kinds of lexical features that are shared by languages of the same or distinct linguistic families. Many of the shared vocabulary are part of the PAN-NW networks, as illustrated in section 3.1. These networks are illustrated in the following neighbornet figures, computed on the basis of lexical homologies (see section 1.2), from data in Huber and Reed (1991). Figure 4 shows the similarities between languages based on 42 items of the basic vocabulary. Figure 5 is based on a set of 95 items of the cultural vocabulary. Figure 6 shows the similarities between linguistic families – rather than individual languages – for both basic as well as cultural vocabulary.

Fig. 4: Neighbornet from 42 items from the Basic Vocabulary (ASJP list).

Despite the Tukanoan data in this source is high quality, there are unfortunate gaps in Arawakan languages, as well as Nadahup languages. For phonological reconstruction, the source is also variable across language families, as some have used a more phonemic writing and others a more phonetic one.

Branch lengths reflect amounts of distinct pattern for a clade. Reticulations indicate shared patterns among set of languages.

13 Although the Tukanoan data in this source is high quality, there are unfortunate gaps in Arawakan languages, as well as Nadahup languages. For phonological reconstruction, the source is also variable across language families, as some have used a more phonemic writing and others a more phonetic one.

14 Branch lengths reflect amounts of distinct pattern for a clade. Reticulations indicate shared patterns among set of languages.
Figure 4 reflects a high degree of lexical differentiation among the languages. All major families are clearly depicted in the overall lexical distances. Some lower reticulations, though, suggest a distant kind of language relationship, whether by contact or descent, and are indicated by *quote and italics*. This is true for Ashman’s “Witototoan” family encompassing all Boran and Witototan languages (Aschmann...
Arawakan and Tukanoan contacts in Northwest Amazonia prehistory

Contatos Tukano e Aruák na pré-história do Noroeste da Amazônia

the “Maku-Puinave” grouping of Nadahup, Kakua-Nukak and Puinave, all distinct families in more recent studies (Epps and Bolaños forthcoming); and for some tight connections in the underdifferentiated languages in the Colombia and Equatorial Andes and its slopes, also encompassing Cariban languages.

Figure 5, on cultural vocabulary, also reflects well the linguistic families of the region, but we observe now more clearly a nesting pattern of linguistic families within geographical or cultural regions, the major divide being a “Low Land Northern South America” area versus a “High Land Northern South America” area.

In both figures 4 and figure 5, Tukanoan languages are more highly differentiated from other families than the Northern-Arawakan languages are, which, in general, show greater similarity to other families. This can be interpreted as evidence that Northern-Arawakans have more intense linguistic interactions with unrelated languages than Tukanoan.

In Figure 5, where the basic and cultural vocabulary data from individual languages were grouped together into linguistic families, which were then treated as the basic taxa for network computation, we clearly see a combined pattern of geography and cultural regions as well: the “NWA-Agriculturalists” (Northern-Arawakan, Tukanoan, Boran and Witotoan), the “Hunters and Gatherers” (Nadahup, Puinave and Kakua-Nukak), the “Chibchan Sphere” (Chocoan, Guahiboan, Barbacoan and Chibchan), the “Quechuan Sphere” (Inga, Paez and Kamsá), and Cariban and Sáliba-Piaroa as outliers.

Combined, Figure 5 and 6 suggest that the lexical affinities between ET and Northern-Arawakan are revealing of more intense (and perhaps older) cultural interactions, seconded by Boran and Witotoan languages. The closer similarities between the “horticulturalists” Arawakan, Tukanoan, Boran and Witotoan contrast with languages of the “Hunter and Gatherers”, which despite being located in the same geographical region and having a comparable (or even older) time depth of cultural interactions with Arawakans, show much less similarity to the other NWA families. This can be explained by an asymmetric pattern of social relations between the riverine/agriculturalists Tukanoan, Arawakan (and to some degree also Boran and Witotoan), on the one hand, and the “Hunter and Gatherers” on the other (Wright 1992, Epps and Bolaños forthcoming). The situation of Karihona also show less intense cultural interactions with the other languages families, which might be due to a more recent arrival in the region and distinct social patterns of interaction. As for Sáliba, the relative amount of lexical similarities with Arawakan

15 As a side note, the Guahiboan family appears more closely to the “Chibchan Sphere” (Adelaar and Muysken 2007) in figure 4 and 5, which is likely due to contact induced in cultural vocabulary from Chibchan to Guahiboan languages.
and Tukanoan is revealing of older cultural interactions, contrasting with its present more distant location from the central region in NWA.

Exploring further the phylogenetic analysis of the data set used for creating figure 6, when we assume Arawakan as an out-group to the rest of NWA languages, we get a rank of language families that show greater to lesser lexical similarities with respect to Arawakan: ET > WT > Boran > Witotoan, whereas Nadahup, Kakuka-Nikak, Puinave, Sáliba-Piaroa and Karihona show less lexical similarities. When either ET or WT is assumed as an out-group, Arawakan languages appear as the most lexically similar to Tukanoan, followed by Boran and Witotoan, whereas the remaining languages are less similar to Tukanoan.

This shows that Tukanoans and Arawakans have the most intense contact relationship in NWA. It still remains to be seen how much Tukanoans could have influenced Arawakan languages in the past, since most of the evidence up to this point is for bilateral or unilateral contact induced changes from Arawakan to Tukanoan.

It is important, though, to highlight that Tukanoan contacts in NWA and neighboring areas do not always involve contact with Arawakan languages. For instance, the PAN-NW lexical homology in the concepts “house” and “roof” in table 8 are evidence for a wide network in Northern South America, excluding Arawakan languages.

Tab. 8: PAN-NW homologies with no Arawakan participating language.

<table>
<thead>
<tr>
<th>Family</th>
<th>Language</th>
<th>Concept</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cariban</td>
<td>Karihona</td>
<td>HOUSE</td>
<td>muina</td>
</tr>
<tr>
<td>Cariban</td>
<td>Yukpa</td>
<td>HOUSE</td>
<td>mijii</td>
</tr>
<tr>
<td>Guahiboan</td>
<td>Cuiba</td>
<td>HOUSE</td>
<td>bo mijii</td>
</tr>
<tr>
<td>Guahiboan</td>
<td>Hitnu</td>
<td>HOUSE</td>
<td>mankii</td>
</tr>
<tr>
<td>Guahiboan</td>
<td>Playero</td>
<td>HOUSE</td>
<td>bo maxii</td>
</tr>
<tr>
<td>Kakuka-Nukak</td>
<td>Kakua</td>
<td>HOUSE, ROOF</td>
<td>mi</td>
</tr>
<tr>
<td>Kakuka-Nukak</td>
<td>Nukak</td>
<td>HOUSE</td>
<td>mijii</td>
</tr>
<tr>
<td>Kamsa</td>
<td>Kamsá</td>
<td>ROOF</td>
<td>bonxanana</td>
</tr>
<tr>
<td>Nadahup</td>
<td>Hup</td>
<td>HOUSE</td>
<td>moj</td>
</tr>
<tr>
<td>Puinave</td>
<td>Puinave</td>
<td>HOUSE, ROOF</td>
<td>mo</td>
</tr>
<tr>
<td>Tukanoan</td>
<td>Barasana</td>
<td>ROOF</td>
<td>műhi</td>
</tr>
<tr>
<td>Tukanoan</td>
<td>Carapana</td>
<td>ROOF</td>
<td>műi</td>
</tr>
<tr>
<td>Tukanoan</td>
<td>Cubeo</td>
<td>ROOF</td>
<td>műi</td>
</tr>
<tr>
<td>Tukanoan</td>
<td>Desano</td>
<td>ROOF</td>
<td>műhi</td>
</tr>
<tr>
<td>Tukanoan</td>
<td>Koreguaje</td>
<td>ROOF</td>
<td>pũi</td>
</tr>
<tr>
<td>Tukanoan</td>
<td>Mailhiki</td>
<td>ROOF</td>
<td>mijii</td>
</tr>
<tr>
<td>Tukanoan</td>
<td>Siona</td>
<td>ROOF</td>
<td>pũi</td>
</tr>
<tr>
<td>Tukanoan</td>
<td>Tanimuka</td>
<td>ROOF</td>
<td>műiã</td>
</tr>
<tr>
<td>Tukanoan</td>
<td>Tukano</td>
<td>ROOF</td>
<td>műhi</td>
</tr>
<tr>
<td>Witotoan</td>
<td>Ocaina</td>
<td>ROOF</td>
<td>moʔxooʔfi</td>
</tr>
</tbody>
</table>
4 Conclusion

This paper has shown that Tukanoan-Arawakan contacts have a long-term history. We have evidence of contact induced changes since Proto-Tukanoan times, and record of continuous contacts until the present, in distinct historical and geographical settings. Despite being the two families with greater contact relations in NWA, a full picture of contact in this region must account for multilingualism and multilateral diffusion of lexical items, functional morphemes and patterns of grammar.

As we are progressively enlarging our temporal and spatial perspectives on language contact in Amazonia, it remains to be investigated with greater attention the sociolinguistic basis of the contact situations discussed in this paper. For instance, is the “Vaupesian” system the best model to explain the long-term history of linguistic diversity in NWA? Or what other social models could be at play?

The traditional Vaupes linguistic area is generally defined as a system of multilingualism, linguistic exogamy, egalitarian social status of all languages, diffusion of grammatical patterns, convergence, and gain of grammatical complexity (Aikhenvald 2002). It is important to question these points both within the Vaupes area and abroad in time and space.

First, the system seems less balanced than claimed, since all cases of contact induced changes indicate an ET > Tariana direction. Not much is yet known about Tukanoan-Tukanoan contacts (but see Gómez Imbert 1993). In a recent study, we have also questioned the scope and the essentialist approaches in the conceptualization of linguistic exogamy in the Vaupés area, seeing it not as an irrevocable principle but as a compromise between patrilinearity and social balance in local alliances (Chacon and Cayón 2013).

We have seen that elsewhere from the Vaupés, the common pattern is the Arawakan dominance over Tukanoan languages, such as in Kubeo-Baniwa, Yukuna-Tanimuka and ancient contact situations. We have also seen that there is a considerable amount of borrowings of lexical and functional morphemes, accompanied by gain of grammatical complexity. However, even with an overall Arawakan dominance, bi- and multilingualism seems to be a constant pattern in the overall regional history.

Future research shall focus on analyzing contact induced changes and ethnological data in order to explore models that could explain the long-term history of linguistic interaction in Northwest Amazonia. This should involve both top-down and bottom-up approaches to understand the dynamics of language transmission and diffusion operating from the local and bilateral to the regional and multilateral dimensions.
List of abbreviations

1 first person, 2 second person, 3 third person, AN Animate, ARW Arawakan, ARW-ET Arawakan and some or one Eastern Tukanoan languages, ARW-PET Arawakan languages and Proto Eastern Tukanoan, ARW-PWT Arawakan languages and Proto Western Tukanoan, ARW-WT Arawakan and some or one Western Tukanoan languages, CL Classifier, DEM Demonstrative, DER Derivational morpheme, ET Eastern Tukanoan, FEM Feminine, GEN Genitive, IN Inanimate, MSC Masculine, N Noun marker, NEUT Neutral, PAN-NW Pan-Northwest Amazonian traits, PET Proto-Eastern-Tukanoan, PL plural, PNA Proto-Northern Arawakan, PNA-PT Proto Northern Arawakan and Proto Tukanoan, POS Possession, PST Past, PT Proto-Tukanoan, PWT Proto-Western-Tukanoan, SG singular, WT Western Tukanoan.

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