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Stability and Change in Alignment Systems

A study of agreement patterns in Arawakan languages

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Abstract

This essay investigates change and stability in the alignment system and its expression in morphology in Arawakan languages. The verbal alignment system and the agreement-pattern of 32 Arawakan languages were compared to each other and maps showing the geographical distribution as well as the distribution in genealogical subgroups were generated. Moreover, the nominal alignment system and case-marking which occurs in two of the investigated languages were studied as well as the correlation of alignment systems, agreement-patterns and word order. It was focused on changing patterns and in the cases where no language-internal explanation of a change could be found, the languages were compared to non-related contact-languages.

It was found that the alignment system is quite stable whereas the changes that had happened were very varied. There were found changes due to internal factors and such caused by contact-languages. While internal changes affected the morphology before changing the alignment system, contact-induced changes could affect either the alignment system, or the morphology or both of them.

Keywords: language change, stability, morphology, alignment system, Arawakan, Maipurean, language contact, areal diffusion

Preface

The study at hand was inspired by and is part of the on-going research in the sub-project “Historical language change and cultural identity: a case in Amazonia” of the Centre for Cognitive Semiotics (CCS) at Lund University. I would like to thank the researchers working on the project that I could use their data. In particular, I want to thank Love Eriksen for helping me through the confusion of language names and generating the beautiful maps. A very special thanks goes to Arthur Holmer – patiently, he guided me through the chaos of ergative, accusative, split-ergative and active-stative systems and succeeded to motivate me again and again... Thank you, vielen Dank, this study would not exist without a super supervisor!

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List of abbreviations

A	transitive subject
acc	accusative
DECL	declarative
dl	dual
excl	exclusive
fem	feminine
inan	inanimate
incl	inclusive
m	masculine
nfem	non-feminine
O	object
P	= O
p.c.	personal communication
pl	plural
R	root
S	intransitive subject
S	subject (in word order, e.g. SVO)
S _a	subject of an intransitive clause, grammatically treated like A
sg	singular
S _{io}	subject of a verb of physical states (in Tariana)
S _o	subject of an intransitive clause, grammatically treated like O
S _p	= S _o
V	verb
*	non-existent pattern / reconstructed form

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1. Introduction

Languages are changing constantly. Intuitively, speakers are quite conscious about changes in the lexicon while grammatical changes mostly pass unnoticed. Nonetheless, even grammar is changing significantly, resulting in the large diversity of grammatical systems we can find in the world's languages. Yet, some parts of grammar seem to be more stable than others. That would mean, that genealogically related languages rather share certain parts of grammar – the more stable ones – while they differ in others. But which parts are more immune against change and which are less? What is happening to these differing parts? Are they changing on their own, due to language-internal factors, or are they affected by genealogically unrelated languages spoken in the same area?

In this essay, I want to focus on a language family spoken in Amazonia, one of the regions of the world with the largest linguistic diversity. The Arawakan languages are spread over approximately ten countries in Amazonia, the Caribbean and Central America.¹ As there are many other language families spoken in this area, the potential for areal diffusion is enormous and one would expect a great diversity within the Arawakan language family. To investigate if this is so and to come closer to the questions posed above, namely which parts of grammar are more stable and which are more exposed to change, I will investigate the alignment system used by the Arawakan languages and the way it is expressed in morphology. That means, that the investigation will take place on two levels:

1. Which alignment system is used?
2. How is the alignment system expressed?

The collection of this data is expected to give results about which of these categories are alike in all or many members of the language family (and thereby more stable) and which of them feature a more varied pattern throughout the language family (and are thereby more exposed to change). Furthermore, there will be an investigation about which kinds of change are happening to which categories: are the changes caused by language contact or by internal factors?

¹ For details about the geographical spread, see chapter 2.1.

The aim of this essay is on the one hand to collect more data about the Arawakan language family – to be used in further research about its internal classification – on the other hand to find out tendencies in change and stability of grammar in general.

1.1. Outline

In chapter 2, there will first be given some background knowledge about the Arawakan language family (2.1.) before introducing alignment systems in general (2.2.1.) and in the Arawakan languages (2.2.2.). Thereafter, earlier research about language change and stability is shortly presented (2.2.3). Based on this, the research question introduced above shall be refined in section 2.3.

In chapter 3, method and material used for this study shall be introduced. The results of the study will be presented and discussed in chapter 4. Finally, in chapter 5, there will be drawn a conclusion from the results.

2. Background

2.1. The Arawakan language family

In recent literature, the term *Arawak* or *Arawakan languages* is widely accepted. Before, the language family was called *Maipurean* while *Arawak/an* was used for a larger group including Maipurean and other language families like Arauán languages (Facundes 2002: 81). However, according to more recent studies, “there is no linguistic ground to postulate that Maipurán (i.e., Arawakan) languages form a genealogical group with the Arauán (i.e., Arawá).” (ibid.). In this essay, the term *Arawakan languages* will be used for the language family (not including Arauán, which will be treated as a language family on its own), while *Arawak* will refer to an Arawakan language, also called *Lokono*, spoken in the Guianas (ibid.). Most Arawakan languages are referred to with different names by different sources. As there is no convention yet about which name to choose for which language, I will use the names listed on ethnologue (http://www.ethnologue.com/show_family.asp?subid=225-16) and only switch to names of other sources for those languages not mentioned there.

The language names are not the only part in research about Arawakan languages not conventionalized yet. There is even disagreement about how many languages there are, where they are spoken and

especially about how to subgroup the family. Much more investigation is necessary to establish a widely accepted subgrouping of the Arawakan languages. For this study, I use the subgrouping made by Carling et al. (2012), “a cluster analysis on 100 base lexical concepts (including pronouns, adjectives, nouns, verbs)” (ibid: 11). The language tree is shown in figure 1.

The number of languages reaches from 59 languages on ethnologue (ethnologue.com) to 85 languages according to the on-going research of the project “Historical language change and cultural identity: a case in Amazonia” of the Centre for Cognitive Semiotics (CCS) at Lund University. A number of these languages are extinct and others endangered. According to Aikhenvald (1999: 65), there are “about 40 living languages”.

As mentioned above, the Arawakan language family is spread over a large geographic area. According to ethnologue (ethnologue.com), Arawakan languages are spoken in seven countries of South America (Brazil, Bolivia, Colombia, Peru, Suriname, Venezuela and Guyana) and in Honduras and the Bahamas. Aikhenvald (2002: 281) lists also French Guiana, Belize, Guatemala and Nicaragua. In addition, she writes that Arawakan languages formerly were spoken in Argentina and Paraguay, too (ibid.). According to Rouse, “the first native American peoples encountered by Columbus in the Bahamas, Hispaniola and Puerto Rico were Arawak-speaking Taino – their language became extinct within the first hundred years of the white invasion.” (Aikhenvald 1999: 65).

In these areas, the Arawakan speakers live closely to speakers of unrelated indigenous languages. Multilingualism is widespread, due to “cultural practices such as linguistic exogamy – a custom promoting marriage between speakers of different languages” (Eriksen 2011: 276) in some areas and due to “the intensity of economic and other interaction between groups” (ibid.) in others. Only in the Amazon basin, the probable home of Proto-Arawakan (Aikhenvald 1999: 75)², there live speakers of around 300 languages which belong to more than 15 language families (Aikhenvald 2002: 2). The languages are geographically not grouped after their families but “the language map of Amazonia [...] resembles a patchwork quilt” (ibid.). Furthermore, there are also Indo-European languages (Spanish and Brazilian Portuguese) as well as Creoles spoken in the area.

Language contact is thus very varied and – in case of the indigenous languages – has been going on for a very long time. This variety results in socio-linguistically different language contact situations. It can be assumed that the Arawakan languages have influenced and have been influenced by many different

2 Aikhenvald (1999: 75): “between the Rio Negro and the Orinoco river, or on the Upper Amazon”.

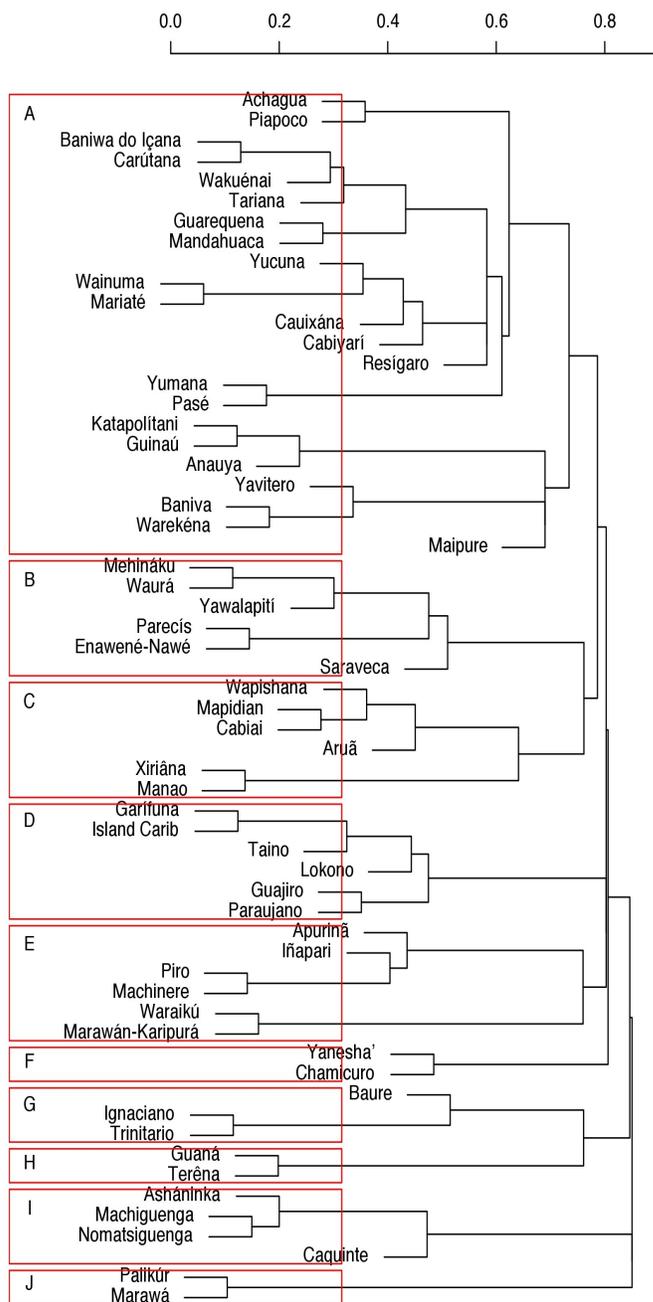


Figure 1: Language tree (Carling et al. 2012)

Baré, Asheninca Pajonal and Asheninca Pichis are not in the tree.

Arawak is called *Lokono* here, Wayuu *Guajiro* and Yine *Piro*.

languages throughout history. This, together with the geographically widespread distribution of the language family, presumably leads to large differences within the Arawakan languages. Aikhenvald (2002: 14) speaks about “the most extensive and the most diversified family in South America”.

However, the Arawakan languages share 50-70 % of the lexicon (ibid.). They are polysynthetic (Aikhenvald 1999: 80), “predominantly agglutinating with a few element of fusion” (ibid.) and “mostly suffixing, with just a few prefixes” (ibid.).

2.2. Language change and stability

A stable feature in language is one that is alike in related languages – that means that it hasn't changed (or at least not fundamentally) from how it has been in the proto-language (see 2.2.2). Change on the other hand can have internal or external causes which will be explained in detail later.

To investigate change and stability within a language family, any feature could have been chosen. The reasons to choose alignment systems will be explained below – before, it is necessary to say some words about what alignment systems are and how they can be expressed.

2.2.1. Alignment systems

The definition of *alignment system* is closely connected to the ones of *subject* and *object* and to the valency of a verb, i.e. it deals with the marking of subject and object in transitive vs. intransitive clauses. The following abbreviations³ are used in this study:

S – intransitive subject

A – transitive subject

O – transitive object⁴

According to school-book definitions, the subject is the one doing an action and the object the one that undergoes an action. If there are two constituents in a clause, it is mostly quite easy to decide which one is the subject and which one the object. For example, if we take a transitive verb like *to see*, the one who sees is the subject and the one who is seen is the object. In 'Peter sees Marcus', Peter is subject, Marcus object – which is shown by the order of the constituents as the subject in English normally

3 According to Dixon (1994: 6), these are “the most common symbols used for the three primitives”.

4 Instead of O, P is often used in literature as well, as will be seen in some citations later.

precedes the verb while the object follows the verb. In other languages, the word order is more flexible and the relation of the constituents to each other and to the verb therefore have to be shown in another way. In Latin for example, we have case marking. 'Petrus Marcum videt ' means 'Peter sees Marcus' while 'Petrum Marcus videt' means 'Marcus sees Peter'. The word order doesn't have to change here but so do the suffixes – the case marking.

So what about intransitive clauses? In most European languages, the only constituent of an intransitive verb has the same position or case marking as the subject of a transitive verb. It is 'Peter comes' in English and not *'Comes Peter' and 'Petrus venit' and not *'Petrum venit' in Latin. This system is called *accusative* and is one of the existing alignment systems. The other logical possibility is that the subject of an intransitive verb is marked in the same way as the object of a transitive verb – this system is called *ergative*. English and Latin would be ergative languages if the sentences marked with * would be the correct ones.

To make things more complicated, there are also languages that are neither consequently ergative nor consequently accusative but use an ergative system in certain circumstances, and an accusative system in others. They are called *split-ergative* languages. The conditions for the split are very varied, it can be conditioned by e.g. the semantics of the verb or of the nouns; tense, aspect or mood of the clause; if the clause is a main or a subordinate clause etc. (Dixon 1994: 70). As we will see later, many Arawakan languages are split-ergative, they follow an *active-stative* pattern, to be more precise, but this will be explained in detail in 2.2.2. The important thing for now is that in split-ergative languages, A and S follow the same pattern (e.g. the same word order or case marking) in some circumstances, while O and S follow the same pattern in other circumstances.

Another interesting thing about alignment systems is how they actually are expressed in grammar. We have seen two example above, word order in English and case marking in Latin. That means that the alignment system can be expressed by word order or by morphology (combinations are possible, too). Besides in nominal morphology as in case marking, it can also be expressed by verbal morphology, i.e. by agreement markers or pronominal affixes – as will be seen for the Arawakan languages.

2.2.2. The alignment system in Arawakan

Arawakan languages generally lack case to mark the alignment system (Aikhenvald 1999: 80), which is instead visible in the verbal affix-pattern. Aikhenvald (1999: 87) writes that “about two-thirds of the Arawak languages distinguish cross-referential prefixes and suffixes⁵” to distinguish A and S_a from O and S_o. The abbreviations A, O and S were introduced in 2.2.1. The category S (subject of an intransitive clause) is split up in two categories here: S_a (subject of an intransitive clause, grammatically treated like A) and S_o (subject of an intransitive clause, grammatically treated like O)⁶. The distinction is made by using prefixes for A and S_a while using suffixes or enclitics for O and S_o. The same set of prefixes is used for A and S_a and the same set of suffixes for O and S_o. The distinction is visualized in table 1 (Aikhenvald 1999: 86).

Table 1: The function of the affixes

Cross-referencing	Transitive	Active intransitive	Stative intransitive
prefixes	A	S _a	---
Suffixes/enclitics	O	---	S _o

The alignment system for these two-thirds of languages is split-ergative⁷, as S is treated in different ways dependent on the context. Intransitive verbs are divided in *active* and *stative* verbs depending on their semantic meaning – the alignment pattern in these languages is therefore also called *active-stative*. The use of cross-referencing affixes is exemplified in (1)-(3) (examples from Aikhenvald 1999: 89) for Baniwa do Içana, an Arawakan language spoken at the border of Brazil, Colombia, Venezuela (Aikhenvald 1999: 70). There is shown a transitive verb with prefix for A and suffix for O in (1), an intransitive active verb with prefix for S_a in (2) and an intransitive stative verb with suffix for S_o in (3)

- (1) ri-kapa-ni
 3sg.nfem+A – see – 3sg.nfem+O
 'He sees him/it.'

5 *Cross-referential prefixes and suffixes* are here affixes on the verb that refer to either the subject or object of the clause (so-called *personal affixes*, in their function comparable to agreement markers or personal pronouns).

6 These abbreviations follow Dixon (1994).

7 This doesn't seem to hold for *all* languages, though. Aikhenvald (1999: 87): “The majority of languages which distinguish cross-referencing suffixes and prefixes have a split-ergative pattern”.

(2) ri-emhani
3sg.nfem+S_a – walk
'He walks.'

(3) hape-ka-ni
be.cold – DECL – 3sg.nfem+S_o
'He/it is cold.'

As can be seen in the examples, 'to walk' is treated as an active verb in Baniwa do Içana, while 'to be cold' is treated as a stative one. Which verbs are regarded as active and which ones as stative is differing very much from language to language (Aikhenvald 1999: 86)⁸.

Until now, the facts about the alignment system and its expression are taken from the majority of the languages. To be able to make statements about stability and change in the alignment system and its expression, we need to know what it looked like at an earlier stage. As there are no written documents in ancient Arawakan languages, the only way to know what the grammar of Proto-Arawakan looked like are reconstructions – which are problematic as the language family is not investigated that well yet. Furthermore, we have to assume – due to the lack of data – that a feature that is alike in the majority of the attested languages is probably inherited from the proto-language. Further research may show if this assumption and the conclusions drawn from it are right. Though it is not attested that Proto-Arawakan really had a active-stative pattern and used cross-referential affixes to express this, languages behaving in this way will therefore be regarded as stable in the following, while languages showing other patterns are assumed to have undergone a change.

Unlike the features described so far, there exist reconstructed morphemes for the personal affixes in Proto-Arawakan. These can be seen in table 2 (Aikhenvald 1999: 88).

⁸ Aikhenvald (1999: 86) provides as an example for the extreme variation that “In some dialects of BIC [Baniwa do Içana]; 'play' is S_a; in others it is S_o”.

Table 2: The reconstructed personal affixes for Proto-Arawakan

Person	prefixes		suffixes	
	sg	pl	sg	pl
1	*nu- or *ta-	*wa-	*-na, *-te	*-wa
2	*(p)i-	*(h)i-	*-pi	*-hi
3nfem	*ŋi-, *i-	*na-	*-ŋi, *-i	*-na
3fem	*thu-, *u-	*na-	*-thu, *-u	*-na
impersonal	*pa-			
Non-focused A/S _a	*i-, *a-			
Dummy S _o /O			*-ni	

As mentioned before, two-thirds of the Arawakan languages use the system of prefixing and suffixing (according to Aikhenvald 1999: 87). That means that at least one third of the languages must have changed and that the Arawakan languages are not uniform. To investigate how and why the languages changed is one aim of this study.

2.2.3. Earlier research about language change

As can be seen in the short introduction to alignment systems given in 2.2.1.⁹, this is more than just a grammatical category. It has influence on the whole structure of a clause (how constituents are related to each other) as well as on word order and/or morphology. This makes it very difficult to make a general statement about the stability of alignment systems. This is shown in Nichols (1992: 181) study about diachronic stability¹⁰. Nichols comes to the result that “dominant alignment” has “High genetic stability.” She notes that “the stability of dominant alignment found here may appear surprising. In part this difference [to other studies] must be due to the fact that the literature on alignment change uses a variety of definitions of the alignment types and describes not only morphological but also syntactic alignment and focuses on grammatical relations as much as morphological paradigms” (ibid.). The definition of dominant alignment, she uses in her study is “primarily morphological” (ibid.).

Nichols' study is unique in this respect, that her results are based on statistical data and that she focuses on both stability and change. Other studies investigate mostly the changing elements of language. In the last 60 years, there have been plenty of attempts to establish hierarchies of which language features

⁹ For further reading, see Dixon 1994.

¹⁰ Stability over time.

are more likely to be borrowed than others (i.e. more unstable). These hierarchies differ in the content they investigate as well as in the way they are ordering the objects of investigation.

Some linguists, like Haugen, just create a hierarchy of different parts-of-speech (e.g. nouns are easier to borrow than verbs), while others, like Ross, concentrate on the grammar's different levels (e.g. lexical items are more likely to be borrowed than bound morphemes which are more likely to be borrowed than phonemes) (Curnow 2001: 417). Similar to Ross' hierarchy is the theory, proposed by among others Matras and Haig, that borrowing “proceeds 'from top to bottom'” (discourse units are borrowed first, then syntax, then morphology) (Aikhenvald 2002: 12). While the theories mentioned above do not place their 'hierarchies' in any context, there are others, like Thomason and Kaufman's, “where different features are expected to be borrowed depending on the type and strength of contact between two languages” (Curnow 2001: 417) and Moravcsik's, where seven constraints on borrowing are introduced (e.g. “non-lexical properties of a language cannot be borrowed unless lexical items have been borrowed first”) (Curnow 2001: 419).

The problems arising with the hierarchies are as different as the hierarchies themselves. For example, it is unclear if 'borrowing' means just additive borrowing or if loss of a feature is a kind of borrowing as well – and if yes, if the 'loss hierarchy' would be the same as the 'borrowing hierarchy' (Curnow 2001: 414) or rather the reversed. Moreover, there is the problem of generalization of borrowing. There are various language contact situations and one can never exclude the social, political or historical context in which language change is happening – especially as there is often no data about these factors (Curnow 2001: 419). Aikhenvald (2002: 11) writes: “None of them [the different hierarchies suggested] appears to hold as universal”.

Another claim made by many linguists is the 'structural compatibility requirement' which “states that borrowing can operate only between similar systems” (Aikhenvald 2002: 6). But sometimes, the whole structure of a language can change due to language contact. Aikhenvald (ibid.) names as an example among other changes that “an active-stative language may acquire nominative-accusative properties”. That a language can completely change a structure like its alignment system might be seen as a counter-example for the structural compatibility requirement. Still, at least some similarities in structure of the donor language and the borrowing language might be necessary to induce the change of a structure.

It is not only difficult to explain why and how languages change but often it is also difficult to tell why

languages are similar to each other. Besides borrowing, Aikhenvald and Dixon (2001: 1-4) list four causes that can lead to similarities in two or more languages: 1. Universal properties and tendencies¹¹, 2. Chance, 3. Borrowing or diffusion, 4. Genetic retention, 5. Parallel development (or convergent development).

The problem of missing data mentioned above makes it often very difficult or even impossible to find out why languages are similar to each other and to conclude language contact or genealogical relationship from these similarities. In addition, language change doesn't necessarily have only one cause, but can have happened due to “multiple causation” (Curnow 2001: 422). That means that e.g. a changing process triggered by language-internal factors is reinforced by language contact, i.e. there are several causes producing one change. This makes it even more complicated to find out why languages are similar or different to each other and how they changed to what they are.

2.3 Research questions

As contact situations and the causes for language change are so varied, we will probably not find universal rules about which parts of language are more likely to be borrowed and which are more likely to be inherited from a proto-language. But as Nichols showed in her study, it is possible to find tendencies. This is the aim of this investigation: to find tendencies about change and stability in the alignment system and its expression in grammar for the Arawakan languages. To investigate the alignment system of all features is especially interesting because it can be expressed in such different ways. The question is therefore: What part will change first – the alignment system (e.g. from ergative to accusative) or the way it is expressed (e.g. from verbal morphology to word order). Is it possible at all that only one of these parts change or does the change of alignment system has to happen at the same time as its expression? And is there always language contact involved or can we find cases where the alignment system changes without external influences, due to internal factors? Or cases where the alignment system is still the same but is expressed in another way?

11 Note that Dunn et al. (2001) in contrast to earlier research write that “Linguistic diversity does not seem to be tightly constrained by universal cognitive factors specialized for language.” but instead “specific to linguistic lineages” (ibid. p. 82).

3. Method

In order to find out if and how alignment systems and their expression change, data from 32 Arawakan languages regarding these features was collected and catalogued. The languages can be found in table 3. As the data should be representative for the language family, the languages were chosen in a way that every cluster¹² of the language tree provided by Carling et al (2001) is represented¹³ but the choice of languages was of course also depending on the material available. Some of the Arawakan languages are very well described while there is hardly any data about others. As many languages are extinct, it will unfortunately not be possible to complete the collected data. The sources available differ not only in quantity but also in quality: there are descriptions of the language family in general, detailed grammars of some languages like Tariana (Aikhenvald 2003), just some paradigms for others, and only primary sources like folk tales or word lists for others.

Table 3: The investigated languages

Achagua	Guarekena	Tariana
Apurinã	Ignaciano	Terêna
Arawak	Iñapari	Wapishana
Asháninka	Island Carib	Waurá
Asheninca Pajonal	Machiguenga	Wayuu
Asheninca Pichis	Nomatsiguenga	Xiriana
Baniwa do Içana	Palikúr	Yanesha
Baré	Paraujano	Yawalapiti
Baure	Parecis	Yine
Caquinte	Piapoco	Yucuna
Cauixána	Resígaro	

The data was analyzed and catalogued to be able to recognize patterns in stability and change for the investigated features. For this purpose, the relevant data was summarized in a table (see appendix 1). It contained two columns: *Alignment system* and *expression in morphology* (of the alignment system).

¹² In the following called 'subgroup'.

¹³ Three of the investigated languages, Baré, Asheninca Pajonal and Asheninca Pichis are not in the language tree. The relationship of them to the other investigated languages is therefore taken from other sources which will be named when relevant.

The data was coded and then used to generate different kinds of maps, see figure 2 – 5 and appendix 2. The different maps showed

1. the geographic spread of the features (figure 2 and 4),
2. the correlation between both features (appendix 2),
3. the correlation between each feature and the genealogical cluster (figure 3 and 5).

By comparing genealogical cluster and geographical spread of the languages, it was possible to see if the features are typical for a subgroup or a certain area, respectively. The map with the correlation between the features was generated in order to find out if changes in these two categories occur independently or if the change of the alignment system and its expression occur together.

Data about word order had not to be collected since this work had already been done by the project “Historical language change and cultural identity: a case in Amazonia”¹⁴. By using this data, word order and alignment system could be compared in order to find out if there is a correlation between these two. The maps in figure 6, 7 and 8 show the word order in subgroups, the correlation between word order and alignment system and the correlation between word order and affix-patterns respectively.

Features were regarded as stable if the alignment system and its expression of a certain language match with the data of Proto-Arawakan as well as the majority of the Arawakan languages (see 2.2.2). Features in the languages that showed change were investigated more closely. In 4.1, the results for verbal alignment system (4.1.1) and its expression in affix-patterns (4.1.2) are presented and, as far as possible, explained by internal changes. 4.2 deals with the expression of alignment system other than in verbal morphology: nominal morphology, e.g. case-marking is dealt with in 4.2.1 and word order in 4.2.2. In 4.3, finally, languages which have undergone changes that could not be explained by internal factors are compared to neighboring languages in order to find out if the changes can have happened due to areal diffusion. Language maps from ethnologue (ethnologue.com) were used to find out which languages are spoken close to the concerned Arawakan languages. These maps can be found in appendix 4. To be complete, even the changes for which an internal explanation was found, the languages should have been compared to languages in the area as multiple causation can be considered as well. This was unfortunately not possible in this framework.

In 4.3, the results were summarized before a final conclusion was drawn in 5.

¹⁴ A sub-project of the Centre for Cognitive Semiotics (CCS) at Lund University.

4. Results and discussion

4.1. The verbal alignment system

For the verbal alignment system, e.g. the alignment system expressed by verbal morphology, there occur four possibilities in the investigated languages. The alignment system can be a) active-stative, b) accusative, c) active-stative with a split depending on aspect or d) active-stative with a split depending on if the verb occurs in a subordinate or main clause. a) means, that there is a split depending on the semantics of the verb, see section 2.2.2. b) means that there is no split, i.e. all S are treated in the same way, namely like A. In c) and d), the split depending on the semantics of the verb is not the only one, but there are other factors which decide if S is treated like A or O. For c), the additional split depends on the aspect.¹⁵ If the verb is in progressive aspect, the active-stative system (as described in 2.2.2) is used (Aikhenvald 1999: 89f). If the verb is in stative aspect, however, all S are treated like O (Aikhenvald 1999: 90), which means that an ergative system is used. For d), the additional split depends on if the verb occurs in a subordinate or main clause. In sub-clauses, the active-stative system is used (Aikhenvald 1999: 90). In main clauses, S is treated like O, which makes the system ergative (for a more detailed description of these languages, see chapter 4.2).

Of the 32 investigated languages, 19 use the active-stative system (a), 5 the accusative one (b), 6 use the active-stative system and have a split depending on the aspect (c) and 2 use the active-stative system and have a split depending on clause-type (d). The geographic spread of the alignment systems can be seen in figure 2.

¹⁵ Besides the aspect, the discourse function affects the choice of the affix as well. (Aikhenvald 1999: 90). It is not unusual for Arawakan languages that the discourse-function has influence on the use of affixes – even if it doesn't affect the alignment system in most languages. A table with some of these languages is presented in table 13, appendix 5. For a further discussion, more data will be needed.



Figure 2: Geographic spread of the verbal alignment¹⁶

Table 4: Verbal alignment system

	Verbal alignment system	number of languages
a)	active-stative	19
b)	accusative	5
c)	active-stative + aspect-split	6
d)	active-stative + clause-split	2
	Total languages:	32

¹⁶ In all maps (figure 2-8 as well as appendix 2), there is found the language Pareci-Kabishi. This was caused by a data-mistake. The symbols showed in the maps actually stand for the language Parecis. Unfortunately, there was not enough time to correct the mistake in the maps.

As can be seen in table 4, more than half of the languages use the active-stative system. Even the 8 languages in groups c) and d) have the active-stative system, although only in certain circumstances (in progressive aspect for c), in subordinate clauses for d)). So, all in all, 27 of 32 languages show an active-stative pattern. Looking closer at the languages that evolved a split besides the active-stative one, it can be seen that the six languages in c), Machiguenga, Nomatsiguenga, Caquinte, Asháninka, Asheninca Pichis and Asheninca Pajonal, called Campa-languages by Aikhenvald (1999), are closely related to each other, according to Carling et al. (2011), they belong to the genealogical subgroup I¹⁷, see figure 3. All of them are spoken in the pre-Andine area in Peru. Also the two languages in d) (Wayuu and Paraujano) are closely related to each other; they belong to subgroup D according to Carling et al. (2011) and are spoken close to each other, at the border of Colombia and Venezuela. The five languages using the accusative system are Palikúr, Wapishana, Resígaro, Yawalapiti and Parecis. These five languages are geographically wide spread: Palikúr is spoken at the border of French Guiana and Brazil (Aikhenvald 1999: 68), Wapishana at the border of Brazil and Guyana (ibid.), Resígaro, which is extinct, was spoken in Peru, but much further north than the Campa-languages (ibid: 70), Yawalapiti in Park Xingu (ibid: 71) which lies in the Brazilian state Mato Grosso and Parecis is also spoken in the Brazilian state Mato Grosso (ibid: 71), but far west of Park Xingu. According to Carling et al. (2011), Yawalapiti and Parecis are the only of these languages which are closely related: Palikúr belongs to group J, Wapishana to group C, Resígaro to group A, while Yawalapiti and Parecis belong to group B, see table 5.

Table 5: Genealogical relations of the accusative languages

Genealogical subgroup	Language names
A	Resígaro
B	Yawalapiti, Parecis
C	Wapishana
J	Palikúr

¹⁷ As can be seen in figure 1, subgroup I consists of the languages Machiguenga, Nomatsiguenga, Caquinte and Asháninka. According to Eriksen (2001: 42) all Asheninca-languages are closely related to these four; he calls these and Nanti due to their geographic location for “pre-Andine”.



Figure 3: Verbal alignment system in subgroups

That the active-stative system is used in such an overwhelming majority of the investigated languages from several branches of Arawakan, supports the assumption made in 2.2.2 that this alignment system was the original one, used by Proto-Arawakan. The 18 languages using it can therefore be regarded as having a stable verbal alignment system and not having undergone change. As the languages that evolved an additional split depending on aspect are closely related, the change must have happened not in every single language but once. The change probably happened before their proto-language (a daughter language of Proto-Arawakan) split up into the six languages. The same assumption can be made for the two languages that evolved an additional split depending on clause-type. For the languages using the accusative pattern, the situation is different. As of these five languages only Yawalapiti and Parecis are closely related to each other, the change to the accusative pattern must have happened four times – once in each genealogical subgroup, see table 5.

According to this, there have happened six changes: once, a split depending on the aspect was evolved, once, a split depending on clause-type was evolved and four times, the active-stative system changed into an accusative one. None of the investigated languages changed its alignment system to an ergative system but the languages that evolved an additional split, the Campa-languages, Paraujano and Wayuu,

use the ergative system besides the active-stative one, i.e. Campa-languages use an ergative system in stative aspect while Paraujano and Wayuu use an ergative system in main clauses.

4.1.1. Affix-patterns

As described in section 2.2.2, most Arawakan languages use cross-referencing affixes to distinguish between A/S_a and O/S_o. Mostly, A/S_a are cross-referenced by prefixes and O/S_o by suffixes. This pattern is schematized by A/S_a-R-O/S_o¹⁸. For the 32 investigated languages, there occur eight possibilities which are shown in table 6. Their geographical spread is shown in figure 4. Besides what is cross-referenced as suffixes and prefixes, there is also shown if there are only suffixes for third person (3) or if there are no suffixes/prefixes at all (∅). Table 6 shows as well how many languages use which affix-pattern. The data in table 6 which is also visualized on the map in figure 4, will be presented and discussed in the following order: first, pattern a), the original pattern, then pattern b) – e) which have some changes in common, then f) and g) which represent the languages that evolved an additional split and finally h), the pattern only used by one language, namely Palikúr.

Table 6: Affix-patterns

	Affix-pattern	Number of languages
a)	A/S _a -R-O/S _o	13
b)	A/S _a -R-O(3)	4
c)	A/S _a -R-∅	2
d)	A/S-R-O(3)	2
e)	A/S-R-∅	2
f)	A/S _a -R-O/S _o A-R-O/S	6
g)	R-A/S A-R-O A/S _a -R-O/S _o	2
h)	∅-R-O	1
	Total languages	32

¹⁸ Here, R is the root, A/S_a stand before the root (prefixes) and O/S_o after the root (suffixes).



Figure 4: Geographic spread of the affix-patterns

Pattern a) represents the most common pattern, it is used by 13 of the 32 investigated languages. Probably, it was the pattern used by Proto-Arawakan. The 13 languages with pattern a) can therefore be regarded as stable. Languages with pattern a) are found in the genealogical subgroups A (Guarequena, Cauixána, Baniwa do Içana), C (Xiriana), D (Arawak, Island Carib), E (Yine, Iñapari, Apurinã), F (Yanesha), G (Ignaciano, Baure) and H (Terêna). That means, that pattern a) is present in all genealogical subgroups except B, I and J. The geographical spread of the languages according to their genealogical subgroups can be seen in figure 5.

The languages with pattern b), A/S_a-R-O(3), are Achagua, Piapoco, Yucuna and Waurá. According to Carling et al. (2011), Achagua, Piapoco and Yucuna belong to the genealogical subgroup A. Waurá, on the contrary, is in subgroup B. Furthermore, Waurá is not spoken in the same area as the three other languages (see figure 5). Pattern c), A/S_a-R-Ø, occurs in the languages Baré and Tariana, which are closely related to each other¹⁹ and also to Achagua, Piapoco and Yucuna and spoken in the same area as these three. Pattern d), A/S-R-O(3), is used by the languages Wapishana and Parecis. They are neither

¹⁹ According to Carling et al., Tariana is in subgroup A. Baré is not mentioned in the language tree but according to ethnologue.com, it belongs to the same genealogical subgroup, there called Northern Maipurean – Inland. Baré is therefore counted as belonging to subgroup A in this paper.

in the same genealogical subgroup nor spoken in the same area: Wapishana belongs to subgroup C and is spoken in Guyana (ethnologue.com) while Parecis belongs to subgroup B and is spoken in the Brazilian state Mato Grosso. Parecis belongs to the same subgroup and is spoken in the same area as Waurá (pattern b)), see figure 5. The two languages with pattern e), A/S-R-Ø, are Resígaro and Yawalapiti. As Achagua, Piapoco, Yucuna (b) and also Baré²⁰ and Tariana (c), Resígaro belongs to the genealogical subgroup A. It is also spoken in the same area as these five languages. Yawalapiti belongs to subgroup B, like Parecis and Waurá. Which languages belong to which subgroup can be seen in table 7 and on figure 5.

In relation to pattern a), A/S_a-R-O/S_o, which is assumed to be the affix-pattern used by Proto-Arawakan, all the languages using the patterns b) – e) have undergone two changes: all of them lost suffixes and none cross-references S_o.



Figure 5: Affix-patterns in subgroups

20 See footnote 19!

Table 7: Changes in the affix-patterns b) – e)

Genealogical subgroup	Language name	alignment system	affixless verbs?	Suffixes left
A	Piapoco, Achagua, Yucuna	active-stative	yes	(3)
	Tariana, Baré	active-stative	yes	∅
	Resígaro	accusative	no	∅
B	Waurá	active-stative	yes	(3)
	Parecis	accusative	no	(3)
	Yawalapiti	accusative	no	∅
C	Wapishana	accusative	no	(3)

The loss of suffixes for first and second person seems to be more likely than the loss of suffixes for third person. It can be assumed that a language first loses its suffixes for first and second person before losing the ones for third person. It is more difficult to tell, however, if the languages first lost the suffixes or first stopped cross-referencing S_o . In the 32 investigated languages, there was no language found with the pattern $*A/S_a-R-O/S_o(3)$; i.e. a language that still cross-references S_o but already has lost the suffixes for first and second person, neither was a language found with the pattern $*A/S_a-R-O$ or $*A/S-R-O$, i.e. a language that doesn't cross-reference S_o anymore but still has all suffixes. This does not mean that these patterns do or did not exist at all, as not all Arawakan languages are investigated here and as there are no earlier stages of the languages attested. Probably, one (or several) of the patterns marked with * was the intermediate stage that the languages with the patterns b) – e) passed while changing from the original pattern a), $A/S_a-R-O/S_o$, to the ones they are using today. As will be shown now, there is evidence that the suffixes were lost first and the loss of the suffixes resulted in S_o not being cross-referenced anymore. This would mean, that the pattern $*A/S_a-R-O/S_o(3)$ was the intermediate step from the original pattern to the patterns of today. First, the loss of suffixes is a very common appearance in the world's languages in general. Second, we can see that suffixes have been lost in all languages using the patterns b) – e), they differ only in how many of the suffixes already have been lost. This can be regarded as one process which has gone further in patterns c) and e) which do not have any suffixes left than in patterns b) and d) which have left the suffixes for third person. The situation is quite different if we look at the differences between patterns b)/c) and d)/e). In b) and c), the

prefix cross-references A/S_a, while it cross-references A/S in d) and e). The prefix-function did not change in b) and c), while it did in d) and e). As there are no suffixes cross-referencing S_o in any of these four patterns, the languages developed different strategies to compensate this loss. Languages using either pattern b), A/S_a-R-O(3), or c), A/S_a-R-Ø, kept the distinction between intransitive stative and active verbs – as in the original pattern, only the subject of a transitive and the one of an intransitive active verb are cross-referenced by prefixes. Resulting by this, there are neither suffixes nor prefixes to cross-reference the subject of an intransitive stative verb: the languages developed verbs that do not have any personal affixes²¹. Languages using pattern d), A/S-R-O(3), or e), A/S-R-Ø, reacted in another way. As they could not cross-reference S_o by suffixes anymore, they cross-referenced it by prefixes instead. Now, both A, S_a and S_o were cross-referenced by prefixes which led to a merge of S_a and S_o to S. That A and all S are treated the same way means that these languages changed from the original active-stative alignment system to an accusative one²².

It can be summarized that in all patterns b) – e), suffixes have been lost and S_o is not cross-referenced anymore; that the languages with patterns b) and c) kept the original active-stative alignment system but instead, they cannot cross-reference all subject-constituents anymore and developed verbs without personal affixes; that the languages with patterns d) and e) still cross-reference all subject-constituents but changed the alignment system to an accusative one.

It is claimed here, that the loss of suffixes caused the other changes as the loss of suffixes is much more common in the world's languages than the change of the alignment system or the change of verb agreement. In addition, the loss of suffixes led to two different changes, while it would be very unlikely that two changes that complicated as the one of the alignment system and the one of the affix-pattern would result in the same change, namely the loss of suffixes.

If we compare the changes in all the languages in the groups b) – e) according to the genealogical subgroups (visualized in table 7 and figure 5) it can be seen that all the changes (loss of suffixes, development of verbs without personal affixes and change to accusative alignment system) happened in both the genealogical subgroups A and B. There is only one language for subgroup C, Wapishana, which has suffixes only for third person and has changed the alignment system. In subgroup A, there

21 Intransitive verbs can therefore also be distinguished in prefixed (active) and prefixless (stative) verbs (as for Tariana in Aikhenvald 2003: 67).

22 Looking at this, it is obvious that there is a causal relationship between the loss of suffixes and the non-cross-referencing of S_o. It is, though, not obvious at all, why the loss of suffixes should lead to that S_o can't be cross-referenced by the remaining suffixes for third person in the patterns b) and d) while O still can be cross-referenced. With the data of this study, it was unfortunately not possible to answer that question.

are many languages using the original system, as can be seen in figure 5, while there is only Xiriana in group C and no language using the original pattern in group B. Groups B and C are more closely related to each other than these two to group A, see figure 5. That means that A and B/C split up from the proto-language before B/C split up in the groups B and C. As one language, namely Xiriana, in B/C uses the original pattern and as the languages in B are spoken very far from A, it is unlikely that the loss of suffixes is inherited from before the split. It can therefore be assumed, that the loss of suffixes with its consequences is a change that happened independently from each other at different places. This, together with the fact that the changes (loss of suffixes and change to an accusative alignment system) are not unusual in general, points to the fact that the change is an language-internal change rather than caused by the influence of other non-related languages. To be sure of that, an investigation of other, non-related languages in the area would be necessary, as multiple causation cannot be excluded.

For both f) and g), there are different affix-patterns. These are the languages which have evolved an additional split. In f) are the languages that have a split depending on aspect (Campa-languages). In progressive aspect, the original pattern $A/S_a-R-O/S_o$ is used, while the pattern $A-R-O/S$ is used in stative aspect (Aikhenvald 1999: 89f). As in the patterns d) and e), S_o and S_a are merged to S . While S is treated like A in d) and e), it is treated like O in Campa-languages. This means that the verbal alignment system in stative aspect is ergative. So Campa-languages use an active-stative pattern in progressive aspect and an ergative pattern in stative aspect. The new developed pattern, the ergative one, is simpler than the original active-stative one as it is easier to treat all S / all intransitive verbs in the same way than to distinguish between S_a and S_o / active and stative intransitive verbs. Simplification of patterns is a very common cause for change and does not need any external explanation. It is, however, less common that languages change to ergative than to accusative systems. Even this could have internal explanations. As the split is depending on the aspect, it could be a consequence of a change in the languages' aspect system. To find out if the aspect system in the Campa-languages have changed before the split evolved, it would be necessary to investigate the Arawakan languages' aspect system in general. This would go beyond the scope of this study. The change could, of course, be caused by external factors. Therefore, there is a look on the alignment system of neighboring languages in 4.3.3.

The two languages in g) are Paraujano and Wayuu, which have a split depending on clause-type. In subordinate clauses, they use the original pattern $A/S_a-R-O/S_o$, while they use $A-R-O$ in main clauses

for verbs which are high in transitivity hierarchy and R-A/S for verbs which are low in transitivity hierarchy²³ (Aikhenvald 1999: 90). In transitive clauses, there is actually the same pattern in main- and subordinate clauses, namely A-R-O. The innovation in Paraujano and Wayuu is therefore only the pattern R-A/S. The alignment pattern in main clauses is ergative as the only S is treated like O in the transitive clause²⁴. It is not surprising that the innovation happened in the main clause, as “changes in syntactic alignment generally apply first to main clauses [...] so that subordinate clauses typically preserve archaic features.” (Dixon 1994: 192). The new, ergative pattern is a simplification of the active-stative one, i.e. the situation is similar to the one in the Campa-languages. The crucial difference is that the split does not depend on aspect but on clause-type. This and the genealogical and geographic distance of the two groups are clear evidence for that the two changes happened independent from each other. As for the Campa-languages, there could be language-internal causes for the change. But, in contrast to the Campa-languages, there are two other languages in the same genealogical subgroup D as Paraujano and Wayuu: Island Carib and Arawak, which both kept the active-stative alignment system. These two languages are spoken far from Paraujano and Wayuu, see figure 5. If the change was internal, it must have happened after Paraujano and Wayuu had split up from the other languages in D. But it is more likely that the change happened due to external influences. Comparisons to languages spoken in the same area are given in 4.3.4.

The only language that uses pattern h), Ø-R-O, is Palikúr. Of 32 investigated languages, Palikúr is the only one which does not cross-reference A/S.²⁵ There are just free personal pronouns to refer to the subject (Derbyshire 1986: 513; Launey 2003: 65ff). The affixes that cross-reference to the object are actually more complicated than the simplified pattern Ø-R-O can show. Additional to object-suffixes, Palikúr has also a set of prefixes that cross-reference the object together with an object-suffix that does not change in person, number and gender (Derbyshire 1986: 516). This can be seen in (4), which is taken from Derbyshire (1986: 518).

23 See footnote 24.

24 As the pattern is not only R-S but R-A/S, this resembles an antipassive. That is a construction in ergative languages, similar to the passive in accusative languages, where a transitive clause becomes intransitive and the A-constituent becomes S. (see Dixon 1994: 13). The pattern R-A could represent an intransitive clause derived from a transitive clause (an antipassive), while R-S stands for a 'normal' intransitive clause. As R-A is derived from a transitive clause, it is higher in transitivity hierarchy than the 'normal' intransitive clause R-S.

25 It is very seldom in general that a language cross-references only O but not A/S on the verb. Worldwide there are only 24 languages doing so, whereof six others are spoken in South America but none very closely to Palikúr (<http://wals.info/feature/102A>). Therefore, a language contact between Palikúr and these other six languages can be excluded.

- (4): ir ri-uhm-ep-ten
 he him-kill-incept-obj
 'He began to kill him.'

Example (4) shows the free subject pronoun *ir*, and the combined object-affixes *ri-* and *-ten*²⁶. As all cross-referencing affixes in Palikúr refer only to O and not to S_o or S, the verbal alignment system is accusative. It would appear logical that Palikúr has undergone similar changes as the other accusative languages that have the patterns d) and e), A/S-R-O(3) and A/S-R-Ø. Like these languages Palikúr does not cross-reference S_o. It could be assumed that Palikúr first changed to the pattern *A/S-R-O before it lost its prefixes to cross-reference A/S. But, unlike the languages in d) and e) no suffixes have been lost in Palikúr. If the assumption made above, that the loss of suffixes caused the change to the accusative alignment system in the languages in d) and e), is true, the change in Palikúr must have been caused by something else. The picture becomes more clear by taking a look on the paradigm of the personal affixes, shown in table 8.

Table 8: Free pronouns and personal affixes in Palikúr

	Subject (free form)		Object (suffixes)		Object (prefixes)	
	sg	pl	sg	pl	sg	pl
1	nah	wis (incl.dl) wixwi (incl.pl.) usuh (excl.)	-un/-an/-en-	-wi/-aw/-ew	nu-/n-	u-/wo-
2	pis	yis	-pi/-ap/-ep	-yi/-ay/-iy	pi-	yi-
3m	ir	irkis	-ri/-ir	-rikis/-irkis	ri-	(suffix -kis with 3sg animate forms)
3fem	er	erkis	-ru/-ir	-rukis/-irkis	ru-/a-/ag-	
3inan			-ni/-in-			

(Derbyshire 1986: 514, 517)

Comparing the object-prefixes in table 8 with the reconstructed subject-prefixes for Proto-Arawakan in table 2, there is no doubt that these are, apart from some phonetic changes, the same morphemes. This means that the prefixes did not change in form but that they were re-analyzed in their function.

²⁶ Prefixes and the additional object-suffixes are chosen in inceptive aspect, while suffixes are chosen “with other aspect forms” (Derbyshire 1986: 518)

Formerly used to cross-reference A/S_a, the same prefixes, in combination with an object-suffix, are now used to cross-reference O. In this process, S_o must have merged with S_a. This could have happened in the interim phase, while the prefixes were still used to cross-reference A/S_a by some speakers and already for O/S_o by other speakers. Even if the re-analysis is an internal process, there is still no answer to the question, what caused the re-analysis. This can be internal or external factors, there is therefore taken a look on non-related languages spoken in the same area in section 4.3.5.

4.2. Nominal morphology and word order

Until now, the focus was on the alignment system expressed in verbal morphology, i.e. by cross-referencing affixes. As we have seen in 2.2.1, alignment systems can also be expressed in nominal morphology, as shown for Latin, or in word order, as shown for English. All Arawakan languages investigated here express the alignment system in verbal morphology but as will be seen, there are two languages that express the alignment system also in nominal morphology. These shall be dealt with in section 4.2.1. Section 4.2.2 is about the correlation between alignment system and word order.

4.2.1 Core cases

Most Arawakan languages lack core cases (Aikhenvald 1999: 80), e.g. cases that show the relations between subject, predicate and object²⁷. According to Aikhenvald (1999: 96), there are two Arawakan languages which have core cases: Tariana and Apurinã. In verbal morphology, both languages distinguish between intransitive active and stative verbs, e.g. their verbal alignment system is active-stative. Apurinã belongs to those languages which kept the original affix-pattern A/S_a-R-O/S_o, whereas Tariana lost its cross-referencing suffixes and has the pattern A/S_a-R-Ø, e.g. intransitive stative verbs in Tariana do not have any cross-referencing affixes. The case-marking in Tariana is well-studied and shall therefore be presented first.

²⁷ Non-core cases like locative, perlative, instrumental or ablative exist in all Arawakan languages (Aikhenvald 2002: 104, Aikhenvald 1999: 96).

Table 9: Case-marking in Tariana

Grammatical function	Discourse status	Nouns	Pronouns
A/S	Non-topical/topical	-∅	-∅
A/S	focused	-nhe/-ne	
Non-A/S and S _{io}	non-topical	-∅	-na
	topical	-nuku/-naku	

(simplified from Aikhenvald 2003: 189)

Table 9 shows the case-marking in Tariana. It can be seen that Tariana distinguishes between A/S and non-A/S + S_{io}²⁸. There is, thus, no special marking for O but O and oblique cases (and S_{io}) are treated the same while A and S are treated the same. Subjects are only marked if they are focused, non-subjects only if they are topical. For pronouns, all non-subjects are marked. As all S (with the exception of S_{io}) are treated like A, the nominal alignment system in Tariana is mainly accusative.

For Apurinã, Aikhenvald (1999: 96) describes an “absolute S/O case morpheme -ñi, used to mark a fully affected constituent”. According to this, the nominal alignment system in Apurinã would be ergative as all S are treated like O. Aikhenvald cites Facundes as her source – in his study of Apurinã Facundes (2000: 493) gives evidence, however, that “the correlation between the use of the affectedness marker and S_p and P²⁹ follows from their semantic properties, not syntactic ones —since it turns out that S_p and P refer to entities in contexts where they are the natural candidates to undergo affectedness in natural discourse”. According to Facundes, the affectedness marker is only used for S_o and O, not for all S, which means that the nominal alignment system in Apurinã is active-stative, not ergative. He says also that “proof of the strong discourse-pragmatic function of -nhi is the fact that its use marking S_p and P is optional from a propositional semantics point of view.” The use of the marker is thus mainly depending on discourse. As it is only used for S_o and O, it can still be regarded as core-case-marker – used in a similar way as the core-case-markers in Tariana which also only are used in certain circumstances depending on discourse. While Tariana has a mainly accusative nominal alignment system (with traces of active-stative, if the exception for S_{io}, i.e. verbs of physical states is taken in account), the nominal alignment system in Apurinã is active-stative.

As these are the only two languages with core-case-marking, it is very likely that the development of

²⁸ S_{io} stands for the subject of verbs of physical states (Aikhenvald 2003: 186).

²⁹ S_p = S_o, P = O

this is influenced by non-Arawakan languages, especially as the distinction between subject and non-subject is “a typologically uncommon system” (Aikhenvald 2002: 101). Evidence for external influences in the development of core-case-marking in Tariana and Apurinã will be given in 4.3.1 and 4.3.2 respectively.

4.2.2. Word order

The word order in Arawakan languages is very varied. For 30 languages³⁰, there are seven possibilities, the number of languages are given in brackets: SVO (12), SOV (5), active (5), VSO (5), VOS (1), OSV (1) and free (1). More than one third of the languages use SVO, while 15% use SOV, 15 % active and 15 % VSO. Only one language each uses VOS, OSV and free word order. As SVO and SOV are the most frequent word orders of the worlds' languages (<http://wals.info/feature/81A>), it is not surprising that SVO and SOV are the most common word orders in Arawakan languages as well. One explanation for the especially high occurrence of SVO could be the parallel structure to the predicate which is the core of the Arawakan sentence – A is prefixed while O is suffixed. Not at all common in general is the active word order. Active word order means that the word order corresponds to the active-stative alignment system – S is treated different depending on the semantics of the verb. In an intransitive clause, the word order would be S_aV or VS_o, respectively. As the original affix-pattern was active-stative – and still is in the majority of the languages – the relatively high percentage of 15 % for active word order is not very remarkable either. VSO and free word order are neither very common nor very unusual over the world. According to WALS VOS is very seldom, OSV occurs even only in four languages listed on WALS, whereof one, Nadëb, a member of the language family Nadahup, is spoken in Brazil (http://wals.info/languoid/lect/wals_code_nad)³¹.

Most uncommon is probably that there are almost all possibilities of word order in one language family. Looking at the distribution of the word order patterns over the subgroups of the family in table 10 and figure 6, there is no regularity visible.

30 There was no data for Island Carib and Paraujano available.

31 The Arawakan OSV-language is not listed in WALS.

Table 10: Word order according to genealogical subgroups

Genealogical subgroup	Word order	Number of languages
A	SVO	5
	SOV	2
	Active	2
B	SVO	1
	SOV	1
	Active	1
C	SVO	1
	SOV	1
D	SVO	1
	VSO	1
E	SOV	1
	VSO	1
	OSV	1
F	VSO	1
G	VSO	2
H	VOS	1
I	Free	1
	Active	2
	SVO	3
J	SVO	1



Figure 6: Word order in subgroups



Figure 7: Correlation between verbal alignment system and word order

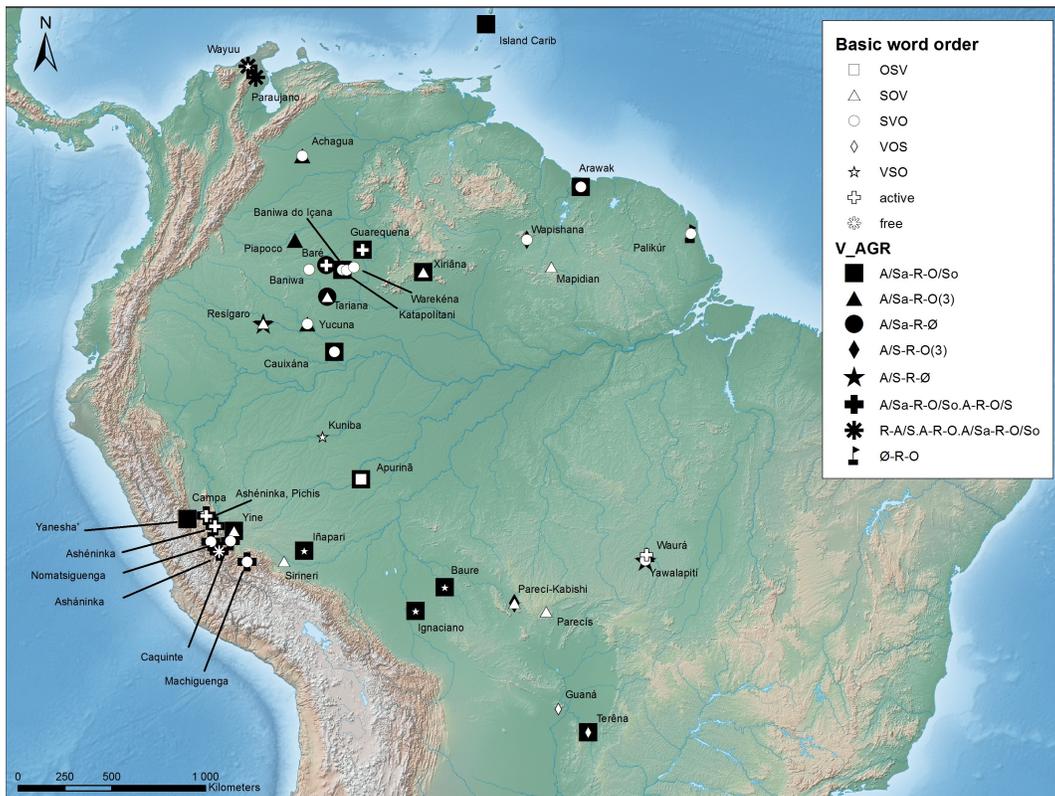


Figure 8: Correlation between affix-patterns and word order

In figure 7 and 8, the distribution of the word order according to the verbal alignment systems and the affix-patterns respectively is shown. It is summarized in table 11. The affix-pattern seems to be as unstructured as the distribution according to subgroups, with the exception of all VOS-languages having the original affix-pattern $A/S_a-R-O/S_o$. Looking at the alignment system, there are still some regularities. While all patterns are represented in the active-stative alignment system, only SOV and SVO are represented in the accusative languages. Probably, it is no coincidence that the most common verbal alignment system of the world³² occurs in combination with the two most common word orders. Moreover, it can be seen that three of the five languages with active word order also use the active-stative alignment system. The other two have a split depending on aspect, which means, they use the active-stative alignment system in progressive aspect. The verb is in first place only in languages with an active-stative alignment system and in the one with clause-split. There is no information about if the word order is used in both main- and subordinate clause or only in one of them. Therefore, it is difficult to draw conclusions out of that. The language that has the most deviant affix-pattern, Palikúr with $\emptyset-R-O$, uses SOV, one of the most common word order patterns. The language with the very seldom word

32 212 of 380 languages on WALS (<http://wals.info/feature/100A>), while only 26 for active-stative

order pattern OSV is Apurinã, a language with the original affix-pattern A/S_a-R-O/S_o. Though Apurinã is, like Nadëb, spoken in Brazil, language contact can be excluded as Apurinã is spoken in the state Amazonas and Nadëb in the state Paraná which means that the locations of the two languages according to WALS are more than 3000 km apart from each other. The evolving of this extremely unusual word order pattern must therefore have other causes than borrowing. It is not impossible that the fronting of the object might have to do with the evolving of an object case-marker. At least, both changes emphasize the object.

All in all, the most striking insight from the comparison of this data is the great variety in the word order pattern and especially, the great variety in the languages that are stable in the verbal alignment system. The great variety in word order could result from that the Arawakan languages have “other means of showing syntactic function” (Dixon 1994: 49). As syntactic functions in Proto-Arawakan were visible on the verb, both object and subject were cross-referenced, it was not necessary to show the syntactic functions on the word order as well, i.e. the word order can have been free or at least not very strict. Indeed, many of the languages that were classified having one or the other word order, actually have several possibilities while the most frequent was chosen for the purpose of this study.

Table 11: Correlation between word order, alignment system and affix-pattern

alignment system	Word order	Number of languages	pattern	Word order	Number of languages
Active-stative (19)	SVO	6	A/S _a -R-O/S _o 13	SVO	3
	SOV	3		SOV	2
	Active	3		Active	1
	VSO	4		VSO	4
	VOS	1		VOS	1
	OSV	1		OSV	1
	No data	1		No data	1
			A/S _a -R-O(3)	SVO	3
			A/S _a -R-Ø	SOV	1
				active	1
Accusative (5)	SVO	3	A/S-R-O(3)	SVO	1
	SOV	2		SOV	1
			A/S-R-Ø	SVO	1
				SOV	1
			Ø-R-O	SVO	1
Asp-split (6)	SVO	3	A/S _a -R-O/S _o	SVO	3
	active	2	A-R-O/S	Active	2
	free	1		free	1
Clause-split (2)	VSO	1	R-A/S	VSO	1
	No data	1	A-R-O A/S _a -R-O/S _o	No data	1

4.3. Comparison with non-Arawakan languages

Until now, only internal changes were taken into account to explain patterns that differed from the original ones. In this section, some Arawakan languages that have undergone change in the alignment system shall be compared to non-Arawakan languages spoken in the same area in order to see if the changes can be due to external influences from these languages. Again, Tariana will be presented first, as the language contact is very well studied. In 4.3.2 it follows Apurinã, the other language that has evolved core case marking. Then, the focus will move back to verbal morphology: first, the two languages that evolved an additional split (Campa, Paraujano and Wayuu), shall be investigated in 4.3.3 and 4.3.4 respectively, while Palikúr which shows the most deviant affix-pattern shall be last.

4.3.1. Tariana and Tucano

The language contact between East-Tucanoan and Tariana, both spoken in the Vaupés area in the western part of the Brazilian state Amazonas, is very intense due to the peoples' practice of exogamy. That means, that a speaker of Tariana is expected to marry someone whose mother tongue is *not* Tariana. Every child therefore grows up with two languages, the father's which decides about the child's ethnicity and the mother's (Curnow 2001: 420). Tariana “converged structurally with Tucano languages but remained lexically distinct” (ibid.). One of the grammatical features that Tariana took over from Tucano is the marking of core-cases, e.g. the distinction between subject and non-subject which has been presented in 4.2.1.

Table 12: Core-case-marking in Tariana and Tucano

Grammatical function	Discourse status	Tariana		Tucano	
		nouns	pronouns	nouns	pronouns
Non-subject (Non-A/S)	non-topical	-∅	-na	-∅	-re
	topical	-naku, -nuku		-re	

(Aikhenvald 2002: 102)

Table 12 shows that Tariana not only borrowed the marking of non-subject but also the zero-marking of non-topical nouns in non-subject function. As in Tucano, all topical non-subject-constituents but only non-topical pronouns are marked. The actual morphemes in the two languages differ, however. This

agrees with Curnow's statement that Tariana remained “lexically distinct” as the morphemes can be regarded as a part of the lexicon. The morpheme *-naku* can be found even in the closely related language Baniwa do Içana, where it is the marker for the oblique case locative and must have been re-analysed in Tariana (Aikhenvald 2002: 103). *-nuku* is a variation of *-naku*. It is interesting to see that there is still one difference in structure: Tariana distinguishes between pronouns and nouns while Tucano uses the marker *-re* for both.

4.3.2. Apurinã and Arauán languages

Apurinã was/is in contact with the now extinct language Kanamarí, a Katukinan language, the Arauán languages Jamamadi and Paumarí and, recently, Brazilian Portuguese (Facundes: 2000). Kanamarí and Portuguese lack case marking (wals.info.org) while the two Arauán languages have an object marker *-ra* (Derbyshire 1986: 495). Paumarí normally has an ergative alignment system (wals.info.org) with the marker *-a* for A but in some cases, “A has no case marker, P³³ has *-ra* ACC” (wals.info.org). It can therefore be regarded as split-ergative³⁴. As Apurinã has a case marker only for O and it is active-stative which actually is a form of split-ergativity, it is very likely, that the case-marking in Apurinã was borrowed from the structural similar Arauán languages. As in Tariana, the morpheme for the case-marker, *-nhi*, is distinct from the one in the donor-language and was probably used in another function before.

4.3.3. Campa-languages and Panoan languages

Campa languages have evolved an ergative system in stative aspect while they still use the active-stative alignment system in progressive aspect³⁵. They are spoken in the pre-Andine area of Peru, very close to some Arawakan languages of other subgroups (e.g. Yanesha, Yine, Iñapari). The Arawakan languages in this area are surrounded by two other language families: Quechua languages in the west and Panoan languages in the east. The closest contact is with the Quechua languages Ayacucho Quechua, Cusco Quechua and Jauja Wanca Quechua and with the Panoan languages Yaminahua,

33 P=O

34 The split here goes between nouns and pronouns (wals.info)

35 Note that discourse-function also plays a role in the choice of affixes. To investigate if this is caused by contact languages, further investigation is needed.

Amahuaca and Yora (ethnologue.com), see map 3.1. While Quechua languages are accusative (Dixon 1994: 68 for Cusco Quechua, wals.info for Quechua Imbabura), there are “a range of split-ergative properties” (Payne 2001: 597) in Panoan languages. Fleck (2010: 29) claims however that “All Panoan languages studied so far have been found to be morphologically ergative”. Quechua languages cannot have caused the innovation of ergative patterns in Campa-languages, while Panoan languages – they may be ergative or split-ergative – provide a source for the development of ergative patterns in Campa-languages.

4.3.4. Paraujano and Wayuu, Chibchan and Carib languages

Like the Campa-languages, Paraujano and Wayuu have evolved an additional split but while the new evolved split is depending on aspect in the Campa-language, it depends on clause-type in Paraujano and Wayuu. The two languages are spoken close to each other in the north of the Colombian-Venezuelan border. Languages spoken in the same area belong to the language families Chibchan (Malayo, Kogi, Arhuaco, Chimila and Barí) and Carib (Japreria and Yukpa) (ethnologue.com) see map 3.2 and 3.3³⁶. Chibchan languages have an ergative structure (Dixon 1994: 5). In Arhuaco, for example, the nominal alignment system is ergative, while it shows an active-stative alignment system for verbal morphology (wals.info). Like Arawakan languages, both A and O are marked on the verb in Arhuaco. The structure is therefore quite similar which facilitates the borrowing of features. Both Arhuaco and Paraujano and Wayuu have an active-stative verbal alignment system and both show an ergative pattern: Arhuaco in nominal morphology, e.g. by case-marking, Paraujano and Wayuu in the verbal morphology of main clauses. It is possible that the ergative pattern for nominal morphology in Chibchan spread to verbal morphology in main clauses in the two Arawakan languages³⁷.

Carib languages show an ergative pattern as well (Dixon 1994: 5), some of them have a split-ergative system depending on tense (Dixon 1994: 99) and, as Paraujano and Wayuu, a split depending on clause-type. Subordinate clauses in “all Carib languages [...] show the ergative pattern” (Dixon: 1994: 192). Main clauses differ however, they are ergative in some languages, accusative in others and split-ergative in others again (with a split depending on tense) (Dixon 1994: 192). There are, as can be seen here, several possible sources for the evolving of an ergative pattern in main clauses in Paraujano and Wayuu but it is more likely that it was borrowed from the Carib languages as they also have a split

36 Paraujano is not on these maps. Its location, very close to Wayuu, can be seen on figures 2-8.

37 For a discussion of split-ergativity depending on clause-type, see Dixon 1994: 101-104.

depending on clause-type.

4.3.5. Palikúr

As discussed in 4.1.1. the change from the active-stative alignment system to the accusative alignment system used by Palikúr today is probably a result of re-analysis of the former A/S_a-prefixes to a secondary set of affixes cross-referencing O, used besides the original set of suffixes. It is not yet clear what could have caused the re-analysis. Palikúr is spoken at the border between Brazil and French Guiana. It is in contact with Carib languages and the French Guyanese Creole (ethnologue.com), see map 3.4. According to Derbyshire (1986: 513), “Wise, p.c., suggests that these free pronouns in PL may be due to Creole influence in the area”. The free pronouns, shown in table 8, are so alike the personal affixes that there is no doubt that they are originally Arawakan. It may however be the case that the influence of Creole languages, which are generally simpler in morphology, caused the Palikúr speakers to start using free personal pronouns instead of personal affixes to refer to the subject-constituent. As the subject-prefixes then were left without function, they were re-analyzed and used as a second set of object-affixes.

4.4. Summary of the results

In chapter 4, the alignment system and its expression in grammar of 32 Arawakan languages were investigated. The results shall be summarized in this section.

All 32 languages express their alignment system in verbal morphology, namely through personal affixes. 19 of the languages show an active-stative pattern, five an accusative one and eight languages a split-ergative one. It was first concluded that the 19 languages had a stable alignment system, while the 13 others had undergone change. It was supposed that six different changes had happened as some languages could be grouped by genealogical relationship. One group of six and one group of two languages had evolved an additional split, while one group of two and three single languages had changed to an accusative system. When looking at the affix-patterns of the languages it could be seen that this was not the whole picture as six of the active-stative and four of the accusative showed a similar pattern of change. That means that six languages had changed the affix-pattern without changing their alignment system while four languages, that had undergone a similar change, changed

their alignment system to accusative. The change was probably caused by the loss of O/S_o-suffixes, first in first and second, later also in third person which led to prefixless verbs in the six languages that kept their alignment system and to the change to the accusative system in the four others. As the change could be explained by internal factors, no comparison to neighboring languages was drawn but the influence of external factors was not excluded.

Furthermore, it could be seen, that the fifth language that had changed to an accusative alignment system didn't share the pattern of change of the others but had changed in another way. Probably, the change in Palikúr happened due to a re-analysis of the A/S_a-prefixes which might be caused by Creole influence. If this is so, the providing of a new strategy to reference to the subject (with free personal pronouns) by external factors led first to changes in the affix-pattern which then induced the change of the verbal alignment system.

For the two groups which have evolved an additional split, some similarities were found. Both groups innovated a new form of split-ergativity whereby they kept the active-stative system in certain circumstances and use an ergative system in others. The innovated system was regarded as a simplification of the old system. Still, the changes that happened in these languages were far too different to be regarded as a common change. In Campa-languages the split is namely conditioned by aspect, why it is conditioned by clause-type in Paraujano and Wayuu. The concerned groups were compared to their neighboring languages where ergativity and split-ergativity was found as well. In both cases, multiple causation is possible – the change to split-ergativity probably has been triggered by influences from non-related languages but the internal drive to simplification presumably has supported the changing process. In both cases, the alignment system changed into a system closer to the ones used by languages they were in contact with. To find out if the affix-patterns were assimilated to the donor-languages as well or if they changed as a result to the borrowing of the alignment system, a deeper study of the contact languages is required.

Besides the verbal alignment system, there was also given a short overview over the nominal alignment system. Only two languages use nominal morphology, e.g. case-marking, to express the alignment system: Tariana and Apurinã. The nominal alignment system is accusative in Tariana and active-stative in Apurinã. The evolving of case-marking in Tariana is well-studied and it is certain that the strategy of case-marking and the accusative alignment system were borrowed from a contact language. It was found that contact-languages of Apurinã use case-marking and an ergative alignment system which

leads to the assumption that the case system was borrowed. Both languages have kept their active-stative verbal alignment system, Apurinã with the original affix-pattern A/S_a-R-O/S_o while there is only A/S_a-R-Ø left in Tariana. The properties of the active-stative alignment system, e.g. the distinction between active and stative intransitive verbs, are more present in Apurinã which uses this distinction also for the nominal alignment system while Tariana borrowed not only the case-marking but also the accusative alignment system from the contact-language.

Moreover, there was a short study about the correlation between the verbal alignment system, the affix-patterns and the languages' word order. It was found that 15 % of the investigated languages had an active word order which otherwise is quite unusual but correlates with the active-stative alignment system. Otherwise, the word order was very varied which could be a consequence of the marking of all core constituents on the verb. As the verb already provides information about the relation of the constituents, it does not have to be shown in the word order. The word order could have been free in the proto-language and have developed differently in the investigated languages – maybe due to language contact.

5. Conclusion

In the beginning of this study, it was stated that “one would expect a great diversity within the Arawakan language family”. On the one hand, this is true, as a great variation in alignment systems and agreement patterns is found. But many languages – though spoken very far from each other – share the original active-stative alignment system and the pattern of cross-referencing A/S_a as prefixes and O/S_o as suffixes. This seems therefore to be quite stable. The alignment system seems to be more stable than its expression in verbal morphology as there are some languages which have undergone changes in the affix-pattern and still kept the original alignment system. Only five of 32 languages changed their verbal alignment system completely while all others kept the active-stative system at least in certain circumstances. The part of the investigated features which seems to be most exposed to change, are the cross-referencing suffixes but this has rather phonetic than structural causes.

As has been shown in the introduction, most Arawakan languages had close contact to other language families. Nevertheless, structural changes caused by external factors were only found in some of the languages. The alignment system which is inherited from the proto-language seems to resist the influence of contact languages in most of the cases. This agrees with Nichols' results, that alignment

systems have “high genetic stability”.

The changes which have been observed were partly caused by internal, partly by external factors – for some changes, multiple causation was suggested. In the beginning of the study, the question was posed which part, the alignment system or its expression in morphology were rather changed due to internal and which rather due to external factors. As can be shown on the example for the languages that changed due to the loss of suffixes, internal changes affected first the affix-pattern (the expression in morphology) before changing the alignment system in the next step. For external changes, the picture is more varied: Tariana borrowed the whole system, case-marking and accusative alignment system from its contact-language, Apurinã only the case system while taking over the verbal alignment system to the nominal one. Ergative and split-ergative patterns were borrowed from contact-languages by the Campa-languages as well as by Paraujano and Wayuu. The cases of borrowing are not studied well enough to draw general conclusions from but at least, it can be shown that there are many different possibilities how borrowing can happen.

To get more definite results, language contact for the languages which have undergone change must be studied more closely. Moreover, the picture must be completed by the Arawakan languages not investigated in this study.

Appendix:

Appendix 1: The investigated languages

Appendix 2: Map over the correlation between verbal alignment system and affix-pattern

Appendix 3: Language maps

Map 3.1. Peru

Map 3.2. Northern Colombia

Map 3.3. Venezuela

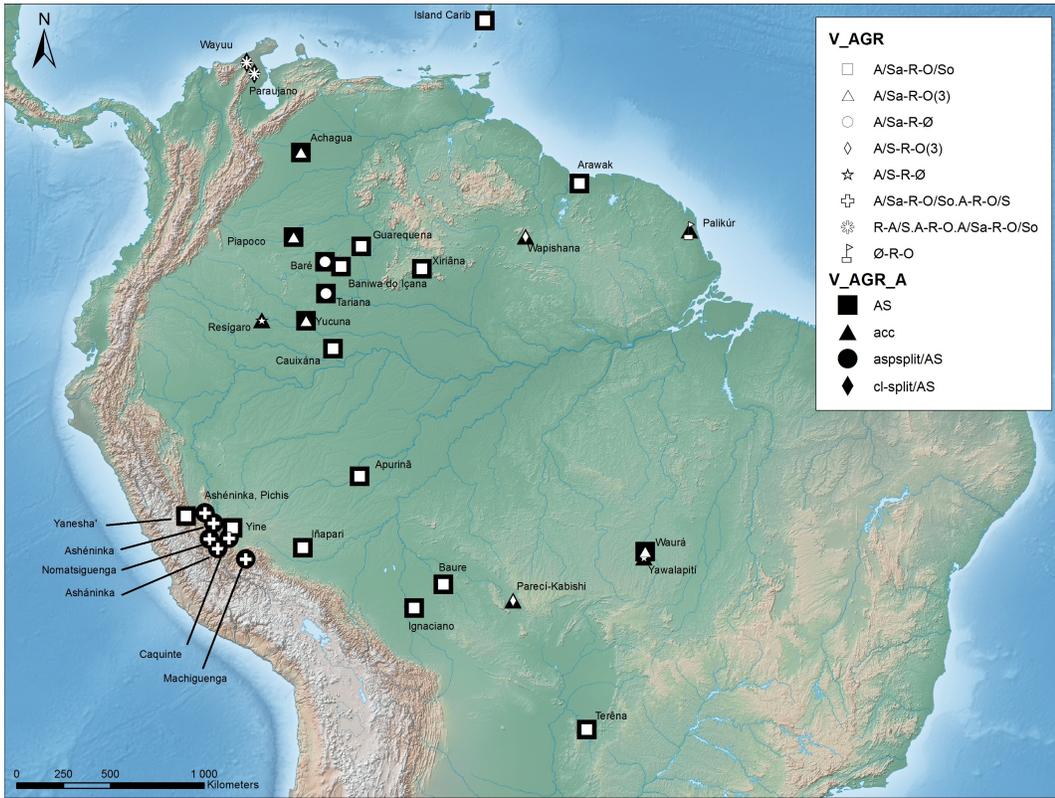
Map 3.4. French Guiana and Suriname

Appendix 5: Discourse-function

Appendix 1: The investigated languages

Cluster	Language name	alignment system	Expression in morphology
A	Achagua	AS	A/Sa-R-O(3)
G	Apurinā	AS	A/Sa-R-O/So
		AS	case-marking for non-subject
D	Arawak	AS	A/Sa-R-O/So
I	Asháninka	aspect-split	A/Sa-R-O/So A-R-O/S
-	Asheninca Pajonal	aspect-split	A/Sa-R-O/So A-R-O/S
-	Asheninca Pichis	aspect-split	A/Sa-R-O/So A-R-O/S
A	Baniwa do Içana	AS	A/Sa-R-O/So
-	Baré	AS	A/Sa-R-Ø
G	Baure	AS	A/Sa-R-O/So
I	Caquinte	aspect-split	A/Sa-R-O/So A-R-O/S
A	Cauixána	AS	A/Sa-R-O/So
A	Guarequena	AS	A/Sa-R-O/So
G	Ignaciano	AS	A/Sa-R-O/So
E	Iñapari	AS	A/Sa-R-O/So
D	Island Carib	AS	A/Sa-R-O/So
I	Machiguenga	aspect-split	A/Sa-R-O/So A-R-O/S
I	Nomatsiguenga	aspect-split	A/Sa-R-O/So A-R-O/S
J	Palikúr	acc	Ø-R-O
D	Paraujano	clause-split	R-A/S A-R-O A/Sa-R-O/So
B	Parecis	acc	A/S-R-O(3)
A	Piapoco	AS	A/Sa-R-O(3)
A	Resígaro	acc	A/S-R-Ø
A	Tariana	AS	A/Sa-R-Ø
		acc	case-marking for non-subject
H	Terêna	AS	A/Sa-R-O/So
C	Wapishana	acc	A/S-R-O(3)
B	Waurá	AS	A/Sa-R-O(3)
D	Wayuu	clause-split	R-A/S A-R-O A/Sa-R-O/So
C	Xiriana	AS	A/Sa-R-O/So
F	Yanasha	AS	A/Sa-R-O/So
B	Yawalapiti	acc	A/S-R-Ø
E	Yine	AS	A/Sa-R-O/So
A	Yucuna	AS	A/Sa-R-O(3)

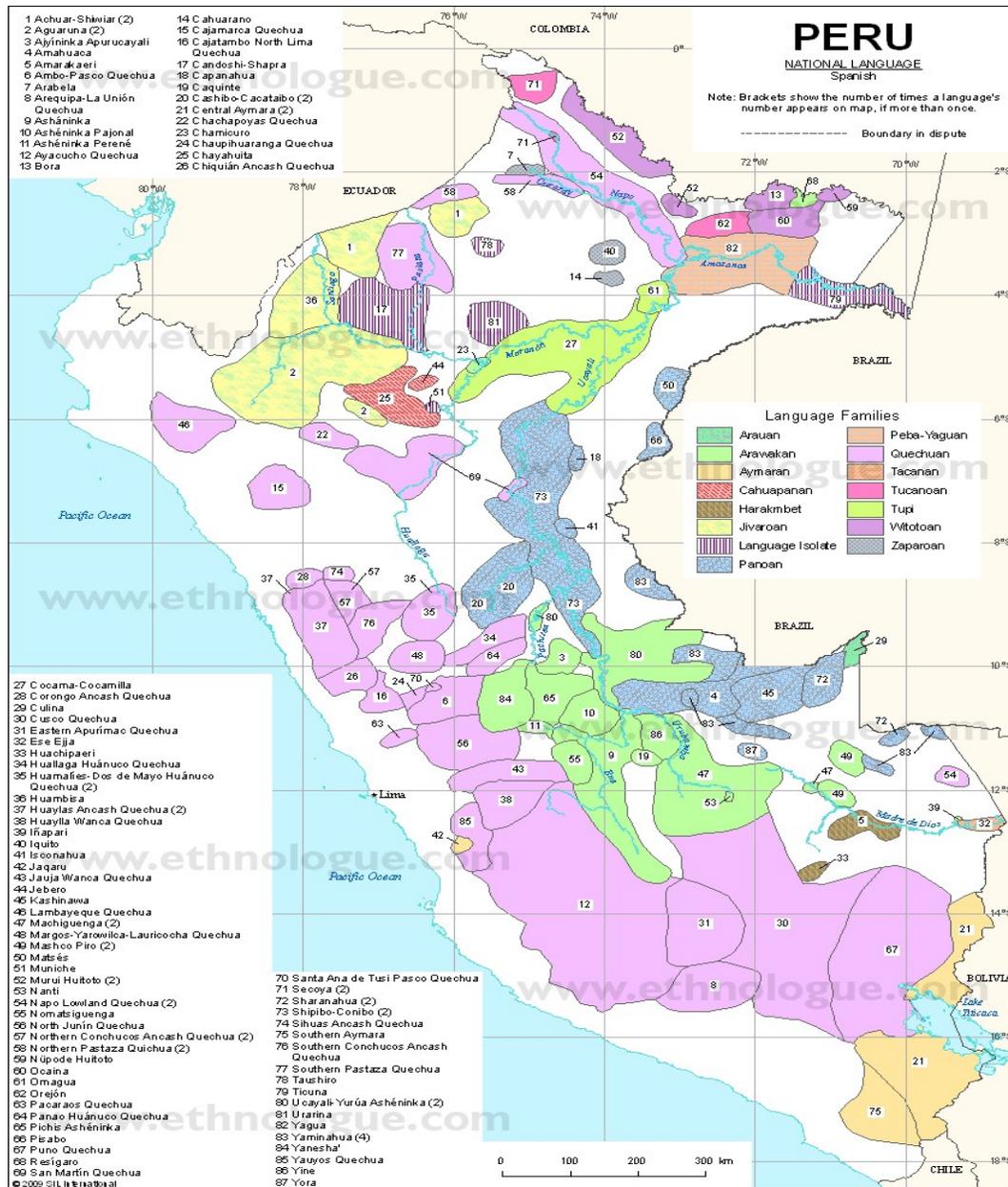
Appendix 2: Map over the correlation between verbal alignment system and affix-pattern



Appendix 3: Language-maps

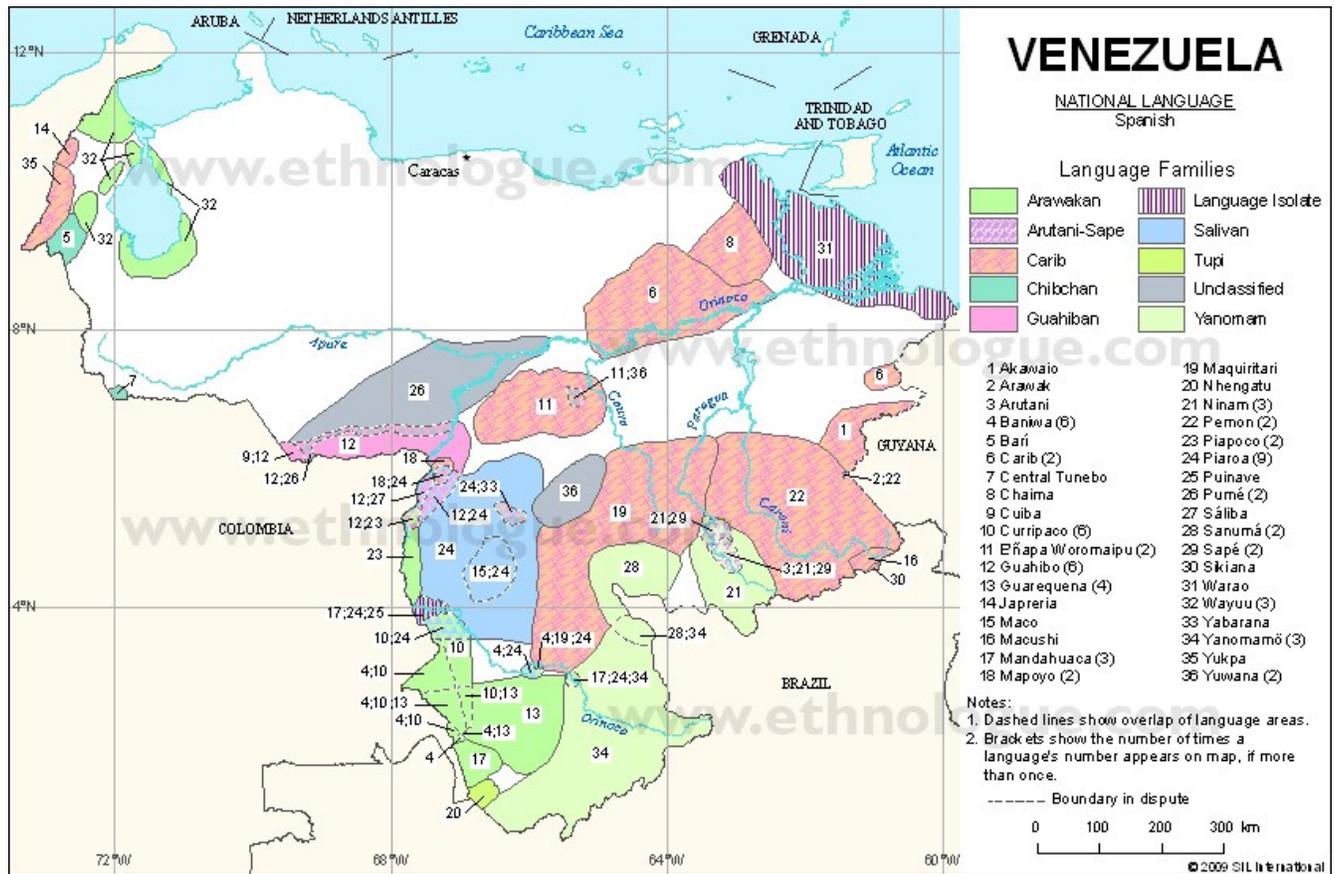
Map 3.1. Peru

http://www.ethnologue.com/show_map.asp?name=CO&seq=10



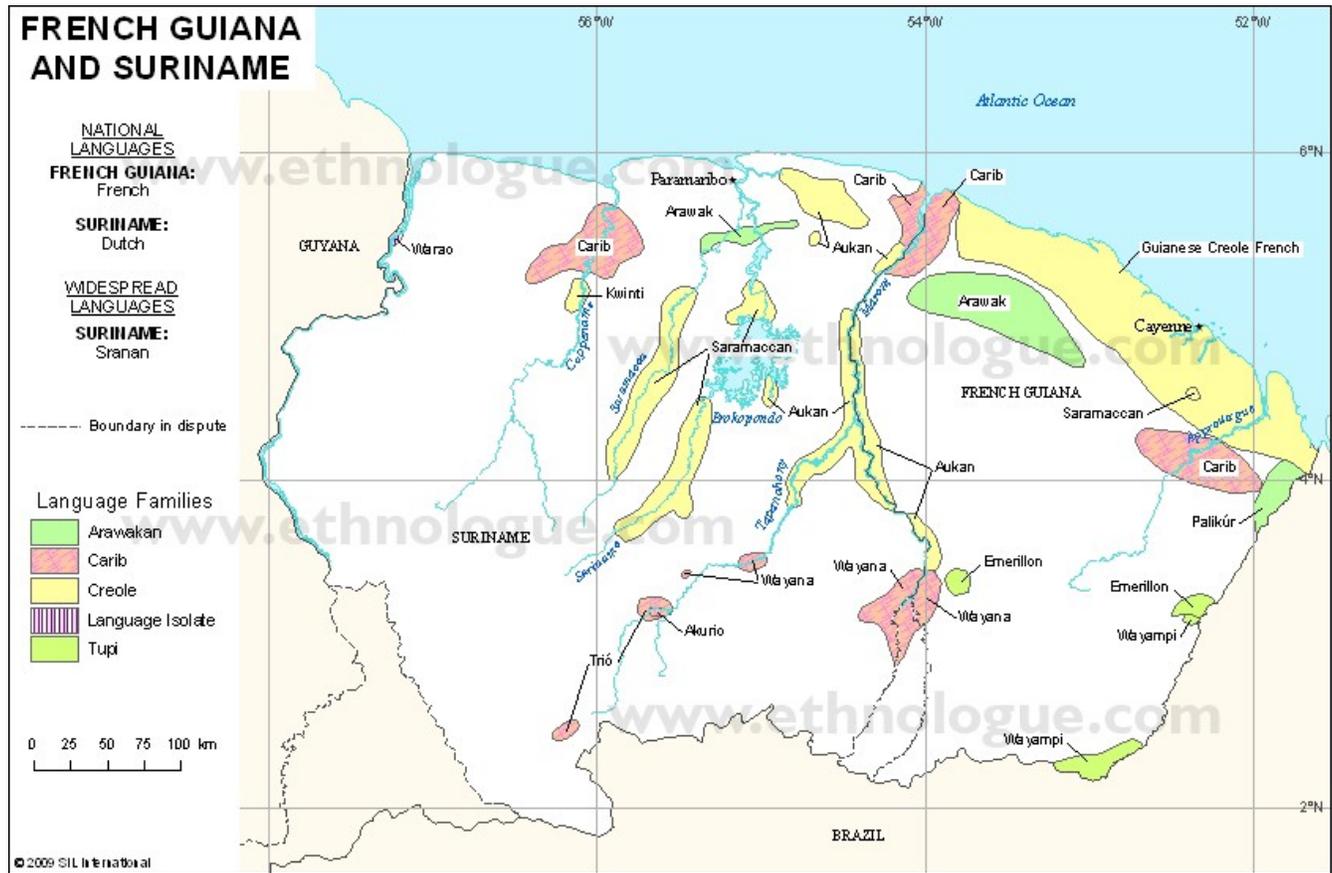
Map 3.3. Venezuela

http://www.ethnologue.com/show_map.asp?name=VE&seq=10



Map 3.4. French Guiana and Suriname

(http://www.ethnologue.com/show_map.asp?name=GF&seq=10)



Appendix 4: Discourse-function

In some of the investigated languages, there is a correlation between the use of personal affixes and discourse function. Examples are given in table 13. All data in table 13 refer to the subject which is normally cross-referenced by prefixes (A/Sa or A/S).

Table 13: Personal affixes and discourse function

Discourse function	Marking	Languages
Focus (not contrastive)	Indefinite person marker <i>-a</i> used as prefix	Baré
Focus of already known or back-grounded agent	Indefinite person marker <i>-i</i> used as prefix	Baniwa do Içana
Contrastive focus	Suppression of prefix	Baré, Guarekena
Topicalization	Suppression of prefix	Arawak, Island Carib, Apurinã, Yawalapiti
New topic	suffixes to cross-reference A/Sa	Achagua, Piapoco, Yucuna
Continuous and foregrounded	suffixes to cross-reference A/Sa	Asheninca Pichis
Highlight new information	Suffixes to cross-reference A/Sa	Asheninca Pajonal

(Aikhenvald 1995, Aikhenvald 1999: 89-90, Dixon 1994: 211)

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