Code-switching on Aruba

Testing the Matrix Language Framework within the Verb Phrase

Samantha Angela

1st reader: Dr. Anikó Lipták

2nd reader: Dr. Marion Elenbaas

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1. Introduction

Aruba is a multicultural and multilingual island, so it comes to no surprise that people on the island often code-switch. When several languages or dialects are used in the same conversation, this is called code-switching, this will further be referred to as CS (Gardner-Chloros 2009:4). CS often occurs within communities that speak two or more languages every day. When two or more languages are used within a sentence, various grammatical patterns can be found (91). This shows that CS does not occur at random, but instead is a systematic and rule-governed phenomenon. The syntactic system of CS, especially the morphosyntactic requirements of CS, has been an interesting topic studied on various language pairs, but not on all language pairs nor in all syntactic environment. In this thesis, I wish to study the morphosyntactic aspects of CS of Arubans, a multilingual community.

In my thesis, I implement a study of CS in the less commonly studied Papiamento, the language most spoken on Aruba. People on Aruba often code-switch between various languages; however most studies have solely focused on CS between Papiamento and Dutch (Muyskens et al. 1996; Pablos et al. 2019, Parafita Couto & Gullberg 2019; Suurmeijer 2020). Papiamento-English CS has not been documented nor studied yet, even though the language most spoken by the Aruban community is Papiamento and the second most spoken language is English (Herrera 2003:63). This thesis seeks to study Papiamento-English CS among Arubans. Specifically, CS in syntactic environments in which the 3rd person singular English verb inflection is required.

This thesis seeks to answer the research question: do Arubans adhere to English or Papiamento morphosyntax when switching to an English verb in a Papiamento sentence? I will do this by investigating whether the predictions of the Matrix Language Framework (MLF) model are correct in the case of verbal inflection. The MLF model states that only one language involved in a code-switched sentence provides the morphosyntactic frame. This language is called the Matrix Language (ML) and the other language involved is called the Embedded Language (EL) (Myers-Scotton 1993:6). The language which has the most morphemes in a sentence determines the ML (67).

I will test the predictions of the MLF by investigating whether the ML does in fact determine the morphosyntactic frame of a code-switched clause. I will do this by constructing sentences which are in Papiamento, except for one word, namely the code-switched verb that is

in English, and test whether the morphosyntactic feature of verbal inflection is present on the verb or not. To give an example of the syntactic configuration I am interested in, consider (1). In this example the entire sentence is made up of Papiamento words, except for the verb, which is in English. The question is, if a multilingual speaker uses a sentence like (1), do they use an inflected or an uninflected form the English verb?

(1) E ta __ (eat/eats) e pan

3rd SG ASPECT __ the bread

"He/she/it __ (eat/eats) the bread"

This syntactic environment is interesting to look at, because in this environment the two languages differ sharply. English finite lexical verbs carry inflection in the present tense, however verbs in Papiamento never do and are always presented in their bare form. Consider example (2):

(2) a. Mi ta come

I ASPECT eat

"I eat"

b. E ta come

3rd SG ASPECT eat

"He/she/it eats"

c. Nos ta come

We ASPECT eat

"We eat"

As one can see, the Papiamento verb "come" is always in its bare form, no matter the person or number of the subject. However, English carries inflection when a 3rd person singular subject is present. Going back to example (1), it is important to note that most morphemes come from Papiamento. So, in this sentence Papiamento is the ML. If the ML determines the

morphosyntactic frame of a clause, then the MLF predicts that there will be no inflectional morpheme associated with the verb, even if that verb is code-switched in English.

The thesis investigated whether this prediction is correct. To test this prediction, participants were recruited through social media to participate in a questionnaire study in which participants were presented with 40 gapped sentences similar to example (1). Their task was to choose one of the two forms of the English verb, the inflected one or the bare one.

The structure of my thesis is as follows. In section 2, I provide background information discussing important issues concerning CS, the MLF, and verbal inflection in Papiamento and English. In section 3, I will describe the methods and materials I used to conduct this experimental research. The results of the questionnaire study can be found in section 4. These results will be discussed in section 5 along with some limitations of this study. To close my thesis off, I provide my conclusion in section 6. All works cited in this thesis can be found in section 7 and in section 8 is the appendix which includes 8 sections:

1. Recruitment advert in Papiamento with English translation
2. Start-up message in Papiamento with English translation
3. Introduction to the background questionnaire in Papiamento with English translation
4. Background Questions with English Translation
5. Instructions to acceptability task in Papiamento with English translation
6. 60 experiment sentences with direct English translation
7. End message with English translation
8. Tables section 4.1

2. Theoretical Background

2.1 Multilingual Aruba

Aruba is a Dutch-Caribbean island. The two official languages of the island are Dutch and Papiamento. Papiamento is the creole language of the Caribbean islands Aruba, Bonaire and Curaçao. The language is also spoken by communities in the Netherlands, Sint Maarten and elsewhere (Aalberse et al. 2019: 204; Kouwenberg 2013; Alofs 2008:52-54). While Dutch is mostly used in education and governmental affairs, Papiamento is the language most spoken on the island amongst the inhabitants and "is the most important marker for Aruban identity" (Aalberse et al. 2019:209; Alofs 2008:52,54). Additionally, with Aruba's colonial history with the Spanish and the recent migration from South America, Spanish is also a dominant language on the island (Alofs 2008:11, 52). Furthermore, tourism is very important on the island since it is the island's main source of income. The language mostly used in tourism is English as tourism is tailored for visitors from the United States or Canada (54). This makes English the fourth dominant language on the island. English and Spanish are also compulsory subjects in the last two years of elementary school. This is also the time in which most Aruban children learn to speak both languages, however many Arubans come in contact with either English or Spanish before that time (Van Der Linden 2017:25). All in all, this means Aruba has four dominant languages: Papiamento, Dutch, English, and Spanish. Alongside these four dominant languages, various other languages are also spoken on the island, such as: "Portuguese, Patois (French Creole), Sranan (Surinamese), Tagalo (from the Philippines)", and many more (Alofs 2008:53). With so many languages spoken on such a small island, most of the population is multilingual; more than 60 percent of the population speaks at least four languages to some degree (54-55).

2.2 Papiamento tense and aspect marking, and verbal inflection

In Papiamento, person, tense nor number is expressed through verbal inflection. Papiamento verbs are always uninflected and presented in their bare forms. However, while tense is not expressed through verbal inflection, it is expressed using auxiliaries. These auxiliaries offer additional information about the lexical verb they modify, in this case they mark tense and aspect. In Papiamento there are three tenses: past, present, and future, and each tense has its own auxiliaries. When representing the present, the auxiliary 'ta' is used. Consider example (3), where 'ta' is glossed ASPECT for reasons to be specified below:

(3) Nos ta come e pan

we ASPECT eat the bread

we be eat the bread

“We eat the bread”

“We are eating the bread”

When ‘ta’ is used to represent the present continuous, the auxiliary possesses the same meaning as the present form of the English progressive auxiliary ‘be’. Context is important to determine which aspect of the present is meant. Additionally, ‘ta’ can have lexical meaning when there is no other verb in a clause. The auxiliary then represents the present forms of the verb ‘to be’:

(4) Mi ta Dominic

I be Dominic

“I am Dominic”

(5) E ta loco

3rd SG be crazy

“He/She/It is crazy”

(6) Nos ta famia

we be family

“We are family”

When representing the past, the auxiliary ‘a’ or ‘tabata/tawata’ is used. The auxiliary ‘a’ is used for the past simple and past perfect, whereas ‘tabata/tawata’ is used for the past continuous and past perfect continuous. When ‘a’ is used for the past perfect, the auxiliary possesses the same meaning and function as the English perfective auxiliary “have”. When ‘tabata/tawata’ is used for the past continuous, it possesses the same meaning and function as the English progressive auxiliary ‘be’, for example:

(7) Mi a come e pan.

I ASPECT eat the bread

I have eat the bread

“I ate the bread”

“I have eaten the bread”

(8) E raton tabata/tawata come e pan

The mouse ASPECT eat the bread

The mouse was eat the bread

“The mouse had been eating the bread”

“The mouse was eating the bread”

Overall context of a conversation is also needed when determining which aspect of the past is meant. Alongside its auxiliary functions, ‘tabata/tawata’ also has some lexical meaning of its own, however the same cannot be said about ‘a’. When there is no other verb in a clause, ‘tabata/tawata’ can act as the past tense of ‘to be’:

(9) Mi tabata/tawata un cobarde

I was a coward

“I was a coward”

(10) Nos tabata/tawata famia

We were family

“We were family”

Lastly, when representing the future, the auxiliaries ‘lo’ and ‘lo ta’ are used. ‘Lo’ is used for an action which takes place in the future and after the conversation has taken place. This is known as the perfect future tense in Papiamento. ‘lo ta’ is used for a future event that could not take place. This is known as the imperfect future in Papiamento (“Regla di Papiamento” 2008:2). Furthermore, ‘lo’ can be compared to the English modal auxiliary ‘will’ or ‘would’, for example:

(11) Mi lo come e bacoba

I will eat the banana

“I will eat the banana”

(12) Mi lo a come e bacoba

I would have eaten the banana

“I would have eaten the banana”

2.3 English tense marking and verbal inflection

One key difference between Papiamento and English grammar can be seen through their verbal inflection. Papiamento lacks verbal inflection, whereas English can carry inflection on the verb (Lieber 2016:115). For example, the ‘-s’ suffix can be used on verbs to express the 3rd person singular:

(13) a. *I loves him

b. He loves him

Moreover, while Papiamento verbs lack tense marking and are always presented in their bare forms, English can require verbal inflection for tense. In English, there are two tenses: present and past. Tense is always marked on the finite lexical verb or the finite auxiliary (Poole 2011:67-69). For example, the '-ed' suffix is used to express the past tense for regular verbs:

(14) *I kick the ball yesterday

I kicked the ball yesterday

The example above shows tense marking on a finite lexical verb. English can also require tense marking on finite auxiliary verbs, such as:

(15) *He be eating his meal

He is/was eating his meal

English also has dedicated tense auxiliaries for simple present and past. For the present, the auxiliary 'do' can be used, for example:

(16) I do dance every day

And for the past, the auxiliary 'did' can be used:

(17) I did dance last night

'Do/did' auxiliaries are primarily used in questions and when there is negation in a clause in cases where the declarative and the non-negative equivalent of the clause only contains a lexical verb. When used in negative sentences, 'do/did' carries the tense if there is no other auxiliary present (Burton-Roberts 2016:129). Consider the following example:

(18) * She not danced.

She did not dance.

When used to form questions, 'do/did' also carries tense if there is no other auxiliary present. In English, the tensed auxiliary verb moves in front of the subject when forming questions. However, when there is no tensed auxiliary present, there is no tensed auxiliary to more in front of the subject. In these cases, the 'do/did' auxiliary is used to carry tense to form questions (130-131):

(19) *She dances?

Does she dance?

They can also be used to make emphatic statements (130), for example:

(20) A: Did she dance?

B: Yes, she did dance.

(21) A: You don't like my jacket.

B: I do like your jacket.

Furthermore, do/did auxiliaries can also be used to test constituency of verb phrases (VP). A VP is a phrase which consists of at least one verb and is centered around the verb (29), for example:

(22) A: Did I eat the cake?

B: Yes, you did (eat the cake)

(23) A: Does she like cilantro?

B: No, she does not (like cilantro)

Both "eat the cake" and "like cilantro" in sentence B can be ellipted without change of meaning. When a phrase can be ellipted using 'do' or 'did', it is a constituent (121). This information will be relevant in section 2.5

All in all, the key difference between Papiamento and English morphosyntax in this section is: Papiamento does not inflect verbs, whereas English does inflect them in the present and past. This morphosyntactic difference is the key difference that will be investigated in this study through the materials and method described in section 3.

2.4 Code-switching and the Matrix Language Framework

Code-switching (CS) is when several languages or dialects are used in the same conversation or sentence. CS usually occurs in multilingual and multicultural societies (Gardner-Chloros 2009:4). Myers-Scotton further narrows this definition by defining CS as using several languages or dialects in the same Complementizer Phrase (CP) or clause (Hadei & Ramakrishna 2017: 434). A CP corresponds to a clause and stands for the constituent which is understood to be a clause. Furthermore, a CP is the maximal projection of a Complementizer and the highest level in a syntactic tree structure (Poole 2011:70-72). The use of the term 'CP' is preferred over the term 'sentence' because the status of a CP is clear in terms of phrase structure, whereas the status

of a sentence is not. Additionally, the term CP is not tied to a specific theory (Hadei & Ramakrishna 2017: 434).

Additionally, CS can be divided into inter-sentential switching and intra-sentential switching. Inter-sentential switching is when full sentences are code-switched, while intra-sentential switching is switching within a clause or utterance. This means inter-sentential switching involves switching from one language to another between sentences, whereas intra-sentential switching involves switching within a sentence or sentence fragment (Myers-Scotton 1993:3-4). Myers-Scotton further elaborates that languages involved while CS "do not contribute equally" (2002:15). Myers-Scotton's Matrix Language-Frame (MLF) model argues that one language in a CS utterance takes priority and sets the morphosyntactic frame for a clause showing CS (Myers-Scotton 1993:3). This language is known as the Matrix Language (ML). The other participating language is called the Embedded Language (EL) and takes on a "lesser role" (3). To determine the ML in a code-switched utterance, Myers-Scotton developed a counting criteria. When a language has the most morphemes in a code-switched utterance, that language is the ML and determines the morphosyntactic frame for the clause (66-67,117-118). The other language is the EL.

Even though there are two types of CS, the MLF model is solely concerned with intra-sentential switching (5). Intra-sentential switching can produce three types of constituents: ML+EL constituents, ML islands and EL islands. Examples of each type of constituent will be provided in the rest of this section. According to Myers-Scotton, islands are constituents which are composed of at least two morphemes in a hierarchical relationship (138). ML islands are constituents, within a code-switched clause, which consist entirely of ML morphemes. The morphemes in an ML island must be well formulated according to the ML grammar (78-81), for example:

(24)	Los	están	haciendo	bus	pa	otra	escuela.
	Them	be.3PL	do.PRES.PROG	bus.INF	to	another	school

"They are busing them to another school" (Reyes 1982:157).

In this example, the CP consists mostly of Spanish morphemes. This means Spanish is the ML. "pa otra escuela" is a constituent entirely in Spanish or, in other words, entirely in the ML. This is an example of a ML island. Contrastingly, EL islands are constituents, within a code-switched

utterance, which consist entirely of EL morphemes within a code-switched utterance. EL islands are produced when morphosyntactic features of the ML are inhibited and that of the EL is activated (Myers-Scotton 1993:6). The morphemes in EL islands must also be well formulated, but, in this case, the EL provides the morphosyntactic frame. Furthermore, EL islands are usually constituents which are idiomatic, formulaic, or peripheral (78-81,144). The following example is a Papiamento-English code-switched utterance. Papiamento is in normal font, whereas English is italicized.

(25) Ayera Marco tabata/tawata *a hot mess* riba dansvloer

yesterday Marco was a hot mess on dance floor

"Yesterday, Marco was a hot mess on the dance floor"

In this example, Papiamento is the ML and "a hot mess" is a constituent entirely in English, the EL. It is also important to note, in Papiamento the adjective-noun constructions, Papiamento adjectives come after the noun, whereas in English it is the opposite. This means "a hot mess" follows the EL word order and the EL provides the morphosyntactic frame for this constituent. This is an example of an EL island. Furthermore, ML+EL constituents are constituents which consist of morphemes from two languages, a ML and an EL (77). The ML provides the morphosyntactic frame for ML+EL constituent. This is also known as the ML Hypothesis (82). According to Myers-Scotton, ML+EL constituents usually consist of one EL lexeme and any number of ML morphemes (77-78), for example:

(26) Mi ta *love* bo shimis

I ASPECT love your dress

"I love your dress"

However, phrases consisting of more than one EL morphemes can also occur within a ML+EL constituent, for example a noun and a modifier in Papiamento-Dutch CS (78-81, 87). The following is an example of Papiamento-Dutch CS. Papiamento is in normal font, whereas Dutch is italicized:

(27) Mi ta haya esaki un *keuze* *moeilijk*

I ASPECT find this a decision hard

"I find this a hard decision"

This is not an EL island because, the constituent follows the ML word order, not that of the EL. Just as English, Dutch adjectives appear before the noun. However, in (27), the adjective comes after the noun which follows the Papiamento word order.

In addition, there are two types of morphemes used to determine whether a morpheme belongs to a ML+EL constituent or an EL island. (6, 229-230). These morphemes are called system and content morphemes. To identify whether a morpheme is a system or content morpheme there are three properties. The three properties are: [+/- Quantification], [+/- Thematic Role-Assigner], and [+/- Thematic Role-Receiver] (99). The [Quantification] property is defined as "any lexical item [or affix] belonging to a syntactic category which involves quantification across variables" (100). These categories are marked as [+Quantification]. Once a morpheme possesses this property, it is a system morpheme. This includes categories such as quantifiers, determiners, possessive adjectives, but also tense and aspect. This is because tense and aspect also involve quantification. In their case, they involve quantification across events. So, not only do quantifiers belong to the [Quantification] property, but also "any category which behaves quantificationally in a model-theoretic semantic sense", such as tense or aspect (100). Any category that does not belong to the property, [-Quantification], is a potential content morpheme. Content morphemes possess one of the other two properties, [+Thematic Role-Assigner] or [+Thematic Role-Receiver]. Verbs belong to a prototypical category which has the [+Thematic Role-Assigner] property (100). Take the following sentence as an example:

(28) I kick the ball.

The verb "kick" assigns two thematic roles: the 'agent' role is assigned to the subject and the 'patient' role is assigned to the object, "the ball". Similarly, nouns belong to a prototypical category which contains the [+Thematic Role-Receiver] property. For example, in (7), the noun "I" receives an 'agent' role and "the ball" receives the 'patient' role. When a category does not possess either of these two thematic properties, it is a system morpheme. So, system morphemes have the feature [+Quantification], whereas content morphemes have the feature [-

Quantification] and either possess the feature [+Thematic Role-Receiver] or [+Thematic Role-Assigner]. See figure (10) below for a schematic representation of the properties.

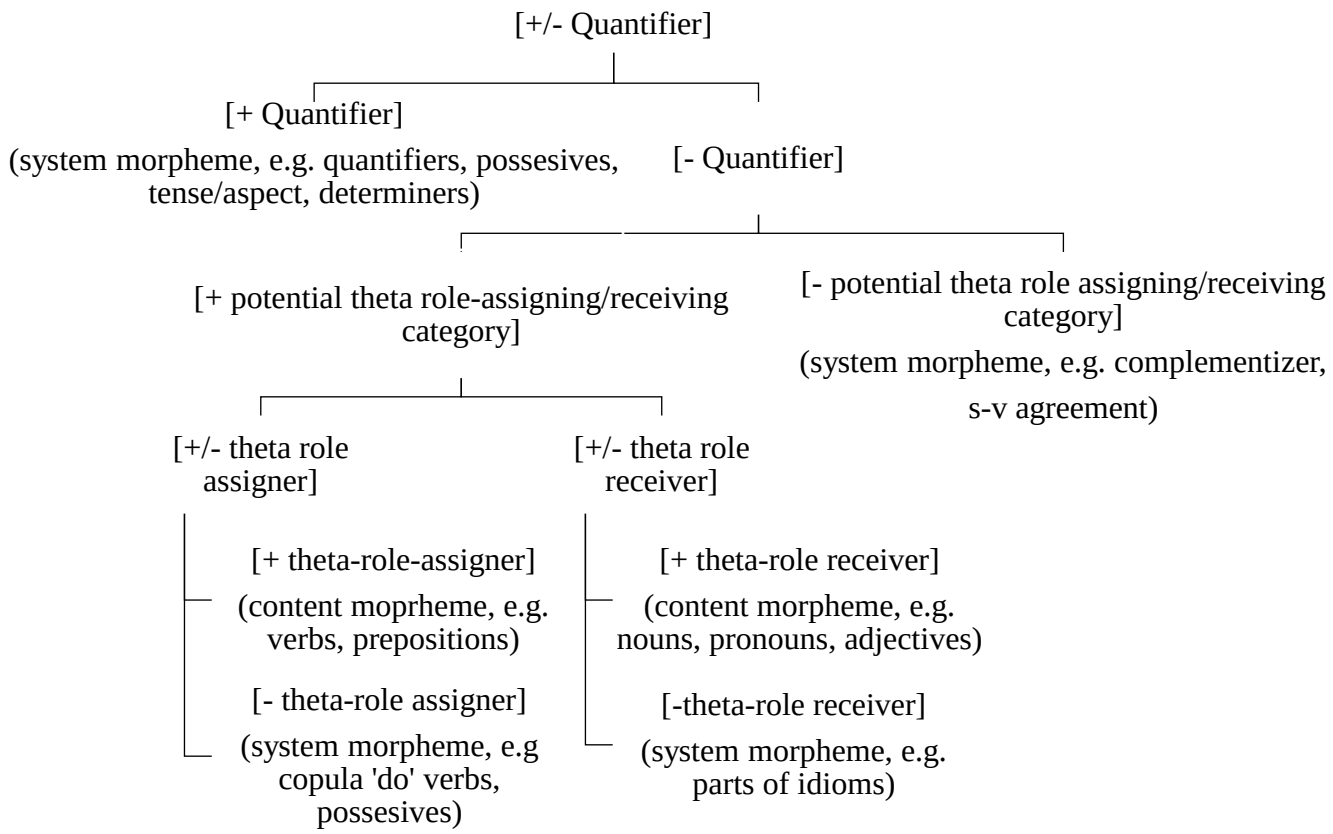

Figure 1. Schematic Representation of MLF Properties (Myers-Scotton 1993:101)

Furthermore, the nature of the MLF model and the ML hypothesis can be tested through two principles: the Morpheme Order Principle (MOP) and the System Morpheme Principle (SMP) (83, 7). The MOP applies to ML+EL constituents and states that the morpheme order in ML + EL constituents consisting of singly occurring EL lexemes and any number of ML will be that of the ML (83, 7). The following example is an English-Spanish code-switched utterance. English is italicized and Spanish is in the regular font.

(29) Me gusta el vestido *brown*

I like the dress brown

"I like the brown dress"

The sentence in (27) consists of mostly Spanish morphemes and, therefore, Spanish is the ML in this example. In English adjective-noun constructions, adjectives appear before the noun, whereas, in Spanish, the adjective appears after the noun. In the example above, the adjective appears after the noun. This is according to the ML word-order and adheres to the MOP. However, the MOP does not apply to constituents which include more than one EL Morpheme, since such constituents can also be EL islands, and MOP only applies to ML+EL constituents. Similarly, the SMP also applies to ML+EL constituents. The SMP states that in ML+EL constituents, all system morphemes "with grammatical relations outside their head", will come from the ML (83). This means that syntactically relevant EL system morphemes cannot occur in an ML+EL constituent. It is important to note that the SMP does not apply to all system morphemes, but to a type of system morpheme referred to as an "late outsider system morpheme" (Myers-Scotton & Jake 2000:1063). These morphemes function as agreement elements which make relationships between elements within a clause more transparent (Myers-Scotton & Jake 2017:346), for example subject-verb agreement in English:

(30) He kicks the ball

The suffix "-s" must occur when the third-person singular in the present is present to agree with the verb in person and number. This "-s" suffix is an example of a late outsider system morpheme. Alongside late system morphemes, there are also "early system morphemes". Early system morphemes are morphemes which appear with a content morpheme head. These morphemes add meaning to their content heads (Myers-Scotton & Jake 2017:344). These early system morphemes include morphemes such as plural markings and determiners. They can come from both the EL and the ML (Myers-Scotton 2002:92).

The Blocking Hypothesis further limits EL participation in ML+EL constituents and strengthens the SMP. The Blocking Hypothesis states that the ML blocks any EL content morphemes which are not congruent with the ML on three different levels. In other words, an EL morpheme must be congruent to the ML in three ways in order to form part of an ML+EL constituent. Myers-Scotton elaborates that congruence is when two entities correspond in respect of relevant qualities. The first level on which an EL content morpheme will be blocked, is if the morpheme is realized as a system morpheme in the ML. Secondly, the ML blocks any EL content morpheme, in ML+EL constituents, if it is not congruent with an ML content morpheme

counterpart in terms of thematic role assignment. Lastly, an EL content morpheme will be blocked when there is no congruence between EL content morphemes and ML content morphemes in terms of discourse or pragmatics (Myers-Scotton 1993:120-121). These blocked EL content morphemes instead form EL islands.

It is also important to discuss the type of speakers who can code-switch. Myers-Scotton, explains that speakers do not need to be entirely fluent in the EL when CS (7), however speakers do need to know some content morphemes from the EL in order to use them in ML+EL constituents. A speaker must also be more fluent in the ML than the EL when CS in ML+EL constituents since a certain level of fluency in the ML is needed to provide a morphosyntactic frame (8).

2.5 Testing predictions of the MLF for Papiamento-English CS

In this experiment, I will investigate Papiamento-English CS through the use of the MLF model. I will be answering the research question: do Arubans adhere to English or Papiamento morphosyntax when switching to an English verb in a Papiamento sentence? I will do this by constructing sentences which are in Papiamento, except for the code-switched verb which will be in English. I will test whether the morphosyntactic feature of verbal inflection is present on the verb or not, for example:

(31)	Sandra	ta	__ (give/gives)	e	pushi	cuminda
	Sandra	ASPECT	__	the	cat	food

"Sandra __ (give/gives) the cat food"

This CP in the example above consists of mostly Papiamento words. According to the MLF model, the language which has the most morphemes in a CS utterance is the ML. This makes Papiamento the ML and English the EL, according to the MLF model. The example above also contains an ML+EL constituent, namely "ta give/gives e pushi cuminda" meaning "give the cat food". Its constituency can be tested with 'do/did' auxiliaries (Burton-Roberts 2016:121).

(32) A: Does Sandra give the cat food?

B: Yes, she does (give the cat food)

In (32), the constituent “give the cat food” can be ellipted and the meaning of the sentence does not change. This means “give the cat food” is a constituent. Most importantly, this constituent consists of Papiamento morphemes and one English verb. This makes the constituent an ML+EL constituent.

Nonetheless, there are certain rules EL morphemes must follow in order to be present in an ML+EL constituent. In example (31), the EL morpheme is an English verb. Verbs are ‘stereotypical’ content morphemes which assign a theta role. According to the ML hypothesis, EL content morphemes can occur in ML+EL constituents, however, only if they adhere to the syntactic features of the ML (Myers-Scotton 1993:82). Additionally, the Blocking Hypothesis states that EL content morphemes must be congruent to the ML on three levels, otherwise they will be blocked from entering a ML+EL constituent. Firstly, EL content morphemes must not be realized as a system morpheme in the ML. Secondly, the content morpheme must be congruent to its ML counterpart in terms of thematic role. Lastly, it must be congruent to its ML content morpheme counterpart in terms of discourse and pragmatics. A verb is not a system morpheme. The English verb has a ML content morpheme counterpart in terms of thematic role and is congruent to its ML content morpheme counterpart in terms of discourse and pragmatics. This allows English verbs to form ML+EL constituents in Papiamento-English CS according to the Blocking Hypothesis and MLF.

However, the Blocking Hypothesis only applies to uninflected verbs in ML+EL constituents, since the ‘-s’ suffix used to inflect English verbs is another type of morpheme, namely a late outsider system morpheme which applies to the SMP. According to the SMP, in ML+EL constituents, late outsider system morphemes come from the ML (Myers-Scotton & Jake 2000:1063-1064). In this experiment, Papiamento is the ML. So, late outsider system morphemes are expected to come from Papiamento. Moreover, according to the ML hypothesis, the ML provides the morphosyntactic frame of the clause. This means not only do late outsider system morphemes come from the ML, but Papiamento also determines the morphosyntactic frame for the entire clause. Papiamento never carries inflection on the verb and is always presented in its bare form. Therefore, for these examples, the MLF model predicts the ‘-s’ suffix cannot be present in ML+EL constituents. In other words, the MLF predicts that the English verb will appear without inflection.

In my thesis, participants were presented with a total of 40 gapped sentences similar to (32) which consisted of Papiamento words, except for the missing English code-switched verb. These sentences will also be referred to as target sentences. Consider (33):

(33) Rosa ta __ (borrow/borrows) su ruman un blusa
Rosa ASPECT __ POSS sibling a shirt
"Rosa __(borrow/borrows) her sibling a shirt"

The remaining target sentences can be found in the appendix (6).

Alongside these target sentences, filler sentences were also used. These sentences served as 'distraction' from the experiment and to avoid that participants would pick the same option each time if presented only with Type I sentences. These filler sentences consisted of Papiamento morphemes and were missing either a noun or determiner, for example:

(34) Sofia ta core patras di e __ (cabrito/goat)
Sofia ASPECT run after the __
"Sofia runs after the __ (cabrito/goat)"

(35) Mi ta spera nos gana __ (e/the) competencia
I ASPECT hope we win __ competition
"I hope we win __ (e/the) competition"

Nouns are prototypical content morphemes which receive a theta role. So, just as verbs discussed above, EL nouns can only appear in an ML+EL constituent when it adheres to the morphosyntactic structure of the ML and is congruent to Papiamento on three levels. Similar to verbs, nouns are not system morphemes. English nouns used in the filler sentences also have Papiamento content morpheme counterparts in terms of thematic, discourse and pragmatics. So, just as verbs, nouns can appear in ML+EL constituents. Furthermore, determiners belong to the system morphemes, however not to the late outside system morphemes which apply to the SMP. Determiners belong to the Early System Morphemes which can come from both the ML and EL (Myers-Scotton 2002:92). Additionally, just as the English verbs discussed above, both EL nouns and determiners can only form an ML+EL constituent if they adhere to the

morphosyntactic frame of the ML. However, there is no difference in morphosyntactic marking between nouns and determiners in Papiamento and English used in this experiment. This means that their syntactic context will not offer a way to check whether the ML determines the morphosyntactic frame. Instead, these filler sentences were used so speakers could fulfill a different task, namely, to indicate the preference speakers must code-switch in a syntactic environment, nouns, and determiners, in which both languages have the same kind of morphosyntactic features expressed.

All in all, in this thesis I will investigate whether these predictions of the MLF are correct when it comes to Papiamento-English CS within a VP. The following sections will discuss the materials and methods used to investigate these predictions, the results of this study and a discussion.

3. Materials & Method

To test the prediction of the MLF discussed above, an acceptability judgment experiment was carried out through the use of an online survey developed through Qualtrics. The survey was tailored towards Arubans who speak both Papiamento and English. An online survey was used to gather a significant amount of data from Aruban participants in different geographical locations. Furthermore, due to the Covid-19 pandemic, an online experiment was the safest and easiest method. At the start of the survey each participant had to fill in a background questionnaire and consent form (see appendix 2 and 4). Participants were recruited through a social media post in Papiamento shared through Facebook (see appendix 1). Once the necessary number of responses were reached, the Qualtrics link was closed and no one else could respond. Participants took part on a voluntary basis and could stop their participation at any given moment without explanation.

3.1 Material

For this acceptability judgement experiment, 60 sentences were formulated. All sentences contain Papiamento-English code-switching in which Papiamento is the ML. All sentences were formulated in the Papiamento word-order according to the MOP to agree with the MLF. Of the 60 sentences, 40 were target sentences used to investigate the predictions of the MLF and 20 were fillers used as a distraction from the experimental task. Three types of sentences were developed:

- Type I: 40 target sentences in which the third person present singular English verb is missing. The participant would have to fill in the gap with an English verb with or without inflection, for example:

(36) Manuela ta __ (pray/prays) tur anochi
Manuela ASPECT __ every night
"Manuela __ (pray/prays) every night"

- Type II: 10 filler sentences in which the noun is missing. Participants would have to pick between a Papiamento or English noun.

(37) El a gara e __ (fish/pisca)
3rd SG ASPECT catch the __
"He/she/it caught the __ (fish/pisca)"

- Type III: 10 filler sentences in which the determiner is missing. Participants would have to pick between a Papiamento or English definite article, for example:

(38)

E	shoco	ta	sconde	den	__ (e/the)	buraco
the	owl	ASPECT	hide	in	__	hole

"The owl hides in __(e/the) hole"

Initially, the 40 target sentences were split into 3 groups depending on verb valency (transitive, intransitive and ditransitive), however the difference between the results of the sentences were not statistically significant. Therefore, the sentences are grouped together as 40 target sentences. A list of all the sentences can be found in the appendix (6). The participants were presented the sentences in the same order presented in the appendix. Type I sentences were used to answer to test the predictions of MLF, whereas Type II and III sentences were used as a distraction from the experimental task and asked speakers to fulfill a different task. Namely, whether or not to code-switch in a Papiamento-English code-switched sentence in which the noun or determiner is missing.

3.2 Method

The online survey was developed through Qualtrics and a link to the survey was shared through Facebook. Every single component of the survey had to be filled in, in order to complete the survey. The survey consisted of the following, in this order:

- Start-up screen. Consisted of a welcome message in Papiamento in which the participant also gives consent to participating in the survey.
- Introduction to the background questionnaire in Papiamento.
- Background questionnaire in Papiamento.
- Instruction for the acceptability judgement experiment in Papiamento.
- The 60 experiment sentences in which they have to fill in the gap with the word they found more acceptable.
- Closing message in Papiamento

Each component of the survey can be found in the appendix. The background questionnaire contained demographic questions and questions on language use (see appendix 4). Most of these questions were multiple choice, while some were open questions. The questionnaire also included a statement regarding CS. This statement could be graded with a 5-point scale

depending on how much they agreed with the statement. This statement was used to determine how often Arubans codeswitch between English and Papiamento (see appendix 4, question 14). Demographic questions regarding age and sex were asked in order to establish which demographic groups took part in this study. Questions regarding language use were used to determine how multilingual Arubans are. In other words, these questions were used to determine how often participants used English, Papiamento, Dutch, Spanish, and, possibly, other languages. Since, the extent to which a community is multilingual is relevant for any research on CS. Questions regarding language use include:

- When could participants speak English and Papiamento?
- What languages did the parents and caregivers of participants speak to them during childhood?
- How much do participants rate their English and Papiamento proficiency on a scale of 1 to 4?
- How often do participants use the four main languages of the island?
- Do Arubans habitually code-switch between Papiamento and English?

During the experiment part of the survey, participants were faced with a two-alternative forced choice (2AFC) acceptability task. This means the participants were presented with a pair of stimuli and had to pick which they find is the most acceptable. This type of task offers various benefits. Firstly, "comparative judgements are considered [easy] and reliable" by previous studies (Stadthagen-González, et al 2017:204). Additionally, 2AFC tasks do not take up much memory since the participants are presented with new comparable pairs of stimuli with each new sentence. This leads to more accurate results compared to a rating scale or more than two choices (205).

4. Results

4.1 Demographic analysis

The online survey yielded a total of 159 responses. The respondents were aged between 16-81 and were separated by age group. Given the nature of this research, most participants were aged 20 to 29 (see fig. 2 below).

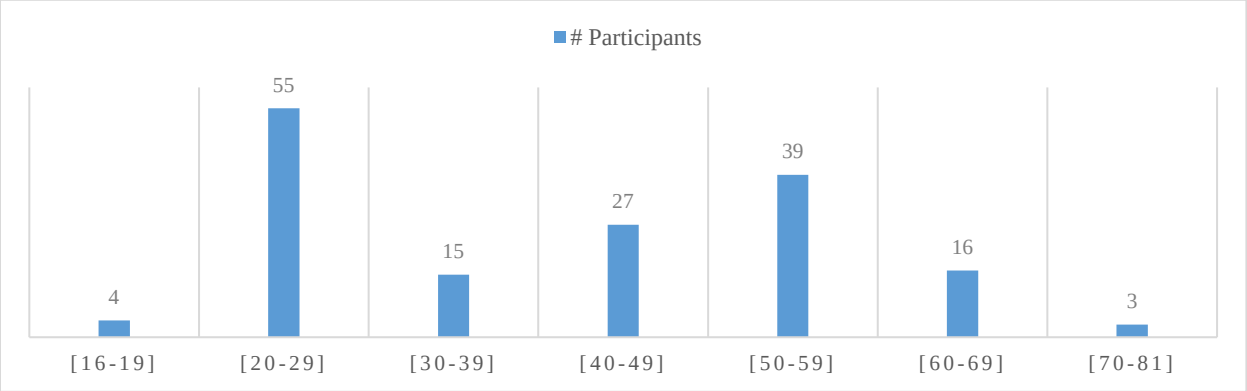

Figure 2. Age Groups Participants

Of all the participants, most were female. In total there were 108 female respondents and 51 were male, while no participant responded with 'other' (see fig. 3).

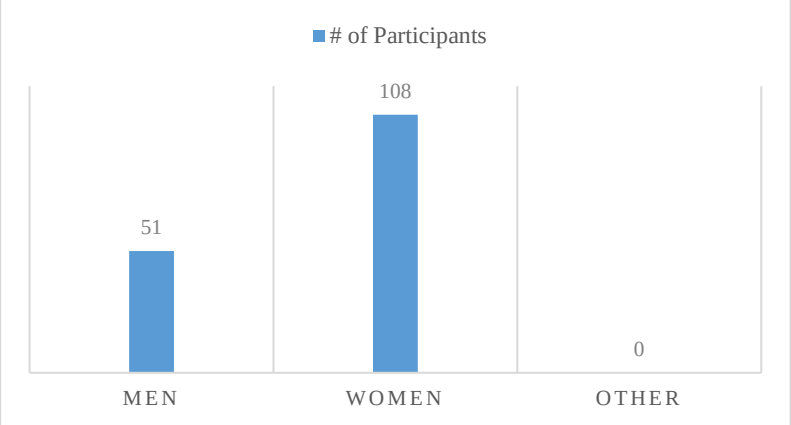

Figure 3. Sex of Participants

Most participants started speaking Papiamento since they were 2 years old or younger, whereas most participants first started speaking English since elementary school (see figures 4 and 5 below).

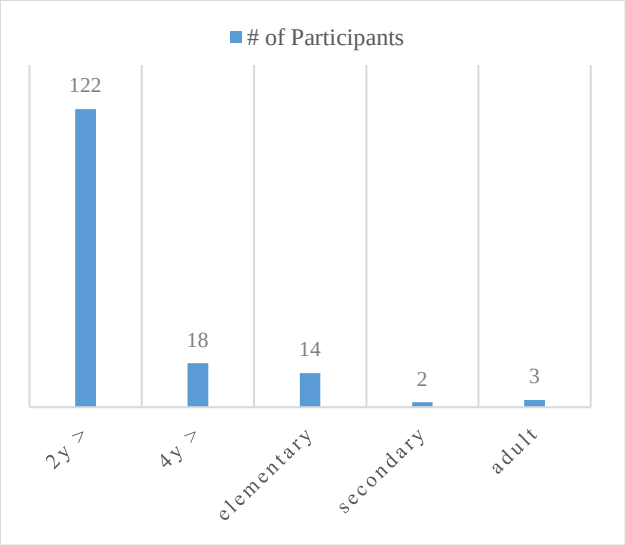

Figure 4. Age Participants Started Speaking Papiamento

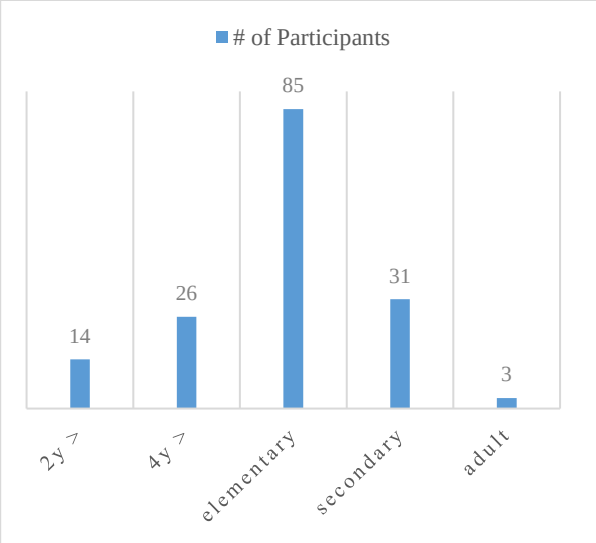

Figure 5. Age Participants Started Speaking English

Moreover, most parents and caregivers spoke Papiamento to the participants during their childhood (see tables 2, 4 and 6 below, and tables 1, 3 and 5 in appendix section 8). The numbers under the languages in tables 1,3 and 5 represent the number of participants who chose that language option in the survey question. When two languages come together in the table, for example Papiamento and Papiamento, this means the participant is recording that their parent/caregiver only spoke that one language during their childhood. When two different languages cross, this means the parents spoke the two languages chosen. For example, the first row and column of table 1 reads as follows: 99 mothers spoke only Papiamento with the participants during their childhoods. Also, tables 2, 4 and 6 are used to show when parents spoke more than two languages during childhood. When it comes to mothers, 62% of mothers spoke only Papiamento with the participants during their childhood. Many mothers also spoke another language alongside Papiamento during the participants' childhoods, however English was not used very often (see tables 1 & 2). As for the fathers, 65% of fathers spoke only Papiamento. Just as the mothers, the fathers of participants also made use of another language other than Papiamento during their childhoods, but the use of English was also scarce (see tables 3 & 4). Many caregivers, 56%, spoke only Papiamento to the participants as well. But also, for them, English was not used often (see tables 5 & 6).

Table 2. All Languages used by the Mother

	#Participants	% Participants
Monolingual	128	80
Bilingual	21	13
All 4 languages	6	4
Papiamento, English & Dutch	3	2
Papiamento, English & Spanish	1	1
N/A	0	0
Total	159	100

Table 4. All Languages used by the Father

	#Participants	% Participants	# Father	% Father
Monolingual	129	81	129	83
Bilingual	19	12	19	12
All 4 languages	4	2,5	4	3
Papiamento, English & Dutch	3	2	3	2
N/A	4	2,5	-	-
Total	159	100	155	100

Table 6. All Languages used by the Caregiver

	#Participants	% Participants	# Caregiver	% Caregiver
Monolingual	50	31	50	79
Bilingual	9	6	9	14
All 4 languages	3	2	3	5
Papiamento, English & Spanish	1	1	1	2
N/A	96	60	-	-
Total	159	100	63	100

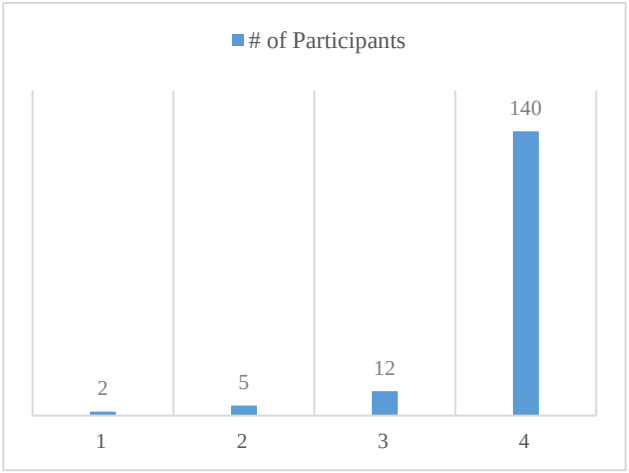

Figure 6. Papiamento Self-Rating

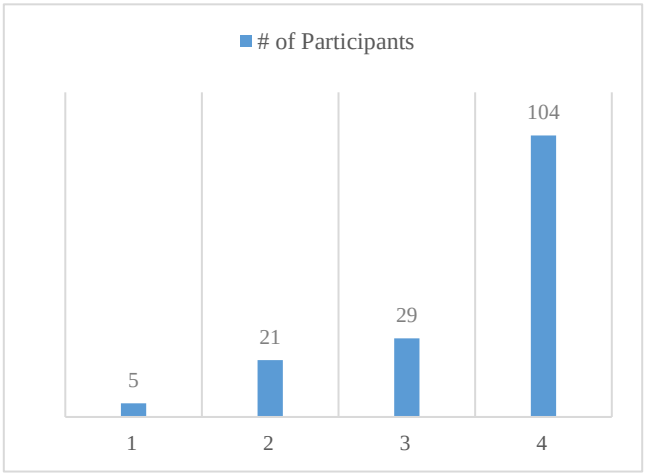

Figure 7. English Self-Rating

Additionally, most participants reported their proficiency to be a 3 or 4 in both languages (see figs. 6 and 7 above). The meaning of the scores 1 through 4 are explained in the appendix (section 4, questions 6 and 7). When it comes to language use, most participants recorded speaking more than two languages (see table 7). Of the four main languages, most participants responded that they use Papiamento daily. English was also recorded by most to be spoken very often or every day, whereas Dutch and Spanish were spoken less frequently (see table 7). Aside from the four main languages provided, participants also spoke other languages (see table 8).

However, even though some participants speak other languages, most recorded using these other languages only sometimes. Only four participants used their other language(s) very often or daily.

Table 7. Language use

	Never	Sometimes	School/ Work	Very Often	Daily	N/A	Total
Papiamento	1	11	5	17	125	0	159
English	3	35	27	31	62	1	159
Dutch	5	21	47	29	57	0	159
Spanish	11	65	26	27	27	3	159
Other	34	12	2	3	1	107	159

Table 8. Other language use

	Never	Sometimes	School/ work	Very often	Daily	Total
French	0	4	0	2	0	6
Portuguese	0	2	2	0	1	5
German	0	2	0	0	0	1
Farsi	0	0	0	1	0	1
Hindi	0	1	0	0	0	1
Chinese	0	1	0	0	0	1
Surinam	0	1	0	0	0	1
Japanese	0	1	0	0	0	1

Furthermore, results on whether Arubans keep Papiamento and English separate on a daily basis were scattered (see fig. 8). Many participants did not agree and do not keep English and Papiamento separate. In other words, they do code-switch between Papiamento and English daily. To gather ‘more readable’ results, the “completely disagree” and “disagree” were grouped together. This group will be called CS. “completely agree” and “agree” were also grouped and will be called no CS. These grouped results can be found in table 9.

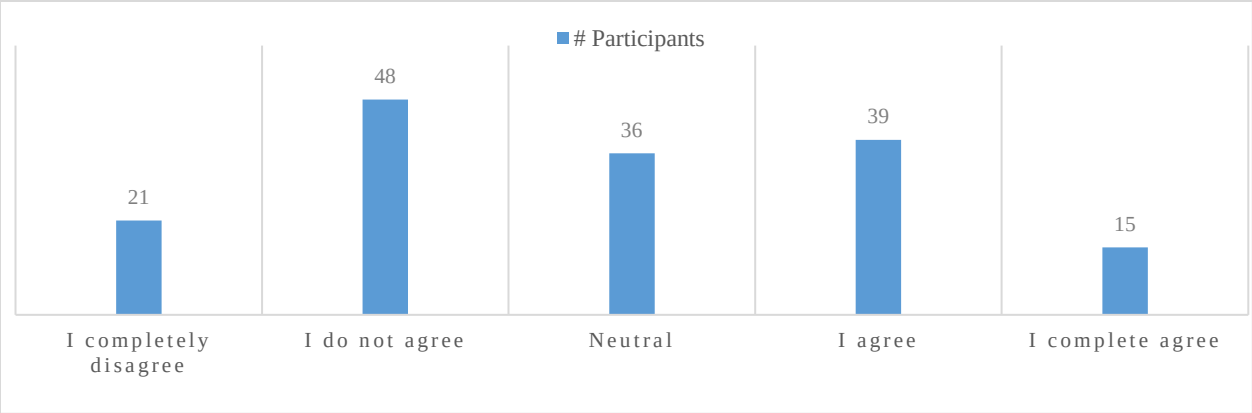

Figure 8. Daily Papiamento and English CS

Table 9. Papiamento-English CS of participants

	# Participants	% Participants
CS	69	43
No CS	54	34
Neutral	36	23
Total	159	100

All in all, most participants speak more than one language, especially Papiamento and English. Most parents and caregivers of participants spoke only Papiamento with the participants during their childhood, however many also used other languages alongside Papiamento. In other words, many parents of participants also speak more than one language. Many speakers have also recorded that they code-switch daily between Papiamento and English.

4.2 Results of Experiment

For Type I sentences, most participants (86%) chose the verb which lacked inflection and contained grammatical features of the ML, in this case Papiamento (see table 10). In Table 10 the numbers under “no inflection” defines the number of participants who chose the verb with no inflection for a sentence. The numbers under the “sentences” column refers to the number of times a specific number of participants chose the uninflected verb out of the 40 target sentences. The number of participants who chose the uninflected verb multiplied by the amount of sentences this amount occurred in, yields the numbers under the “total responses” column. For example, the first row shows that, out of the total of 159 participants, 132 participants chose the uninflected verb in four out of the total 40 sentences. When 132 is multiplied by four, it yields 528 total responses. When all those responses are added together, we get the total amount of times participants chose the uninflected verb over the 40 sentences. The maximum total of the “inflection” column is the total amount of participants. The maximum total of the total responses was calculated by multiplying the total sentences by the total amount of participants. The total responses divided by the maximum total responses multiplied by 100 provides the percentage of participants who chose the uninflected verb over the 40 target sentences. Furthermore, the results between age groups vary very slightly for Type I sentences (see fig. 9). The results between age groups vary between 80 to 91%. However, the results do not differ greatly. Therefore, further on, all age groups will be grouped together when analyzing Type I sentences.

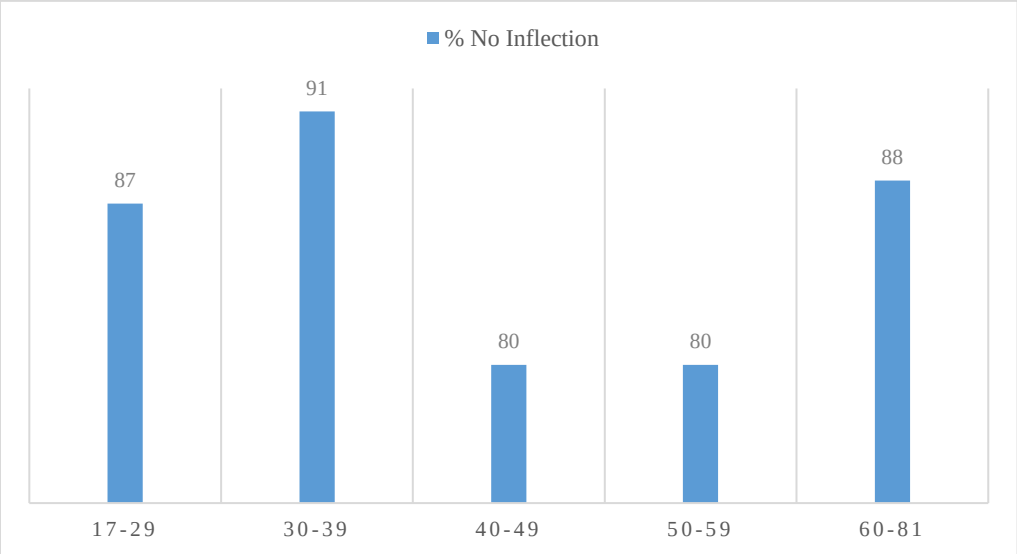

Figure 9. Results for Type I sentences per Age Group

Table 10. Type I target sentences

	No inflection	Sentences	Total Responses
	132	4	528
	133	4	532
	134	3	402
	135	1	135
	136	6	816
	137	3	411
	138	4	552
	139	3	417
	140	3	420
	141	2	282
	142	1	142
	143	4	572
	144	1	144
	147	1	147
Total	-	40	5500
Maximum total	159	40	6360
% No Inflection	-	-	86,48

When it comes to the fillers, participants preferred not to code-switch, especially for type III sentences where participants preferred the Papiamento determiner over the English variant 95% of the times (see table 11). In table 11, the numbers under the Type II and Type III columns show the number of speakers who chose the Papiamento noun or determiner over the English one. For instance, the first row shows that 148 participants chose the Papiamento noun and 151 chose the Papiamento determiner. Additionally, it is important to note that one Type II sentence offered significantly different results than the other sentences (see appendix 6, sentence 48). This was due to a misspelling of the Papiamento noun. This sentence is an outlier and will be excluded from the analysis (see fig. 10). This is the reason Type II sentences have a total of nine sentences in table 11, instead of ten. The total amount of participants multiplied by the number of sentences yields the maximum total of Type II and Type III sentences. The total of Type II

sentences divided by its maximum total, multiplied by 100 yields the percentage of speakers who preferred the Papiamento noun over the English one. In the same manner, the total of Type III sentences divided by its maximum total, multiplied by 100 gives the percentage of speakers who preferred the Papiamento determiner over the English one.

Table 11. Type II and Type III sentences

	Type II	Type III
	Papiamento Noun	Papiamento Determiner
	148	151
	149	152
	140	152
	139	151
	132	152
	147	153
	140	151
	145	152
	137	152
	-	152
Total	1277	1518
Total Sentences	9	10
Maximum Total	1431	1590
% Noun	89,24	95,47

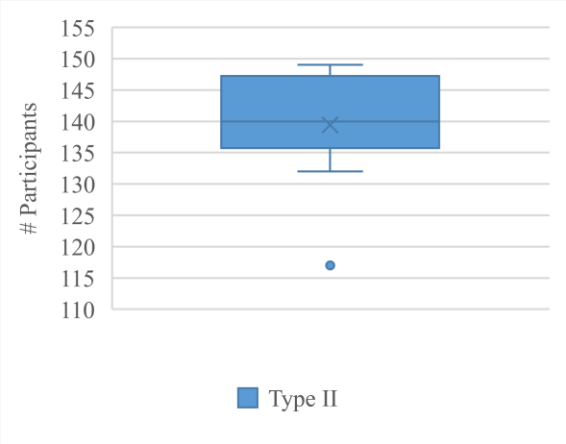

Figure 10. Boxplot Outlier Type II sentence

Furthermore, the results between age groups for Type II and III sentences also vary slightly (see fig. 11). For the Papiamento determiners, the percentage of participants varies between 94 and 100. The percentage of participants who picked the Papiamento noun over the English one varies the most between age groups; between 75 and 99 percent. However, the overall results do not differ significantly. Therefore, further on, all age groups will be grouped together for analysis for Type II and III sentences as well.

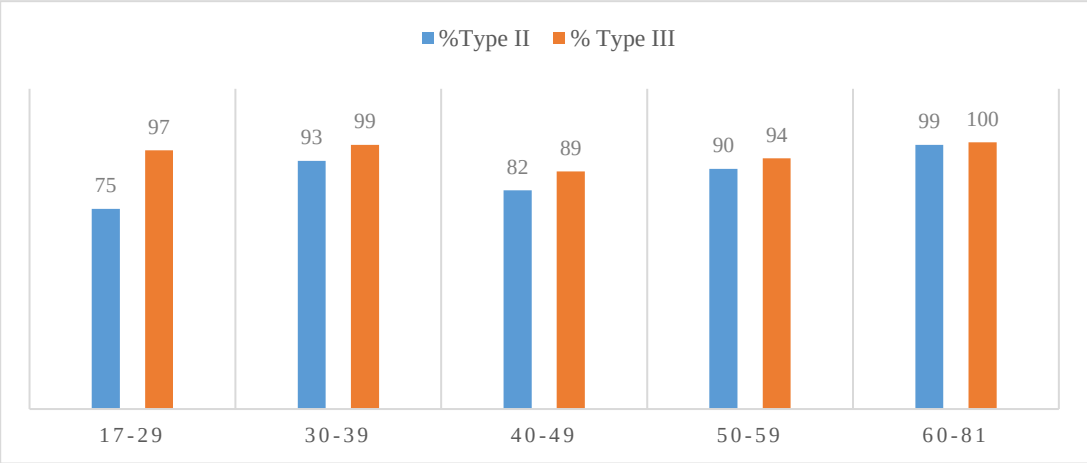

Figure 11. Results for Type II and III sentences per Age Group

All in all, when presented with Type I sentences, participants preferred the uninflected English verb. Whereas, for both Type II and Type III sentences most speakers preferred the Papiamento option and did not code-switch. Also, for all three types of sentences age shows not to be a significant factor.

5. Discussion

This present study seeks to research whether Arubans who speak Papiamento and English adhere to MLF model when CS in English and Papiamento with an English verb. The results reveal that most participants do adhere to the MLF when CS in Type I sentences (see table 10).

Participants were forced to code-switch when presented with Type I sentences. They had to choose which English verb they found to be most acceptable and the results for Type I sentences show that most participants preferred the verb option without inflection. As previously mentioned, verbs are 'stereotypical' content morphemes which assign a theta role. EL content morphemes occur in ML+EL constituents, however, only if they adhere to the syntactic features of the ML (Myers-Scotton 1993:82). EL content morphemes must also be congruent to their ML on three levels according to the Blocking Hypothesis. In this experiment, Type I sentences consisted of mostly Papiamento morphemes. This makes Papiamento the ML in this study. In Type I sentences, all verbs were congruent to their ML according to the hypothesis. Furthermore, the ML hypothesis states that, in ML+EL constituents, the ML provides the morphosyntactic frame for the clause. Papiamento is the ML and, therefore, provides the morphosyntactic frame for Type I sentences. Papiamento never carries inflection on the verb and is always presented in its bare form. So, to adhere to the MLF in this experiment, participants had to pick the verb which adheres to Papiamento morphosyntax and lacks inflection. Of all the participants, 86% of them chose the verb which lacked inflection and adheres to the ML, Papiamento (see table 10). This adheres to the MLF model and answers the research question of this study: do Arubans adhere to English or Papiamento morphosyntax when switching to an English verb in a Papiamento sentence? Participants in this study mostly chose the verb which lacked inflection and adhered to Papiamento morphosyntax. This means the MLF make the right predictions for Papiamento-English CS and Arubans adhere to Papiamento morphosyntax when switching to an English verb in a Papiamento sentence.

As for Type II and III sentences, participants mostly preferred not the code-switch and mostly chose either the Papiamento noun or determiner instead of its English counterpart. It is important to note that participants were not forced to code-switch for Type II or III sentences. However, they were forced to make a choice between a Papiamento and English option. In other words, participants could choose whether to code-switch or not when presented with Type II or

III sentences. It is also important to note, the morphosyntactic markings of the nouns and determiners of Papiamento and English chosen in this experiment did not differ. With no difference in morphosyntactic marking, there is no way to determine whether the ML determines the frame or not. Therefore, these filler sentences were not used to test the predictions of the MLF, but instead serves as a distraction from the experimental task. The filler sentences ask the participants to carry out a different task, namely, to give their preference of CS. The results for Type II sentences show that most of the participants preferred the Papiamento noun option over the English one. 89% of participants chose the Papiamento noun (see table 11). In other words, most participants preferred not to code-switch for Type II sentences. Similarly, most participants preferred not to code-switch when presented with the choice between an English and Papiamento determiner. 96% of participants chose not to code-switch for Type III sentences (see table 11). All in all, most participants preferred not to code-switch when presented with Type II and III sentences. The fact that most participants chose not to code-switch in filler sentences, supports my choice to force the participants to code-switch in Type I sentences. If participants were not forced to code-switch in Type I sentences, it can be assumed that most participants would have chosen the Papiamento verb option instead of the English one. Therefore, the results provide support for my methodology of the gapped sentence in Type I sentences. In addition, 34% of participants reported that they do not habitually code-switch in Papiamento and English and 26% were neutral (see table 9). In other words, most participants either did not habitually code-switch between Papiamento or English or did not have an opinion on it. This could have had influence on their CS.

Furthermore, the background questionnaire also yielded interesting results. Most participants were reported speaking Papiamento at two years old or younger. This was expected from the Aruban participants, since Papiamento is the most dominant language on the island and the first language of most Arubans. Furthermore, data shows that the parents and caregivers of the participants mostly spoke Papiamento with them during childhood (see tables 1-6). Which further explains why most participants reported speaking Papiamento at such a young age. The time in which most participants first learn English is during elementary school. This is because most Arubans first learn to speak English through compulsory English lessons given in the last two years of elementary school. Also, most of the parents and caregivers of participants did not speak English with them. This further explains why many participants did not speak English at a

as young an age as they spoke Papiamento. Furthermore, the data further shows how multilingual the island is. Most participants recorded speaking more than 2 languages and the four dominant languages are spoken by almost every participant (see table 7). Participants also reported speaking languages other than the four main languages (see table 8). Many parents and caregivers of participants also made use of various languages other than Papiamento during their childhoods. These results further strengthen the multilingual image of Aruba.

However, there were certain limitations to this study. Firstly, the survey was shared online through a personal Facebook social media account and was not made public. This was done to protect privacy; however, this limits the amount and types of participants this experiment could have had. Social media is also mostly used by the youth. This could have had effect on the age distribution of this experiment and could explain the high number of participants between 20-29. The social media account in which the advert was shared also has a high number of peers in the 20-29 age-group which could further explain the high number of participants in this age group. Thankfully, age did not prove to be a major factor for this experiment. Secondly, the questions regarding language use were not completely understood and not specific enough. Only one question regarding language use of the participants was asked and it discussed the frequency of the languages they used. The languages and options they could choose from can be found in the appendix (section 4, question 13). Only one question regarding language use is not enough to gather thorough information, especially if a participant speaks various languages daily, which proved to be the case. Languages can be used across various setting throughout a day. One can use English and Papiamento daily, however one might use Papiamento to speak to family and English to speak to friends. Lastly, there were no Papiamento or English monolingual control group. However, it is important to note that it is a (very) hard task to find monolingual Papiamento speakers given the multilingual island most speakers live and grow up in. Most Aruban speakers are multilingual at a very young age, even if they cannot use the language fluently. This can also be seen through the results of language use among participants' parents. Many parents were reported speaking other languages during childhood alongside Papiamento.

6. Conclusion

All in all, this thesis sought to answer the following research question: do Arubans adhere to English or Papiamento morphosyntax when switching to an English verb in a Papiamento sentence? This thesis has shown that most Aruban participants did adhere to the MLF model when forced to code-switch with an English verb in a Papiamento sentence. The MLF states that one language in a code-switched utterance provides the morphosyntactic frame for the clause. This language is called the ML, and in this experiment, Papiamento is the ML and provides the morphosyntactic frame. Papiamento lacks inflection and tense marking on the verb; therefore, participants were expected to pick the English verb without inflection. Results show that most participants, 86%, chose the uninflected English verb and adhered to the MLF. Additionally, the ML+EL constituents in the target sentences also followed the word order and morpho-syntactic frame of the ML, which further adheres to the MLF. Therefore, to answer the research question, Arubans adhere to Papiamento morphosyntax when switching to an English verb in a Papiamento sentence, which also adheres to the MLF model.

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8. Appendix

8.1 Recruitment advert in Papiamento with English translation

1a. Advert in Papiamento:

Bo ta papia Papiamento? And English too? Esaki ta e questionario pabo!

Pa mi bachelor mi kier investiga con Arubiano ta usa lenguahe, specificamente e dos lenguahe mas usa na Aruba, esta Ingles y Papiamento. Pa mi por investiga esaki, mi mester di boso ayudo.

Si bo lo kier yuda, mi lo ta hopi agredecido si señor(a) por yena e siguiente questionario. Danki di antemano y pasa un dushi dia!

1b. English translation of advert:

Do you speak Papiamento? And English too? Then this is the survey for you!

For my bachelor thesis I want to investigate how Arubans use language, specifically the two most used languages on Aruba, English and Papiamento. To investigate this, I need your help.

If you want to help, I would be very thankful if you fill in the following survey. Thank you in advance and have a lovely day.

8.2 Start-up message in Papiamento with English translation

2a. Papiamento start-up message:

Bon Dia y danki pa señor(a) su ayudo cu nos investigacion.

Aruba ta un isla multicultural y multilingual. Hopi Arubiano ta papia mas cu un lenguahe y dor di esey hende sa mescla idioma dor di otro. Sigur e dos idiomanan mas usa na Aruba, Papiamento y Ingles. Ora dos of mas idioma wordo usa dor di otro, esaki ta yama "code-switching". “Code-switching” ta pasa regularmente na Aruba y ta algo normal pa communidadnan cu ta papia mas cu un idioma, pero ainda e no ta completamente comprendi. Pa e motibo aki, anos, como linguista, ta hopi interesa den “code-switching”.

Cu e questionario aki nos lo kier investiga con Arubiano ta "code-switch" entre Papiamento y Ingles. Prome, nos lo ta hopi agredecido si señor(a) lo por duna nos un poco informacion tocante señor(a) su pasado pa yuda cu e investigacion.

Despues, nos lo presenta señor(a) cu diferente frase cu falta un palabra. Señor(a) lo mester scohe entre dos palabra (cu nos lo duna) pa yena e espacio den e frase. Mas informacion lo sigui despues.

Nos lo kier recorda señor(a) cu señor(a) su informacion den e questionario aki lo ta completamente anonimo y confidencial.
Señor(a) su respuestanan lo wordo trata den acuerdo cu GDPR.

Dor di ta acuerdo cu e questionario señor(a) ta compronde cu:
-señor(a) su participacion ta completamente voluntario
-señor(a) por termina su participacion na cualkier momento pa cualkier motibo

Si señor(a) tin cualkier pregunta tocante e questionario, señor(a) por contacta:
s.c.angela@umail.leidenuniv.nl

2b. English translation of start-up message:

Good Day and thank for your help with this investigation.

Aruba is a multicultural and multilingual island. Many Arubans speak more than one language and sometimes these languages mix. Especially the two most spoken languages on Aruba, Papiamento and English. When two or more languages are used within the same utterance this is called “code-switching”. Code-switching happens regularly on Aruba and is something that occurs naturally in communities which speak more than one language, but is still not completely understood. Therefore, linguists find code-switching very interesting and worth researching.

With this survey we would like to investigate how Arubans code-switch between Papiamento and English. First, we would like to ask you to offer some background information for this investigation. After, we will present you with various sentences which are missing one word. You will be offered two words to choose from to fill in the gap in the sentence. More information will follow.

We would like to remind you that your information will be kept anonymous and be strictly confidential. Your responses will be treated in accordance with the GDPR.
By consenting to participate in this survey you acknowledge that:
- your participation is completely voluntary
- you are aware that you can terminate your participation at any time for any reason

If you have any questions regarding this survey, feel free to contact:
s.c.angela@umail.leidenuniv.nl

8.3 Introduction to the background questionnaire in Papiamento with English translation

3a. Papiamento introduction:

Esaki ta e prome parti di e questionario. Den e parti aki nos lo haci un par di pregunta tocante señor(a) su pasado pa yuda cu e investigation. Nos lo ta hopi agradecido si señor(a) por yena e siguiente preguntanan.

3b. English translation of introduction:

This is the first part of the survey. In this part of the survey we would like you to offer some background information for this research.

8.4 Background questions with English translation

4a. Background questions in Papiamento:

1. Sexo:
    - Homber
    - Muher
    - Otro
2. Edad: ___(16+)
3. Education (actualmente of compli):
    - Basisschool
    - Mavo/VMBO
    - HAVO
    - VWO
    - Universidad Bachelor
    - Universidad Master
    - Niun
4. Desde ki tempo señor(a) ta papia Papiamento?
    - Desde 2 aña of menos
    - Desde 4 aña of menos
    - Desde enseñansa basico
    - Desde scol secundario
    - Como adulto
5. Desde ki tempo señor(a) ta papia Ingles?
    - Desde 2 aña of menos
    - Desde 4 aña of menos
    - Desde enseñansa basico

- Desde scol secundario
- Como adulto

6. Con bon señor(a) ta papia Papiamento riba un scala di 1 te 4?
    - 1, mi conoce un par di palabra y exprecion
    - 2, mi por expresa mi mes cu confiansa den un conversation simple
    - 3, mi por expresa mi mes cu un tiki confiansa den un conversation amplio
    - 4, mi por expresa mi mes cu confiansa den un conversation Amplio
7. Con bon señor(a) ta papia Ingles riba un scala di 1 te 4?
    - 1, mi conoce un par di palabra y exprecion
    - 2, mi por expresa mi mes cu confiansa den un conversation simple
    - 3, mi por expresa mi mes cu un tiki confiansa den un conversation amplio
    - 4, mi por expresa mi mes cu confiansa den un conversation amplio
8. Cualkier idioma(nan) señor(a) su mama tabata papia cu señor(a) mas tanto tempo di enfancia? (por scohe mas cu un contesta)
    - Papiamento
    - Hulandes
    - Ingles
    - Spaño
    - Otro (por fabor mentiona cua)
    - No ta aplicabel
9. Cualkier idioma(nan) señor(a) su tata tabata papia cu señor(a) mas tanto tempo di enfancia? (por scohe mas cu un contesta)
    - Papiamento
    - Hulandes
    - Ingles
    - Spaño
    - Otro (por fabor mentiona cua)
    - No ta aplicabel
10. Cualkier idioma(nan) señor(a) su voogd of cuidado tabata papia mas tanto cu señor(a) tempo di enfancia?(por scohe mas cu un contesta)
    - Papiamento
    - Hulandes
    - Ingles
    - Spaño
    - Otro
    - No ta aplicabel
11. Na cua lenguahe(nan) señor(a) a haya les mas tanto durante enseñansa basico?
    - Papiamento
    - Hulandes

- Ingles
- Papiamento y Hulandes
- Otro (por fabor mentiona cua)
- No ta aplicabel

12. Na cua lenguahe señor(a) a haya les mas tanto durante education secundario?
    - Papiamento
    - Hulandes
    - Ingles
    - Papiamento y Hulandes
    - Otro (por fabor mentiona cua)
    - No ta aplicabel

13. Con hopi señor(a) ta usa e siguiente lenguahe(nan) den bida diario?

Lenguahe:

- Papiamento
- Hulandes
- Ingles
- Spaño
- Otro (por fabor mentiona cua)

Option:

- Nunca
- Un tiki
- Solamente pa scol of trabou
- Hopi
- Tur dia
- No ta aplicabel

14. Den cua medida señor(a) ta di acuerdo cu e siguiente frase:

"Den bida diario mi ta mantene Papiamento cu Ingles separa"

- Mi completamente no ta di acuerdo
- Mi no ta di acuerdo
- Mi ta neutral
- Mi ta di acuerdo
- Mi ta completamente di acuerdo

4b. English translation of background questions:

1. Sex:
    - male
    - female
    - other
2. Age: ___ (16+)
3. Education (currently or highest accomplished):
    - Elementary school

- Mavo/Vmbo
- HAVO
- VWO
- Uni bachelor
- Uni master
- None

4. Since when could you speak Papiamento?
    - 2 years or younger
    - 4 years or younger
    - Since elementary school
    - Since secondary education
    - As an adult
5. Since when could you speak English?
    - 2 years or younger
    - 4 years or younger
    - Since elementary school
    - Since secondary school
    - As an adult
6. How well do you speak Papiamento on a scale of 1 to 4?
    - 1, I know a few words and phrases.
    - 2, I can speak with confidence in a simple conversation
    - 3, I can speak with some confidence in an extensive conversation
    - 4, I can speak with confidence in an extensive conversation
7. How well do you speak English on a scale of 1 to 4?
    - 1, I know a few words and phrases.
    - 2, I can speak with confidence in a simple conversation
    - 3, I can speak with some confidence in an extensive conversation
    - 4, I can speak with confidence in an extensive conversation
8. Which language(s) did your mother most speak during your childhood? (more answers can be chosen at once)
    - Papiamento
    - Dutch
    - English
    - Spanish
    - Other (please specify)
    - Not applicable
9. Which language(s) did your father most speak during your childhood? (More answers can be chosen at once)
    - Papiamento

- Dutch
- English
- Spanish
- Other (please specify)
- Not applicable

10. Which language(s) did your caretaker(s) most speak during your childhood? (More answers can be chosen at once)
    - Papiamento
    - Dutch
    - English
    - Spanish
    - Other (please specify)
    - Not applicable
11. In which language(s) did you mostly get your elementary education in?
    - Papiamento
    - Dutch
    - English
    - Papiamento and Dutch
    - Other (please specify)
    - Not applicable
12. In which language(s) did you mostly get your secondary education in?
    - Papiamento
    - Dutch
    - English
    - Papiamento and Dutch
    - Other (please specify)
    - Not applicable
13. How often do you use the following languages in your daily life?

    Languages:
    - Papiamento
    - English
    - Dutch
    - Spanish
    - Other (please specify)

    Options:
    - Never
    - Sometimes
    - Only for school/work
    - Often
    - Everyday
    - Not applicable
14. To what extent do you agree with the following sentence:

    “I keep English and Papiamento separate in my daily life”

- I completely disagree
- I disagree
- I am neutral
- I agree
- I completely agree

8.5 Instructions to acceptability task in Papiamento with English translation

5a. Instructions in Papiamento:

Awor señor(a) lo cuminsa e siquiente parti di e questionario.

Den e siguiente parti nos lo presenta señor(a) cu varios frase di "code-switching" entre Papiamento cu Ingles. Cada frase lo falta un palabra cu señor(a) lo mester yena. Señor(a) lo mester scohe entre dos palabra (cu nos lo duna) pa yena e espacio den e frase. Scohe e palabra cu señor(a) ta haya ta pas mihor den e frase, pero no pensa mucho largo. No tin contesta incorecto. Hopi exito!

5b. English translation of instructions:

Now you will begin the second part of the survey.

In this part you will be presented with various Papiamento-English code-switched sentences. Each sentence will be missing one word which you will have to fill in. You will have to choose between two words, that we will give you, to fill in the space. Choose the word which you think fits better in the sentence, but don't think too much about it. There are no wrong answers. Good luck!

8.6 60 task sentences in order with direct English translation

1. E ta eat/eats e pan.
   He/she/it eats the bread.
2. E cacho ta bite/bites si bo core bay.
   The dog bites if you run away.
3. Sofia ta core patras di e cabrito/goat.
   Sofia runs after the goat.
4. Sandra ta give/gives e pushi cuminda.
   Sandra gives the cat food.
5. Mi ta spera nos gana e/the competencia.
   I hope we win the competition
6. E ta hit/hits e bala.

He/she/it hits the ball.

7. Manuela ta pray/prays tur anochi.
   Manuela prays every night.
8. Mi mama ta teach/teaches mi con pa cushina.
   My mom teaches me how to cook.
9. E prikichi ta bula den e/the palo.
   The parakeet flies in the tree.
10. Juancho ta play/plays su guitara.
    Juancho plays his guitar.
11. E Wara Wara ta fly/flies halto.
    The Wara Wara (a type of bird) flies high.
12. E ta lora den sand/santo.
    He/she/it rolls in the sand.
13. Pablo ta put/puts salo riba mesa.
    Pablo puts salt on the table.
14. Na scol, Jacobo ta learn/learns wiskunde.
    At school, John learns math.
15. Clara ta gusta come keshi/cheese
    Clara likes to eat cheese
16. Si bo no laga bay, e bom ta explode/explodes den bo man.
    If you don't let go, the bomb will explode in your hands.
17. Rosa ta borrow/borrows su ruman un blusa.
    Rosa borrows her sister a shirt.
18. Mi cacho ta gusta core patras di e/the lagadishi.
    My dog likes to run behind the lizard.
19. Debby ta read/reads buki tur dia.
    Debby reads a book every day.
20. Ora e ta tristo, E ta cry/cries henter dia.
    When she is sad, he/she/it cries the entire day.
21. El a planta e flor/flower den cura.
    He/she/it plants the flower in the garden.
22. E ta party/parties tur anochi.
    He/she/it parties every night.
23. Julia ta tell/tells su amiga un redo.
    Julia tells her friend a rumour.
24. Tanto palo, y e/the yuwana kier subi dimi.
    So many trees, and the iguana wants to climb mine.
25. Mami ta dance/dances cu Papi.
    Mom dances with dad.
26. Mi mata ta grow/grows poco poco.

My plant grows slowly.

27. Gregorio ta duna su amiga un gift/regalo.
    Gregorio gives their friend a gift.
28. Mi ruman ta hug/hugs mi ora mi ta tristo.
    My sibling hugs me when I'm sad.
29. Tur anochi e cacho ta bark/barks na e pushi.
    Every night, the dog barks at the cat.
30. E trupial ta riba e/the cadushi.
    The trupial (Aruban bird) is on the cactus.
31. Mi amiga ta let/lets su pushi bebe lechi.
    My friend lets her cat drink milk.
32. Eynan mi wela ta sit/sits tur dia.
    That is where my grandma sits every day.
33. Mi mama ta duna e pato bread/pan tur dia.
    My mom gives the duck bread.
34. Pedro ta call/calls su amiga un reina.
    Pedrocalls his friends a queen.
35. E ta push/pushes e porta.
    He/she/it pushes the door.
36. E shoco ta sconde den e/the buraco.
    The owl hides in the hole.
37. E ta take off/takes off su sapato.
    He/she/it takes off their shoes.
38. E pushi ta jump/jumps den e palo.
    The cat jumps in the tree.
39. No lubida di dune e/the hamster cuminda.
    Do not forget to give the hamster food.
40. Maria ta send/sends su mama un carta.
    Maria sends her mother a postcard.
41. Mi tata ta wash/washes su auto.
    My father washes his car.
42. E la gara e fish/pisca.
    He/she/it caught the fish.
43. Chita ta work/works duro.
    Chita works hard.
44. Sylvia ta scream/screams ora e wak un pega-pega.
    Sylva screams when she sees a pega-pega (type of lizard).
45. Nan a horta e/the bais durante dia.
    They stole the bicycle in broad daylight.
46. Robert ta buy/buys Fernando un regalo.

Robert buys Fernando a gift.

47. Nicholas ta love/loves Natasha.
    Nicholas loves Natasha.
48. E pumpkin/pompuna ey ta grandi!
    That pumpkin is big!
49. No ker'e! E ta lie/lies hopi.
    Don't believe them. He/she/it lies a lot.
50. Thomas ta show/shows Natalia e cas nobo.
    Thomas shows Natalia the new home.
51. Si nos no haci liher, e boat/boto ta bay sink.
    If we are not fast enough, the boat will sink.
52. Edwardo ta cancel/cancels su reservation.
    Edwardo cancels his reservation.
53. Cuidow! E Alpaca ta spit/spits si bo yega mucho serca.
    Watch out! The Alpaca spits if you get too close.
54. Erik ta plant/plants un palo di mango.
    Erik plants a mango tree.
55. Den Sofia su camber e/the baby ta drumi.
    The baby sleeps in Sofia's room.
56. Pa Pasco, Ricardo ta bring/brings Juancho un ayaca.
    For Christmas, Ricardo brings Juancho an ayaca.
57. Mi a trece e cuminda/food pa oma.
    I've brought the food for grandma.
58. Ora di proefwerk, Sandra ta think/thinks hopi duro.
    During an exam, Sandra thinks very hard.
59. E cuminda ta hopi dushi! Mi kier duna e/the koki un sunchi.
    The food is so good! I want to give the chef a kiss.
60. Monica ta like/likes prikichi.
    Monica likes parrots.

8.7 End message with English translation

7a. End message in Papiamento:

Esaki ta fin di e questionario.
Danki pa señor(a) su cooperacion y pasa un felis dia!

7b. English translation of end message:

This is the end of the survey.

Thank you for your cooperacion and have a nice day!

8.8 Tables section 4.1

Table 1. Languages Used by the Mother

	Papiamento	English	Dutch	Spanish	Other	Total
Papiamento	99	5	10	5	-	119
English	-	3	-	1	-	4
Dutch	-	-	13	-	-	13
Spanish	-	-	-	12	-	12
Other (Hindi)	-	-	-	-	1	1
Total # participants	99	8	23	18	1	149
# Monolingual	99	3	13	12	1	128
% Monolingual	62	2	8	7	1	80
# Bilingual	0	5	10	6	-	21
% Bilingual	0	3	6	4		13

Table 3. Languages Used by the Father

	Papiamento	English	Dutch	Spanish	Other	Total
Papiamento	101	5	7	6	-	119
English	-	6	-	-	-	6
Dutch	-	-	13	-	-	13
Spanish	-	-	-	9	-	9
Other (Farsi)	-	-	1	-	-	1
Total # participants	101	11	21	15	-	148
# Monolingual	101	6	13	9	-	129
% Monolingual	65	4	8	6	-	83
# Bilingual	0	5	8	6	-	19
% Bilingual	0	3	5	4	-	12

Table 5. Languages Used by the Caregiver

	Papiamento	English	Dutch	Spanish	Other	Total
Papiamento	35	1	2	5	-	43
English	-	2	-	1	-	3
Dutch	-	-	4	-	-	4
Spanish	-	-	-	9	-	9
Other	-	-	-	-	-	0
Total # participants	35	3	6	15	-	59
# Monolingual	35	2	4	9	-	50
% Monolingual	56	3	6	14	-	79
# Bilingual	0	1	2	6	-	9
% Bilingual	0	2	3	9		14