

Brazilian Portuguese Heritage Speaker Competence: Inflected Infinitives and Role of Language Input

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1. Introduction

When learning a language, there may be grammatical structures more difficult to acquire than others. For example, in Brazilian Portuguese (henceforth BP) there is complex morphosyntax called inflected infinitives, and according to Pires and Rothman (2009) this area is thought to be acquired only when an individual is in his teens. If it is even complex for native speakers, how difficult it would be for heritage speakers who in most cases have a limited input of Portuguese in their daily lives? Would they even recognize inflected infinitives?

According to Place and Hoff (2015), the amount of input influences the development of a child's heritage language. Brazilian heritage speakers (hereafter HS) in Japan have different kinds of input as some of them have gone or go to Japanese schools, while others have experience in Brazilian schools. If variation in input really matters when talking about the competence of heritage speakers in their heritage languages, comparing to native speakers, how low would their scores be when given a grammatical test in Portuguese? Furthermore, can we observe differences in knowledge of Portuguese morphosyntax among the heritage speakers?

In section 2 we provide an outline of inflected infinitives in Portuguese. Section 3 reviews previous studies of the acquisition of inflected infinitives. Section 4 provides details about Brazilian HS living in Japan. Sections 5-7 give the details of the study and the results. Section 8 discusses the competency level of Brazilian HS. Section 9 looks at some of the limitations of the study. Section 10 provides discussion and conclusion.

2. Inflected Infinitives

An inflected infinitive is complex morphosyntax that exists in both Brazilian Portuguese and European Portuguese. In the case of Brazilian Portuguese, recently, it is starting to be being replaced with other grammatical structures such as the complementizer *que* – which corresponds to the relative pronoun 'that' in English. However, the fact that Brazilian adults have knowledge of this morphosyntax is interesting. Pires and Rothman (2009, p. 131) found that "BP children do not command the syntax and semantics of inflected infinitives until the age of 10-12".

There are both inflected and non-inflected infinitives in Portuguese. In case of inflected infinitives, an

infinitive is binded to a subject. In other words, the ending of the verb should correspond to its subject. In Brazilian Portuguese only plural forms have this kind of binding, as you can see in (1) and (2).

- (1) Eu escutei eles *conversarem* sobre você.
I heard them talk-INF-3PPL about you.
- (2) Foi impossível fazer ela *conversar* com ele.
It was impossible to make her talk-INF with him.

In (1), if you look closely at the verb *conversarem*, you can see that it ends with *em*. That is the form a verb takes when it is inflected and has a plural subject. On the other hand, when the subject is *ela*, which means 'she' in English, the verb is not inflected as in (2).

There are some grammatical rules about when there must be inflection or not. The aim of this section is to explain some factors of inflected infinitives. First, inflected infinitives can have null subjects. For instance, in *Eu proíbo eles usarem celular durante a aula* (I forbid them to use-INF-3PPL cellular during the class), the inflected verb *usar* (use) takes 'them' as subject. However, in this case it is possible to drop *eles* and say *Eu proíbo pro usarem celular durante a aula*. Second, both uninflected and inflected infinitives cannot be used with the complementizer *que* – (relative pronoun *that*), as shown in examples (3) and (4).

- (3) Eu espero que eles gostem do presente.
- (4) *Eu espero que eles gostarem do presente.
I hope that they like the present.

Fourth, there can only be inflection in embedded clauses. However, it would be ungrammatical when using it in relative clauses.

- (5) *Elas querem comprarem flores.
They want to buy flowers.
- (6) Foi difícil eles acharem o cachorro.
It was difficult for them to find the dog.
- (7) Não sabemos quem levar a sério.
- (8) *Não sabemos quem levarmos a sério.
We do not know who we should believe in.

The sentence in (5) is just a simple clause consisting of a subject *elas* (feminine form of 'they') and a verb *comprar* (to buy). However, as the verb has *em* as its ending, we can tell that inflection is taking place there. (5) is not an embedded clause, therefore, it is ungrammatical. On the other hand (6) is a clause with a rather complex structure, having an undefined main subject. In this case the verb can be inflected.

In (7) there is *quem*, which corresponds to the English word 'who', making the sentence a relative clause.

The verb *levar* (believe) is not inflected, so it is grammatical. However, if you add the verb-ending *-mos*, as in (8), it would not be acceptable.

Fifth, differences in the context appear when choosing between using an uninflected infinitive or an inflected infinitive. As Rothman (2007, p. 365) mentions in his paper, "...uninflected infinitives must take a sloppy reading under ellipsis, whereas inflected infinitives only correspond to a strict interpretation of the ellipsis site."

- (9) a. O Pedroj aceita PROJ/*k votar todas as propostas hoje e a Ana também.
Ana accepts to vote all the proposals today.
b. O Pedroj aceita prok votarmos todas as propostas hoje e a Ana também.
Ana accepts that we vote all the proposals today.
(example from Pires, 2006, p. 94)

In (9a) the verb *votar* (vote) is uninflected. In this case, it is impossible to have another subject for *votar* other than 'Pedro' and 'Ana'. Therefore, the sentence means that both 'Pedro' and 'Ana' are going to vote all the proposals today. On the other hand, in (9b) the verb *votar* is inflected in the first person plural. Therefore, who is going to 'vote' is not 'Pedro' nor 'Ana', it is the subject of the verb *votar*, which is *nós* 'we'. The subject of *votarmos* is dropped in this sentence.

3. Previous Studies Regarding Inflected Infinitives

Some studies related to heritage speakers were conducted in the past. Research by Pires and Rothman (2009) tested 87 native speakers of BP, their ages being 6 to 15 years old. The aim of the research was to find out at what age Brazilians acquire inflected infinitives. The participants had to provide answers to two types of task; a Morphological Recognition Task and a Context Match Task. The questions did not only contain inflected infinitives, but also had different grammar such as non-inflected infinitives, and present tense as fillers. The results showed big differences in the knowledge of inflected infinitives among the age groups. In the MRT, only the group of 13 to 15 years old teenagers seemed to have a good performance in identifying places where inflected infinitives were being used ungrammatically. In addition, the CMT showed that "in the case of the interpretive properties of non-obligatory control found with inflected infinitives, only the 13-15-year-old and 10-12-year old groups perform in a target-like manner" (Pires & Rothman, 2009, p. 146).

4. Brazilian Portuguese Heritage Speakers in Japan

In some elementary schools, there is a classroom called 'Nihongo Kyoshitsu' (Japanese Classroom) in which children from other countries could have basic lessons in Japanese while other Japanese students have regular classes. This kind of class may help the children not only in their Japanese, but also help them not feel alone, particularly those who just came to Japan.

There are some Brazilian communities in Japan, for instance, one in Ota City, Gunma prefecture. In this

kind of community it may be possible to spend part of your daily life only depending on Portuguese. Supermarkets and different kinds of Brazilian stores are common in this kind of community.

Even having lots of Brazilians around them in their daily lives, it will be necessary for Brazilian children to go out of the community at some point – Brazilian children who live here in Japan (and do not intend to go back to Brazil) need to learn Japanese in order to have a normal life and in some cases, do translation for their parents.

According to Kupisch and Rothman (2016), heritage speakers acquire their heritage language between birth and school entry, and after that, the majority language in the society often becomes the speaker's dominant language, as inevitably, the heritage language input decreases. That is the case of Brazilian children who go to Japanese schools – they may acquire their Portuguese from their parents at home, but Japanese will, in most cases, become their dominant language after they start having larger exposure to Japanese at school.

Sheng, Lu and Kan (2011) say that the continued input of heritage language from the parents of the heritage speaker at home is important, however, it does not always guarantee the individual's development in that language. If the parents of the Portuguese heritage speakers continue to give their children rich input of the heritage language, the child may continue to have a high competence in Portuguese. In fact, one of the mothers – also a teacher at a Brazilian school - interviewed for this research, said during the interview that at her house, she may use some words in Japanese sometimes, however, most of the time, she makes her children speak in Portuguese when they talk to her.

“ ...we mainly speak Portuguese at home (...) as a teacher I realize the benefits of like...speaking or maintaining their heritage language at home. So, that's why... actually, I made a rule at home... so they are able to speak any language at home, except (from) Japanese, but sure sometimes they mix the languages in a sentence...”

(quote from an interview conducted in English)

5. Methodology

5.1. Participants

In this research, 11 people in total were asked to answer a Morphological Recognition Task and they were divided into two groups.

The first group is consisted of 4 people (2 living in Brazil and 2 now in Japan) – adults born and who received school education in Brazil at least till they were 15. This group is going to be referred as the “control group” from now on, as Portuguese is their first language and all of them had lived (or have been living) in a society in which Portuguese is spoken by a majority group for a long term. Their age varies from 30 to 55. My estimation is that as they are adults and have received varied and rich input of Portuguese morphosyntax, they have knowledge of all Portuguese morphosyntax including inflected infinitives.

The second group is made with BP HSs living in Japan between 13 and 27 years old. Some of them have

received education at Brazilian schools in Japan. However, as they are all young and also have lived in Japan (in a society in which Portuguese is suppressed by a stronger language) since they were young, it is safe to say that they have different kinds of language input compared to those of Brazilian monolingual children living in their mother country.

5.2. Task

The original MRT task consisted of 12 questions. The participants were asked to read the main story of each question and the two sentences following the story. It was also required for them to mark X on the sentences that were ungrammatical and write the correction between the sentences, as in the following example.

(1) O Davi foi à casa do Mauro para jantar. Tem muita gente na casa, incluindo a Ana e a Denise. (Davi went to Mauro's house for dinner. There are many people there, including Ana and Denise.)

[X] O Mauro e o Davi está assistindo televisão.

Mauro and Davi are watching TV.

O Mauro e o Davi estão assistindo televisão.

[] A Ana e a Denise estão cozinhando.

Ana and Denise are cooking.

As example (1) shows, the first sentence is ungrammatical. The verb *está*, which means 'is', does not agree with the subject of the sentence. As 'Mauro' and 'Davi' are the subjects here, the verb should be in the third person plural form *estão*. The example above is a question testing the ability of recognizing if there is agreement between the subject and the verb of the sentence. The task also consisted of questions that look at the participants' knowledge about inflected infinitives, as in example (2).

(2) O Felipe ficou muito feliz por que a Ana convidou todo mundo para o aniversário do Mauro. Ontem a Ana, a Denise e o Felipe estavam procurando um presente para o Mauro. (Felipe was really happy because Ana invited everyone to Mauro's birthday. Yesterday, Ana, Denise, and Felipe were looking for a present for Mauro)

O Felipe contou isso mais tarde: (Felipe talked about that later:)

[] Nós tentamos comprar um presente bem legal para o Mauro, mas o

dinheiro não foi suficiente. (We tried to buy a nice present for Mauro, but we didn't have enough money)

[X] Foi impossível nós encontrar um presente barato. (It was impossible for us to find a

cheap present)

Foi impossível nós encontrarmos um presente barato.

As example 2 shows, the second sentence should be an inflected infinitival clause because its subject is undefined. Plus, in inflected infinitive sentences, the verb should not agree with the main subject of the sentence. Therefore, the verb *encontrar* (in English, 'find' should be changed to *encontrarmos* – the inflected infinitive form that has *nós* (we) as the subject.

The original task had 12 questions. However, two questions were unclear because it was difficult to tell what kind of grammatical ability was being tested. The answers from the native speakers also did not coincide as possible answers in neither of the questions. Having these two questions may influence the results strongly, leading to inaccurate data. Accordingly, we decided to exclude them from the data.

To make it easier to compare the results of each participant with the others, points were given for each question; 1 point for sentences marked and fixed correctly, and 0 points for sentences marked wrongly. Giving 1 or 0 points was enough when analyzing the native speakers' answers. However, when analyzing those of the HSs', there was a problem; some of them failed to correct the sentences sometimes, even when recognizing that there was something wrong with the sentences. Giving them full scores would be unfair for the other participants who corrected all the sentences that were ungrammatical and it would not be possible to have an accurate result. Therefore, 0.5 points were given to those who recognized that a sentence was wrong but did not write a correction.

When analyzing the data, the sentences in the questions were divided into four types; grammatical subject-verb agreement sentences, ungrammatical subject-verb agreement sentences, grammatical inflected infinitival clauses, and ungrammatical inflected infinitival clauses.

5.3. *UBiLEC and Background Questionnaire*

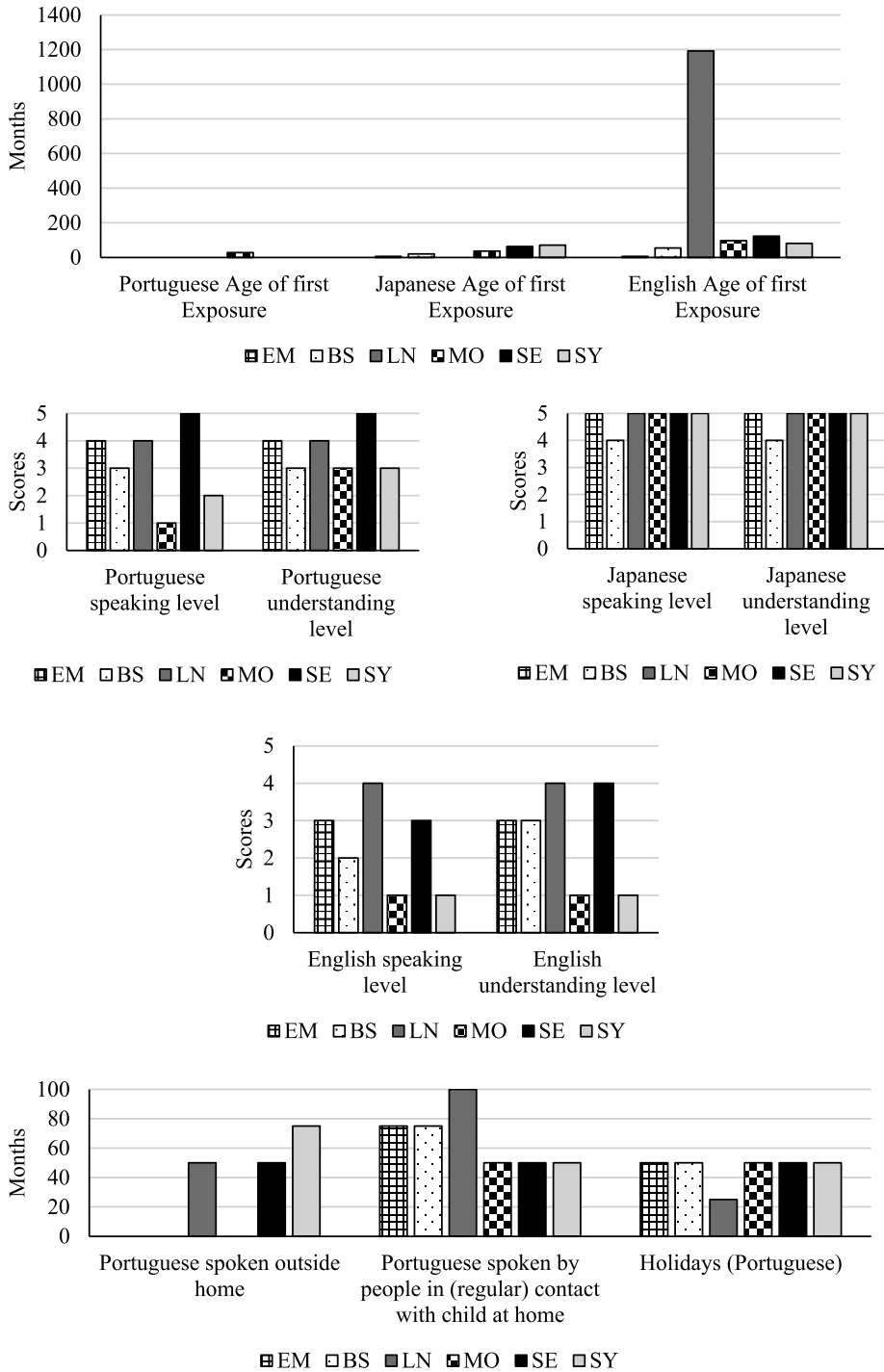
Quantity and quality of language input really influences the performance of a HS. It is impossible to tell if someone is a HS or not only by looking at his or her task answers.

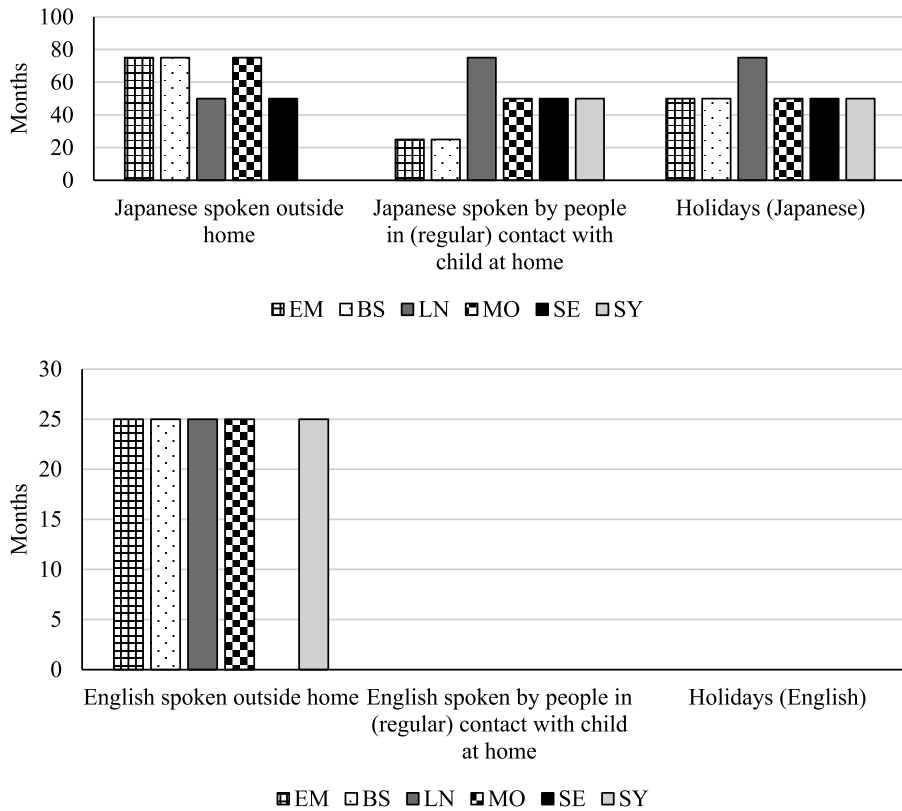
The participants were required to answer a simple questionnaire about their language usage in their every-day lives. Parents were also contacted and asked to give information about their children's language usage in the present and in the past, either by interview or a detailed questionnaire. The information collected was entered into a Microsoft Excel file called Utrecht Bilingual Language Exposure Calculator (UBiLEC), developed specially by Unsworth (2013) and colleagues for analyzing data related to bilingual children. Some of the results from the questionnaire are featured in figures below.

5.4. *Predictions*

Our prediction was that as HSs generally have less and lower quality of input of BP than the control group, they would have lower scores in both subject-verb agreement conditions and inflected infinitival conditions. Having received education and varied language input in Brazil, the control group may have high scores (if not perfect) in total in all the conditions. However, there is a possibility that both groups' scores on the

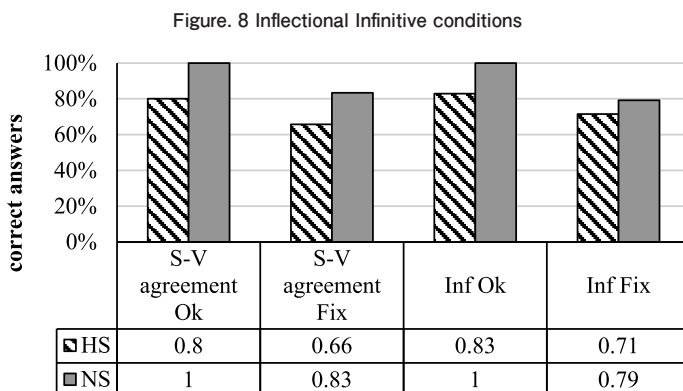
Figures 1-7. Age of first exposure, speaking and understanding levels, and input received





subject-verb agreement condition does not differentiate from each other, as it is not complex grammar. On the other hand, the chance that there is a significant difference between the two groups in the inflected infinitives condition is high. BP has lost inflected infinitives from its morphosyntax with time, however, educated Brazilian adults show knowledge of it. This fact suggests that inflected infinitives “are transmitted via formal education in the standard dialect” (Rothman, 2007, p. 359). As some of the HSs tested have been to Japanese schools, the possibility that they did not have the chance to acquire this morphosyntax is high.

6. Results



A Mann Whitney U test revealed that there is a significant difference between the HSs and the BPNSs in the Inflectional Infinitive Ok condition ($z=-2.285$, $p=.022$). Other Mann Whitney U tests showed no significant differences between the two groups (Inflectional Infinitive Fix: $z=-0.582$, $p>.05$; Subject-Verb agreement Ok: $z=-1.837$, $p>.05$; Subject-Verb agreement Fix: $z=-1.759$, $p>.05$).

The fact that there were no significant differences between the two groups in the subject-verb agreement section is not surprising, as it is not complex grammar. However, it is interesting that their scores on the inflected infinitives Fix conditions were also not remote from each other.

Surprisingly, on three out of the five questions in the inflected infinitives Fix condition, the HS group had a higher average score than the native speakers. All native speakers corrected the other three questions correctly. The two questions in which they had a comparatively low performance may have been the reason of the resemblance in score average of the two groups in the inflected infinitives Fix condition.

Big differences between the two groups in the inflected infinitives Ok condition were indeed observed. Observing the native speakers, they had perfect scores for all the questions on this condition. In the case of the HSs, there was variation in the answers. However, it was most of them who could not recognize the inflected infinitives. For each question in the inflected infinitive Ok condition, just two or one of them did not answer correctly.

The average scores for each section showed no such great differences between the two groups overall. However, for the average score of each participant, there was a great variation among them. While the native speakers' individual scores average ranged from 0.85 to 0.9, the HSs' varied from 0.4 to 0.95. The fact that one of the HSs had a higher score average than all the native speakers is interesting and the variation of competence among the HSs was also surprising.

7. Individual Results

To make it easier to analyze the relevance between heritage speakers' performance and their language background, the subjects were divided into three groups based on their average scores.

First, group 1 consisted of 2 participants (HS1 and HS2). Having 0.6 and 0.4 points on average

respectively, their scores were apart from the other subjects. When compared, some similarities were observed; they received Japanese education since elementary school, speak mostly Japanese with their siblings at home, and according to the data analyzed by the UBiLEC, the quality of the Portuguese input they are exposed to at home is 5 (the highest value).

The second group consisted of 4 participants whose average scores ranged from 0.8 to 0.85 point (HS3, HS5, HS6, and HS7). The interesting fact is that the two participants that once went to a certain international school (HS3 for 3 years and HS5 for 6 years) are in this group. One thing that was shown by this research is that quantity of exposure to the heritage language matters, given the fact that HS5 and HS2 are siblings. While HS5 had 25% of the total language input in Portuguese at the international school in Portuguese when she was 3 to 9 years old and also started going to a Brazilian school now that she is 17, HS2 on the other hand, had never been to such kind of school. They may have the same quality of input at home from their parents, however, when gathering the amount of input from outside home, HS5 has further chances to interact with other people in Portuguese. Another thing confirmed in this research is that continuing input from the parents of a HS is an important fact in maintaining a heritage language. ‘BP Heritage Speakers in Japan’, one of the mothers (HS3’s mother) only lets her children speak in Portuguese with her at home. HS3 scored 0.8 point on average – near to 0.85, which was the score of one of the native speakers. Through the interview, the mother made other attempts to maintain her daughter’s Portuguese, for instance, by taking her back to Brazil during the summer vacation, and sending her to study there for a semester. HS6 also had been to a Brazilian school (since first grade of high school). The quality of Portuguese input from home, school, and extra sources is 4.86. HS7 had been to a Brazilian daycare for 3 years. However, it was when she was from 1 to 4 years old. As she went to a Japanese elementary school since first grade, it is difficult to say that the input at the daycare influenced her task performance. In fact, when analyzing the questionnaire answered by her mother, her parents seemed to have spoken only in Portuguese with her until she was 4 years old. After she started attending Japanese daycare, the percentage of Portuguese at home went down from 100% to 50%. HS7 had less experience of school education in Portuguese, therefore, she is an exception in this group.

The last group had only one member; HS4, who had an even higher score than all the native speakers. His parents were contacted to complete a detailed questionnaire containing the questions for the UBiLEC and not an interview. The researcher could have obtained further information about this participant if there had been a chance to meet his parents. Based on the questionnaire answered by his parents, the HS (25 years old) has spoken Portuguese with his parents at home since childhood and his parents also speak in the heritage language with him in most cases (his father all the time, his mother about 75% in Portuguese). The calculated quality of Portuguese at home is 5, although when other Portuguese input sources such as talking with friends are included, the quality drops to 3.25. About school, HS4 seemed to go to a Japanese elementary and junior high school, switching to a Brazilian school as he proceeded to high school.

8. The Heritage Speakers’ Competence of Inflected Infinitives

One of the interesting facts found is that in all questions regarding inflected infinitives, the heritage

speakers have the same or better average score in recognizing inflection than fixing it. One example is (1);

- (1) A Denise e a Ana gostam de esportes. Elas sempre fazem natação, mas hoje o esporte delas é outro. (Denise and Ana like sports. Normally they practice swimming. However, today they try another sport.)

É muito difícil elas nadar todo dia. (It is difficult for them to swim every day.)

É muito difícil elas nadarem todo dia.

Agora é mais importante a Denise e a Ana correrem mais vezes. (Now, it is important for Denise and Ana to run more.)

While the HSSs' average score for the inflected infinitive Fix condition (the later sentence in the example above) in this question was 0.57, the average of inflection in the Ok condition (the first sentence) was 0.78. The first sentence is ungrammatical because the verb *nadar* (in English, 'swim') is not inflected. Having an undefined subject and being an embedded clause, the use of an inflected infinitive is essential. As the subject of the verb *nadar* is Denise and Ana, the verb ending should be *-em*. Two of the HSSs seemed to accept the first sentence the way it was written. In addition, the other two participants, although identifying some kind of ungrammaticality, did not write a correction under the sentence.

The following question showed interesting results. (2) also tests the participants' knowledge of inflected infinitives. The first sentence is in the inflected infinitive Ok condition, while the later one is in the inflected infinitive Fix condition.

- (2) O Paulo e o Geraldo vão lavar o carro do Mauro, por que essa é a surpresa deles para o aniversário dele. Mas o Mauro chega em casa em meia hora e eles ainda estão assistindo televisão. O pior é que a Ana vai ficar triste sabendo que o carro ainda está sujo, por que eles tinham ditto que iam lavar o carro. (Paulo and Geraldo are going to wash Mauro's car because that is the surprise they decided to make for his birthday. However, Mauro arrives home in 30 minutes and they are still watching TV. The bad thing is that Ana is going to feel sad when she finds that the car is still dirty, because Paulo and Geraldo told her they would wash the car.)

É necessário eles pararem de assistir televisão agora. (It is necessary for them to stop watching TV now.)

A Ana espera eles lavar o carro do Mauro imediatamente. (Ana expects them to wash Mauro's car immediately.)

A Ana espera eles lavarem o carro do Mauro imediatamente.

The first question is an embedded clause with an undefined subject, and as the subject of the verb *parar* 'stop' is *eles* 'they', when the inflection takes place the verb ending has to be *-em*. Therefore, it is a grammatical sentence. On the other hand, the later sentence is ungrammatical because the verb is not inflected even if the subject of the verb is *eles* and the sentence itself is an embedded clause. The main subject of the sentence is Ana, which is a completely different person from *eles*. Therefore, the verb *lavar* should be inflected and changed to *lavarem*.

As in the case of (1), in (2), the scores average of the Fix condition were lower than the one in the Ok condition (0.78). What was even more impressive is that the native speakers' scores average in the Fix condition was 0.25 – half of the HSs' scores. The reason the native speakers' scores were low is because points were only given if the participants had used inflection. In other words, if they rewrote the sentence by using the complementizer *que*, they would get 0 point. That is what happened to the native speakers; 3 out of four used the complementizer *que* instead of an inflected infinitive in this question. On the other hand, all the HSs who get full scores for the Fix condition rewrote the sentence using an inflection (except from HS4, who wrote two corrections for the sentence).

9. Limitations of the study

There are five points that need to be improved in order to have a more certain result. First, the age of the native speakers should have been considered more. Inflected infinitives are not acquired until an individual is in his early teens. If the native speakers were at the same age of the HSs, they might have shown scores not so apart from the HSs' in respect to the inflected infinitives. Second, as it was difficult to find HSs in Japan, their age ended up being a little far apart - the youngest participant being 13, while the eldest is 27 years old. The ideal participants would be in their teens as 3 out of the 7 HSs were already in their twenties. Third, it would be better if the researcher could interview all the participants' mothers to have more accurate data about their language exposure using the UBILEC. Only 4 out of 7 participants had their mothers interviewed. The mothers who were not interviewed were asked to answer a questionnaire. We gave 0.5 point to the participants in places they recognized the grammatical errors but did not write a correction. Among them, one did not write corrections at all (HS2). This leads to the fourth limitation of the study – we decided to give this participant only 0.5 point even in places where they did not mark an X (in places they probably thought the sentence was grammatical). The problem is that it is not possible for us to tell if they really thought the sentences were right, or simply failed to answer the question. The fifth problem was that it was complicated to complete the UBILEC data of the participants above 20 years old. Normally, the UBILEC is used for children until high school age. As two of the participants have also graduated from school and started working, yet another participant is a university student, some cells such as the period each family member spends with the participants at home were difficult to fill in. As there were blanks in the UBILEC document, it was difficult to tell if the calculated length of exposure value was accurately or not.

If the five problems mentioned above had been avoided, the results of the task might have been different.

10. Discussion and Conclusion

Given the fact that all the participants had different Portuguese input throughout the years, this research supports the argument that quantity and kind of input matters when developing a heritage language.

If you look at each individual in the HSs' group there are differences among them, and these differences were the result of the quantity of input received from birth in some cases along with the quality of input. It was also clear that quality of input alone does not influence the HS competence as the participants who had lower scores were both receiving level 5 (native) input at home. Although the levels of input reported by the participants' parents by interview or through a questionnaire are not 100% reliable as it just reflects the parents' subjective opinions, it served as a good criterion when comparing the HSs with each other.

HSs may not have the same level as native speakers when considering their competence in complex morphosyntax. However, they may be closer to native speaker ability, but it depends on their language environment since birth. If an individual wants to keep his or her heritage language, the easiest way would be to shut out all types of input from a language that may possibly take over the heritage language. However, it is nearly impossible to neglect a strong language in a society and live only with the heritage language, especially if the heritage speaker is a child.

Given the fact that one of the mothers interviewed said she knows the importance of maintaining her children's mother tongue, it is clear that it has to be more parents who want the same thing for their children. However, as the children come of school-age and enter Japanese elementary schools (in some cases), some of them start speaking Japanese more than Portuguese, and some parents may not have a clue of how to make their children use their heritage language more even if it is only at their home.

For the HSs in Japan, the need of learning Japanese and the desire of maintaining the heritage language are equally important, and they are always weighing the two options.

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