

Retention of Spanish coda /s/ by speakers of Kashibo-Kakataibo.

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Abstract

Many studies have been conducted on the phonological processes of Spanish in Peru, the majority of which have focused on the varieties spoken in the Andes and in Lima. Few studies have been conducted on the phonological features of Amazonian Spanish. This study presents findings from a descriptive phonetic study of the Spanish produced by the Kashibo-Kakataibo, an indigenous community who live in the Amazon region known as the Ucayali Basin, focusing on syllable- and word-final /s/. It was found that in the majority of cases coda /s/ was retained, which may be influenced by its presence in syllable final position in Kashibo-Kakataibo.

Index Terms: Second language acquisition, language contact, descriptive phonetics, phonological processes, phonotactics.

1. Introduction

1.1. Spanish in Peru

Spanish is spoken by approximately 406 million speakers across 31 different countries around the world [1], [2]. The Spanish which is spoken in Latin America is extremely diverse, with the many varieties often being classified along political, ethnic or geographical divisions [3]. In Peru, the varieties have traditionally been divided into three groups. The ‘lowland’ variety, which is spoken in the capital of Lima, is found along the Pacific Coast and reaches from Panama in Central America to the southern parts of Peru and northern Chile; the ‘highland’ variety, spoken in Cuzco, is found in the Andes zones and reaches from Southwest Columbia into Venezuela, Ecuador, Bolivia, Peru, Northern Argentina and North-Eastern Chile; and the third variety is the Spanish spoken in the Amazon region [3], [4], [5], [6], [7].

1.2. Lima Spanish

The ‘lowland’ variety spoken in Lima appears to have had a great deal of influence from the Andalusian variety spoken in Spain, which is thought to be due to an extended maritime contact [3].

1.2.1. Coda /s/ in Lima Spanish

The aspiration (or even elision) of underlying Spanish /s/ in syllable- and word-final position is recognised as one of the more salient variables of the Lima variety; with /s/ only being retained before pauses and word-initial vowels [3], [7], [8]. This often results in /s/ surfacing as [h] in the majority of speakers, or being further reduced to \emptyset in the speech of more innovative speakers (such as the younger generation) [3], [8].

1.3. Andean Spanish

The ‘highland’ variety can be described as one which has evolved from language contact. In the Andean region, Quechua (along with Aymara, Chipaya, Jaqaru and Callawalla) is still spoken today, with the majority of these speakers also speaking Spanish [4]. Therefore, this variety is a result of the daily contact between Spanish speaking monolinguals and Spanish-Quechua speaking bilinguals which has occurred during the last century [4].

1.3.1. Coda /s/ in Andean Spanish

In Andean Spanish, syllable- and word-final /s/ tends to be retained, and at the vernacular level it is almost never lenited to [h]; however elision may occur in some cases [3], [4], [9]. There is also frequent voicing of prevocalic /s/ in word final position [4]. It is worth noting that /s/ is permissible in coda position of Quechua [10], which may explain its maintenance in this variety.

1.4. Amazonian Spanish

Although many studies have been conducted on the phonology of Spanish spoken by bilingual speakers whose first language is Quechua, to date very few studies have been conducted on the phonological processes of Amazonian Spanish. Spanish is not the native language for the majority of individuals who reside in the Amazonian region of Peru, many of whom speak indigenous languages [3]. This area is also one which has a large number of people who come from other regions of Peru, which may result in some interesting features arising in the speech of this population [3].

1.4.1. Coda /s/ in Amazonian Spanish

It has been proposed that syllable- and word-final /s/ is weakened and often elided in Amazonian Spanish, often without passing through the aspiration stage [3].

1.5. Kashibo-Kakataibo

Linguistic diversity in South America is quite extensive, with around 350 indigenous languages being spoken across 118 distinct genetic groups [11]. An area of the Upper Amazon known as the Ucayali Basin, found in the neighbouring regions of Peru, Brazil and Bolivia, is where the Panoan languages are spoken [12], [13]. The group of languages known as Kashibo (also referred to as Cashibo, Casibo, Casivo and Cashivo) belong to the Pano language family, and are spoken on the Aguaytía, Pachitea, Pisqui, San Alejandro and Sungaroyaco Rivers in Peru [11], [14], [15], [16]. The Kashibo people however, prefer to call themselves *Kakataibo*

[16]; therefore in line with what has become standard practice within modern Pano linguistics, I will refer to this language group and its speakers as *Kashibo-Kakataibo*.

1.5.1. The phonological syllable in Kashibo-Kakataibo

It has been proposed that the phonological syllable in Kashibo-Kakataibo is (C)V(C), with other phonetic representations surfacing due to certain morphophonemic processes [15]. There are only four consonants which are permissible segments in coda position, these being /n, s, ʂ and ʃ/ [16].

1.5.2. Bilingualism and second language acquisition

As is the case with many indigenous communities, the Kashibo-Kakataibo have had to learn the majority language of another speech community. For most this occurs once they enter the education system, with little opportunity to become literate in their native language [16], [17]. Therefore, members of this particular speech community would be classified as early-sequential bilingual speakers of Kashibo-Kakataibo and Spanish.

Both the Speech Learning Model (SLM) [18], [19] and the Perceptual Assimilation Model (PAM) [20] propose that first (L1) and second (L2) language subsystems co-exist in a common phonological space, therefore influencing each other. Furthermore, they predict that when a second language speech sound is perceived as being similar to a first language speech category these categories will assimilate, leading to a merged L1 and L2 phonological category.

2. Method

2.1. Corpus

Participants for this study consisted of four native Kashibo-Kakataibo speakers, three male and one female, all from the village of Yamino in Peru. All participants acquired Spanish as a second language, which is the majority language of Peru and that of the education system.

Two video recordings, each containing approximately twenty minutes of data, were used for the purpose of this study. These videos were recorded by Roberto Zariquiey Biondi whilst collecting data for his PhD dissertation on Kashibo-Kakataibo grammar [16]. They were then kindly made available for analysis in this project. The first ten minutes of data were recorded with speakers 1 and 2 addressing an audience inside a hall at the Catholic University in Lima; the remaining data was recorded outside (which included all 4 participants), either in Lima or in the village community. The recordings contain speech which was either non-elicited (such as the history of the Kakataibo, or why the participants were in Lima), or in conversation with the interviewer.

2.2. Analysis

The above video files were converted to WAV audio files using VLC Player. Orthographic transcriptions, English gloss and free translations were completed using the ELAN annotation tool. Once completed, these transcriptions were then exported to a TextGrid file. These files were then imported to PRAAT for further analysis using the TextGrid function. The spectrograms produced in PRAAT were not particularly clear, due to the quality of the recordings having

been conducted either in a hall or outside. Due to the recording environment, there was a high amount of background noise evident in the spectrograms. This posed a problem with the analysis; therefore the majority has been conducted by ear, with the spectrograms providing a rough guide.

As the samples provided in the recordings were of continuous speech, the annotations on the phonemic tier have been completed on a word by word basis. The labelling of phones in PRAAT has been completed phonemically.

The data were analysed for a comparison with a number of phonemic processes which have previously been documented for the Lima Spanish variety, however only those relating to coda /s/ will be presented in this paper. This process may be described as debuccalisation or deletion of syllable and word final /s/, and represented as /s/ > [h] or ø / _#; _##.

3. Results

As a whole, speakers of Kashibo-Kakataibo tended to retain the phoneme /s/ in coda position in the majority of surface representations. Table 1 below gives a summary of the overall findings:

Total /s/ _#; _##	955	
Surface as [s]	755	79.1%
Surface as [h]	51	5.4%
Surface as [z]	33	3.5%
Surface as ø	109	11.4%
Disregarded	7	

Table 1. Syllable- and word-final /s/.

The majority of coda /s/ surfaced as the [s] phone in this sample. Only 5.4% were debuccalised and 11.4% were elided completely. There were also 33 instances where the /s/ phoneme surfaced as [z]. The majority of these tokens occurred post-vocally with a voiced consonant following. [z] would be the expected allophone in this environment in Spanish [21]. Finally, 7 tokens were discarded due to the amount of background noise, which made it difficult to determine their phonetic properties.

Each speaker produced different percentages in their output, which will be presented in brief here. Table 2 gives the total number of coda /s/ for speaker 1, who was an older male:

Total /s/ _#; _##	292	
Surface as [s]	258	88.4%
Surface as [h]	6	2%
Surface as [z]	6	2%
Surface as ø	20	6.8%
Disregarded	2	

Table 2. Syllable- and word-final /s/, *speaker 1, male*.

This speaker had the highest retention of coda /s/ of the four participants analysed, with 88.4% retention. When weakening occurred, this speaker produced more elided tokens than [h].

Table 3 provides a summary of results for speaker 2, a middle aged male:

Total /s/ _#, _##	232	
Surface as [s]	185	79.8%
Surface as [h]	12	5.2%
Surface as [z]	6	2.6%
Surface as ø	27	11.6%
Disregarded	2	

Table 3. Syllable- and word-final /s/, speaker 2, male.

This speaker was the nephew of speaker 1, with his results showing very similar values of retaining coda /s/ as the group totals in all categories.

Table 4 below shows the results for speaker 3, a middle aged female:

Total /s/ _#, _##	327	
Surface as [s]	254	77.7%
Surface as [h]	26	8%
Surface as [z]	9	2.8%
Surface as ø	37	11.3%
Disregarded	1	

Table 4. Syllable- and word-final /s/, speaker 3, female.

This female speaker was of a similar age to speaker 2 above. During her interview, she spoke of having lived in Lima for two years as an older teenager. Her results do not differ significantly from the group results however.

Finally, Table 5 presents the findings from speaker 4, another older male:

Total /s/ _#, _##	104	
Surface as [s]	58	55.8%
Surface as [h]	7	6.7%
Surface as [z]	12	11.5%
Surface as ø	25	24%
Disregarded	2	

Table 4. Syllable- and word-final /s/, speaker 4, male.

Speaker 4 was of a similar age to speaker 1, yet had the lowest coda /s/ retention of the group, with only 55.8%. This speaker also produced the highest number of the voiced [z] allophone, which lowered the percentage substantially. Still, this speaker had the highest percentage of deleted segments. This was an unexpected finding, as this indicates a great deal of variation between two speakers of the same generation and gender. Unfortunately metadata were not available, which may have helped determine whether there were any socio-linguistic variables which might have explained this difference.

Figures 1, 2, 3 and 4 below demonstrate some examples of the behaviour of /s/ in coda position:

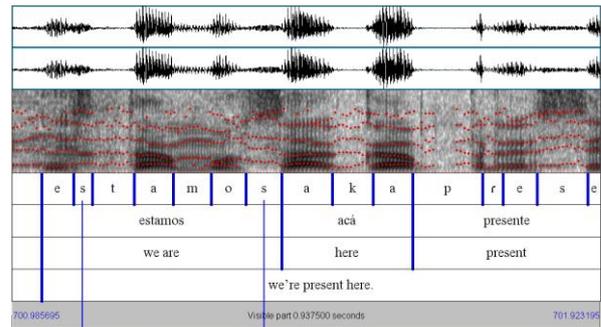


Figure 1: Alveolar fricative [s] in both syllable- and word-final position.

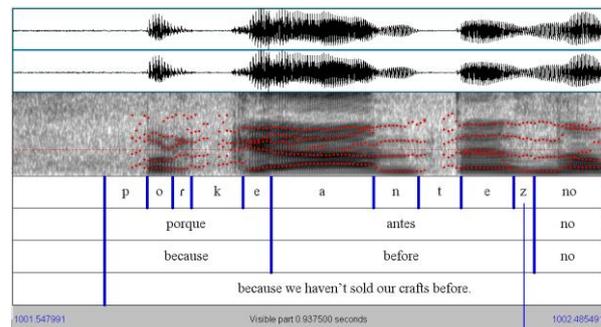


Figure 2: Alveolar fricative [z] in post-vocalic and pre-voiced consonantal position.

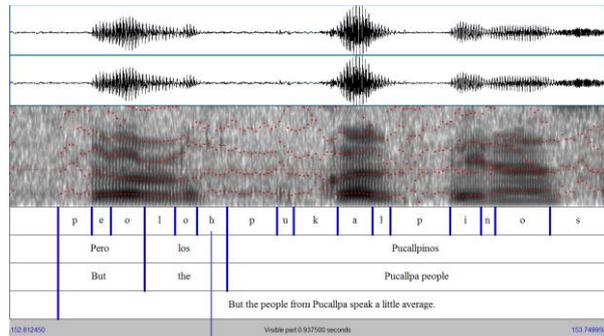


Figure 3: Alveolar fricative /s/ lenited to [h] in syllable-final position.

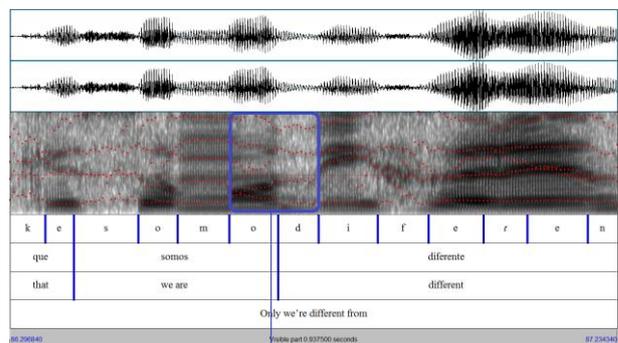


Figure 4: Alveolar fricative /s/ deleted in syllable-final position.

4. Conclusions

The phoneme /s/ was already a part of the Kashibo-Kakataibo inventory; therefore there has been successful acquisition of this Spanish phoneme by members of this speech community. This is in line with predictions made by both SLM and PAM [18], [19], [20], that sounds which are perceived as being similar to a native phoneme are assimilated to that category.

When analysing the process of lenition or elision of /s/ to [h] or \emptyset in coda position, as occurs in the Lima variety, speakers of Kashibo-Kakataibo tend to retain coda /s/ in their speech. Whilst these processes did occur occasionally in the speech of the participants of this study, and at varying rates between participants, they did not surface as often as may have been expected in the speech of a native Lima speaker. This tendency does compare with Andean Spanish to some degree, which also tends to retain coda /s/ in most cases [3], [4], [9].

These results however, do not support the description of the behaviour of coda /s/ which has been mentioned in previous literature describing Amazonian Spanish. It was proposed that this variety has the tendency to weaken or elide syllable- and word-final /s/ [3]. As this phoneme is one of the only permissible speech sounds in coda position of Kashibo-Kakataibo [16], this may have had an influence in the acquisition of the weakening rule by this community. Another possibility which may help explain this occurrence is the number of people from other regions of Peru living in the Amazon region [3]. It is possible that there are a larger number of speakers of the Andean (highland) variety who live in this area than the Lima (lowland) variety, which may have an effect on the Amazonian variety.

To date, very few phonological studies of Amazonian Spanish have been conducted; therefore the literature available for descriptions of this variety is limited. Further research needs to be conducted on Amazonian Spanish in Peru, in order to determine whether weakening of coda /s/ is in fact a salient feature of this variety. This may also allow us to determine whether the behaviour demonstrated by the Kashibo-Kakataibo is indicative of a variety produced by a second language speech community, or whether it is in fact a feature of Amazonian Spanish. Given the linguistic diversity of this region, it might be reasonable to expect variation in phonological processes.

Results of this study have been limited by the sample size, as only four participants were analysed. Whilst there were a sufficient number of tokens available for analysis across the 40 minutes of data which were provided, a larger number of participants with a smaller amount of speech per participant may have provided a better indication as to whether the processes which surfaced in the speech of the four participants were indicative of the larger speech community. The inclusion of a control group of native Lima Spanish speakers in the process would have been useful to draw comparisons in the processes which were noted in the speech of the Kashibo-Kakataibo participants, and would have been an improvement on the current methodology. And finally, recordings which were made in a controlled environment, containing minimal background noise would have improved the accuracy of the phonetic analysis of this study.

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