

/s/ Lenition in Child-Directed Speech of Chilean Mothers

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Introduction

- Many studies have looked at syllable-final /s/ lenition in Spanish-speaking adults (Cepeda 1995, File-Muriel & Brown 2010, Lipski 1985). However, almost nobody, as far as we know, has examined /s/ lenition in child-directed.
- Miller (2007) indicates that 4-5 year old Chilean children produce /s/ lenition in the same linguistic contexts as adults (adult-directed speech) but do not appear to be sensitive to extra-linguistic constraints, like speech style.
- Child-directed speech has been shown to differ from adult-directed speech in that it involved a much slower speech rate, is more clearly enunciated and has a greater range of frequencies (pitch).
- File-Muriel & Brown (2010) correlated slower speech rate with more frequent production of [s].
- Research Questions: (1) Do Chilean mothers produce more [s] when speaking to their children? (2) Does speech style affect mother's production of child-directed speech?

Study on /s/ Lenition

Method of Data Collection:

Procedure: Data was collected from one mother and her child in Punta Arenas, Chile, in a working-class neighborhood. The participants were placed in a playroom (Miller and Schmitt Corpus) by themselves filled with strategically-chosen toys such as crafts, puppets, dolls, pretend food, and animal figures that elicited final /s/ pronunciation at the end of syllables. The conversation between the mother and child was recorded and later the data was coded to specify under what circumstances the mother aspirated syllable final /s/.

Materials: Marantz PMD 660 Recorder, Shure Microphone attached to caps worn by the children

Method of Data Analysis:

Coding: Our preliminary data consists of 108 words containing syllable-final /s/. These words were chosen by forwarding past the first 15 minutes of the recording and then choosing the first 108 words. Four coders listened by ear to determine whether the mother pronounced /s/ as an alveolar fricative [s], an aspiration [h], or an omission 0. The same data was coded by all four research assistants and PRAAT was used to segment the word of interest.

Examples of final /s/ at the end of a syllable:

-jugamos (morphological /s/)

-atrás (lexical /s/)

Out of the 108 tokens chosen, coders disagreed on 32%. Most disagreements regarded omission v. aspiration. These disagreements were fixed by having two coders listen to each token together.

In order to examine the contexts that constrain /s/ lenition, these 108 tokens were then coded for:

1)Speech style— mother was either speaking casually, teaching, scolding, or using a play voice (pretend voice like when pretending to be a puppet) with her child

2)Part of speech—noun, verb, adjective, determiner, or preposition

3)Plural v. Lexical /s/—/s/ was a nominal plural marker or lexical /s/ (2.sg, etc. was removed from this part of the analysis.

4)Phonological environment—affricate, fricative, lateral, nasal, vibrant, stop, or vowel.

Results

Our preliminary results show that overall syllable-final /s/ was pronounced as [s] 53% of the time, [h] 24% of the time, and omitted 23% of the time.

1) Style: [s] was more frequent when mother used a play voice. Omission was more frequent when the mother was scolding her child. This seems consistent with File-Muriel as play voice (pretending to be a puppet character) is slower than when scolding a child.

C:Casual
T:Teaching
S: Scolding
P: Play voice

Style	H	0	S
C	.20	.22	.57
T	.25	.28	.47
P	.18	.00	.81
S	.33	.50	.16
C/T	.50	.00	.50
S/T	.40	.20	.40

2) Part of Speech: [s] was most frequent when it was a plural marker on the determiner (article) and less frequent on nouns and adjectives. This patterns with much previous work on /s/ lenition (see Miller 2007 for review).

A: Adjective/adverb
D: Determiner
N: Noun
D: Determiner
V: Verb

Part of Speech	H	0	S
A	.42	.14	.43
D	.13	.00	.87
N	.25	.17	.58
P	.50	.25	.25
V	.19	.31	.50

3) Nominal Plural Marker v. Lexical /s/: [s] appears to be more frequently produced when it was lexical /s/ when it is morphological /-s/. This is not consistent with past work on Chilean Spanish (Cepeda 1995, Miller 2007).
Ex: dibujos (plural marker) versus esquina (no plural marker)
Plural: Present plural marker
Lexical: Lexical

Plural Markers

	H	0	S
Y	.38	.16	.46
N	.20	.13	.66
X	.20	.26	.36

4) Phonological Environment: [s] is much more frequent when followed by a pause. This is consistent with past work on Chilean Spanish (Cepeda 1995). #: Pause

A: Affricate
F: Fricative
L: Lateral
N: Nasal
R: Vibrant
S: Stop
V: Vowel

Phonological Environment	H	0	S
#	.25	.11	.72
A	.00	1.0	.00
F	.20	.40	.60
L	.00	1.0	.00
N	.40	.20	.40
R	1.0	.00	.00
S	.20	.15	.65
V	.24	.38	.38

Future Directions

•Spring 2012: Code by ear and eye using PRAAT software. We are extracting /s/ segments and measuring them acoustically.

•We will use Dr. Miller's PRAAT script to measure /s/ duration, COG, and vowel+/s/ segment.

•Code more data so that we can further examine the effect of Speech Style on mother's production of /s/ to her children.

•Melissa Magro will be going to Granada, Spain Summer 2012 as a PIRE fellow to collect data from children and adults for comparative work between Chilean Spanish and Peninsular Spanish.