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# CHILDREN'S USE OF SPANISH TAPS: A NATURALISTIC STUDY WITH MONOLINGUAL COSTA RICAN CHILDREN AGES 3;0 TO 5;6

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# CHILDREN'S USE OF SPANISH TAPS: A NATURALISTIC STUDY WITH MONOLINGUAL COSTA RICAN CHILDREN AGES 3;0 TO 5;6

## EL USO DE LA VIBRANTE SIMPLE O ERE EN EL LENGUAJE INFANTIL: UN ESTUDIO CON NIÑOS Y NIÑAS MONOLINGUES DEL ESPAÑOL COSTARRICENSE CON EDADES ENTRE LOS 3 Y LOS 5;6

*Luz Marina Vásquez Carranza*

**RESUMEN**

Este estudio reporta las tendencias en el uso de la vibrante simple en 15 niños(as) monolingües de habla hispana costarricenses con edades entre los 3;0 y los 5;6. Los datos obtenidos por medio de grabaciones de audio del lenguaje natural de estos niños(as) produjeron 1080 palabras claves. El 80% de ellas fueron usos correctos de la vibrante simple, mientras que el 20% restante se trató de omisiones (14%) o sustituciones [l], [n], [t], [d], [j], [tʃ], [ð] o por una rótica asibilada no vibrante. Un hallazgo principal de esta investigación se refiere a la omisión de la vibrante simple en verbos infinitivos seguidos de uno o más pronombres enclíticos. Este tipo de omisión es interesante en cuanto parece estar directamente relacionado con la complejidad de los pronombres enclíticos, ya que los(as) niños(as) no siempre omiten la vibrante simple en contextos similares (/Cr/). Aunque este patrón ha sido reportado con respecto al español de los adultos costarricenses, este nunca ha sido reportado en el habla infantil.
**Palabras clave:** róticas del español, la vibrante simple del español, desarrollo del lenguaje infantil, patrones en la adquisición del lenguaje.

**ABSTRACT**

This study reports on the trends in children's use of taps by 15 Costa Rican Spanish-speaking monolingual children between ages 3;0 and 5;6. Data were obtained through audio-recordings of the children's naturalistic speech, yielding 1080 target-words. 80% of the taps were correct, but the remaining 20% evidenced either omissions of the tap (14%) or substitution of the tap for [l], [n], [t], [d], [j], [tʃ], [ð], or for a voiceless assibilated rhotic. A main finding in this study was the consistent omission of the tap in infinitive verb forms before a consonant initial enclitic pronoun. This omission type is interesting in that it appears to be directly related to the complexity involved in nominal enclitics, as children do not always omit the tap in similar phonetic contexts (i.e., /Cr/ clusters). Although this last pattern has been reported for adult Costa Rican Spanish, it has never been reported in child speech.
**Key words:** Spanish rhotics, the Spanish tap, child language development, patterns in acquisition.

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## 1. Introduction

Spanish rhotics have been studied in detail, and it has been shown that they involve complex gesture that generally results in late acquisition (e.g., Gómez-Fernández, 2004; Jiménez, 1987; Vásquez-Carranza, 2006); one such rhotic sound is the Spanish tap, [ɾ]. Most likely as a result of articulatory complexity, taps reportedly evidence assimilation processes across different adult Spanish dialects (e.g., Bradley & Schmeiser, 2003; Umaña-Aguilar, 1981), and some of these patterns are also found in child speech (e.g., Gómez-Fernández, 2004).

This study was designed to observe the trends in children's use of taps by a group of 15 Costa Rican Spanish-speaking monolingual children between ages 3;0 and 5;6. The data were obtained through audio-recordings of the children's naturalistic interactions with peers and with the main researcher.

One thousand and eighty (1080) examples of words requiring taps in all possible phonetic contexts were analyzed, and the majority of the examples accurately contained taps. Twenty per cent (20%) of the target words, however, evidenced either omissions of taps (14%) or some sort of substitution, including substitutions for [l], [n], [t], [d], [j], [tʃ], [ð], as well as for a voiceless assibilated rhotic. The first substitution has commonly been reported for child Spanish, whereas the other substitutions were found in only a few words. An interesting example of omission, one which has not previously been reported for child speech, consisted of omissions of the tap in infinitive verb forms before a consonant initial enclitic pronoun. This omission type is interesting in that it appears to be directly related to the complexity involved in nominal enclitics.

## 2. The tap among Spanish rhotics

Spanish is one of the few languages in the world that has two rhotics, a trill and a tap; they overlap only intervocalically, as elsewhere they are either neutralized or in free variation (Bradley, 2005; Proctor, 2009). Specifically, the trill emerges in onset position word-initially (e.g., *rey* 'king'), in onset position word-medially after the consonants [l], [n], and [s] (e.g., *al**r**ededor* 'around'; *en**r**edo* 'mess'; *Is**r**ael*), and intervocalically, spelled as -rr- (e.g., *a**rr**oz* 'rice'). The tap, in contrast, is found in word-medial pre-consonantal codas –i.e., part of the syllable which comes after the nucleus– (e.g., *ca**r**ta* 'letter'), in word-final codas (e.g., *come**r*** 'to eat' / *color*), in onset /Cr/clusters (e.g., ***tr**es* 'three', ***dr**ástico* 'drastic'), and inter-vocalically (e.g., *a**r**os* 'rings').

To articulate a trill requires very precise complex gesture, as it consists of a series of brief occlusions of the tongue tip against the alveolar ridge while maintaining constant vibration of the vocal folds (Ladefoged, 2001). In contrast, the tap is articulated by rising the tongue up to touch the alveolar ridge and then lowering it back to the bottom of the mouth; it is a sound that has extra short duration and which is phonetically described as a voiced alveolar tap (Ladefoged, 2001; Ladefoged & Madieson, 1996; Recasens, 1991).

## 3. Cross-dialectal Phonetic realizations of the Spanish tap

The Spanish tap undergoes diverse phonetic realizations across various dialects. First, in the Spanish spoken in some regions of Cuba (Santiago), Panama, Dominican Republic, and Puerto Rico, the tap is lateralized in coda position, in words such as *ver**d**ad* [ve**l**.da] and *compra**r*** [kom.pra**l**] (López-Morales, 1992; Willis, 2006).

In some Spanish dialects in Colombia and the Canary Islands as well as in the Cibao region in the Dominican Republic, coda liquids tend to vocalize in pre-consonantal position as well as word-finally in words with final stress. In such contexts, the rhotic is phonetically realized as a high front vowel or as a palatal glide, as in *cue**r**po* [kwe**j**.po] and *muje**r*** [mu.he**j**] (Proctor, 2009).

In Standard Spanish, there is a vowel segment that intervenes in complex /Cr/ onsets (i.e., portion of a syllable preceding the nucleus) and which may have variable duration, as in ***pr**onto* [pᵊɾ] 'soon' and ***fr**esco* [fᵊɾ] 'fresh'; this intervening segment is often referred to as a *svarabhakti* vowel (Bradley & Schmeiser, 2003). In contrast, in casual speech in Peninsular Spanish as well as in some contemporary American Spanish dialects, these two authors report coarticulation of complex onset clusters; that is, /Cr/ clusters are heavily overlapped and such coarticulation results in friction of the rhotic (the intervening vowel disappears). The rhotic hence tends to devoice after voiceless consonants such as [k], and dental [t̪] and [t̪ʰ] assimilate regressively to the rhotic, resulting in [t̪ɹ̥], an alveolar quasi-affricate sound. Bradley & Schmeiser (2002) point out that whereas in casual speech in Peninsular and Peruvian Spanish coarticulation affects any /Cr/ cluster, in other Latin American dialects it is restricted to consonant clusters in which the first consonant is a coronal non-continuant (i.e., [t] or [d]). Bradley and Schmeiser add that the tap becomes an approximant in *tr-* onset clusters, as in ***tr**es* ('three'), resulting in a rhotic similar to that found in English words such as ***dr**ess* and ***tr**ain,* and which is not typical of Spanish. Quilis (1999) also identifies an affricated realization of the tap in [tɾ] onsets in great part of Argentina, in Bolivia, some areas of the United States, in Guatemala, and in some parts of Spain, namely along the Ebro River. He adds that this affrication phenomenon also applies to the [dɾ] sequence, which is articulated as a voiced post-alveolar affricated segment. Stockwell & Bowen (1965) report this coarticulation phenomenon for parts of Chile and Perú.

On the other hand, Bradley (2005) reports that in Standard Spanish /ɾC/ clusters where the rhotic appears in coda position there is also evidence of a svarabhakti vowel segment between the rhotic and the following consonant segment, but in casual speech in Highland Ecuador, this intervening vowel segment often tends to disappear, and an assibilated [ř] surfaces instead before consonants that have the same voicing value (e.g., *ve**rd**e* [eř.ðe] 'green'; *ca**rn**e* [kař.ne] 'meat'). Such an assibilated segment devoices before voiceless consonants, whereas in any other context, [ɾ] surfaces instead.

Coarticulation in /tɾ, dɾ/ clusters is also reported for Costa Rican Spanish. For instance, Umaña-Aguilar (1981) argues that after the voiceless alveolar stop [t], the tap receives an alveolar articulation very similar to a post alveolar voiceless affricate; this rhotic is said to be retroflex and to closely resemble the American English /tɾ/. The same phenomenon is reported in Vásquez-Carranza (2006) after the coronal voiceless stop phoneme [t], where /ɾ/ devoices and assibilates both word-initially and word-medially, as in *a**tr**ás* /atr̝̊as/ 'behind' and ***tr**ato* / tr̝̊ato/ 'deal'. Vásquez-Carranza (2006) reports the same assibilation process for word-medial complex *dr* onset clusters after a voiced sonorant coronal (*l* or *n*), as in *ven**dr**á* ('he/she will come') and *sal**dr**é* ('I will go out').

In syllable-final position, the tap is also said to assibilate in Costa Rican Spanish. Umaña-Aguilar (1981) describes a tap which is phonetically realized as an assibilated retroflex in syllable-final position, especially phrase-finally. Sánchez-Corrales (1986) and Vásquez-Carranza (2006) also argue for this pattern in Costa Rican Spanish. A word-final

assibilated rhotic is also reported for Highland Ecuador in Bradley (2001). He describes an assibilated [ř] word-finally in pre-vocalic position, as in ***ir a****hora* 'to go now', before a consonant, as in *mayo**r g**usto* 'greatest pleasure', and before a phrase boundary, as in *la flo**r*** 'the flower'. Similarly, in a dialect spoken in Mexico City, Harris (1969) reports a voiceless fricative, which is different from the alveolar in that it is retracted, in word-final contexts in words such as *toma**r*** 'to take/to drink'.

Calvo-Shadid & Portilla-Chaves (1998) describe three assibilated retroflex variations of the rhotics found in the formal speech of four female informants in the capital area of Costa Rica. In particular, they identified a voiced, retroflex, approximant [ɻ], a voiced retroflex fricative [ʐ], and a voiced retroflex tap. Inter-vocalically, 4% of the allophones of the tap were described as retroflex, and the retroflex allophones were found mainly in pre-consonant position. Their study did not report evidence of a retroflex segment in consonant clusters, as do Umaña-Aguilar (1981) and Vásquez-Carranza (2006).

Finally, according to Penny (1969; cited in Bradley, 2005), in Northern Peninsular Spanish (i.e., Cantabrian Spanish), the tap that appears in infinitive verbs is lost before a consonant-initial clitic (e.g., *la/lo/las/se/me*), as well as before definite articles heading a following noun phrase (e.g., *come**r los** huevos* 'eat the eggs'). Bradley (1998) reports the same phenomenon for Ecuadorian Spanish. In the Spanish spoken throughout the Central Valley in Costa Rica, deletion of the final rhotic in infinite verbs before a nominal clitic has also been reported. Specifically, Vásquez-Carranza (2006) states that the tap tends to be deleted in /rC/ clusters when in coda position followed by consonant-initial clitic, as in *dá**rmelo*** 'give.me.it' *comprá**rselo*** 'buy.yourself.it'; deletion of the rhotic before a definite article, as reported for Northern Peninsular Spanish and for Ecuadorian Spanish, has not been reported for Costa Rican Spanish.

Overall, in Spanish the tap has undergone various phonetic processes, resulting in the following phonetic realizations across various Spanish dialects and depending on specific phonetic contexts:

a. tap lateralization in coda position
b. vocalization of taps in pre-consonantal position and word-finally in words with final stress
c. insertion of a vowel-like segment between the consonant and the rhotic in /Cr/ onset clusters (a svarabhatki segment)
d. coarticulation in complex Cr clusters, mostly /tɾ/ and /dɾ/
e. insertion of an intervening svarabhakti vowel in /rC/ clusters in coda position
f. assibilation of taps before consonants in /rC/ cluster in coda position before consonants with the same voicing value
g. assibilation of syllable-final taps, specially phrase-finally
h. devoicing of word-final taps
i. deletion of taps in coda position before a definite article heading a following noun phrase
j. deletion of taps in coda position preceding a pronominal clitic pronoun that starts with a consonant

This tendency of the tap to undergo various assimilation processes in adult Spanish suggests that Spanish-speaking monolingual children might replicate similar patterns in their acquisition of the tap. Hence, it is crucial to review the literature on the acquisition of taps by Spanish-speaking monolingual children, in particular, that related to dialectal variation.

### 3.1. Acquisition of Spanish taps

Although few studies to date have reported on dialect-specific patterns with regards to the acquisition of Spanish rhotics (Ciccia-Gabillo, Montezuma del Castillo, Elías-Ulloa, Gabillo-Ciccia, Echenique-Herrera, Raffo-Castro & Seminario-Olórtigue, 2006; Gómez- Fernández, 2004), several studies have demonstrated that rhotics are late acquisition, though by age 4;0 approximately, the majority of Spanish-speaking monolinguals reportedly produce the tap correctly (Acevedo, 1993; Bosch-Galcerán, 1983; Jiménez, 1987; Mason, Smith & Hinshaw, 1976).

Before full mastery of the tap is achieved, however, some authors identify a tendency to substitute it for a central lateral approximant [l], as liquids are normally acquired before rhotics (by Fernández-Aragón, Gutiérrez-Coto, Morgan-Mora, Romero-Zúñiga & Zadwaski-Wisniewski, 1994; Gómez-Fernández, 2004; Moralejo, 2007; Yavas, 2004, in Proctor, 2009). Several authors additionally observe simplifications of the tap in consonant clusters (e.g., Anderson & Smith, 1987; Bosch-Galcerán, 1983; Fernández-Aragón et *ál*., 1994; Gildersleeve-Newman, 2008; Goldstein & Iglesias, 1996; Gómez-Fernández, 2004). Fernández-Aragón *et ál*. report substitutions of the tap for [s], [n] and [l] in word-final contexts in the speech by a group of Costa Rican children ages 5;6 to 6;6, all diagnosed with speech problems. Syllable-initially, they reported substitutions with [l] as well as frequent omissions (in 14% of the overall productions), whereas inter-vocalically, they also found substitutions with [l]. In /Cr/ clusters, Fernández-Aragón reported substitutions as well as omissions (e.g., *grada* → *gada*/*glada* 'step').

Regarding dialect-specific patterns, Ciccia-Gabillo *et ál*. (2006) describe what they refer to as semi-consonants ([*semiconsonantación*]) used to substitute for rhotics in child Peruvian Spanish; specifically, they report that instead of the trill and the tap, children normally produce either /j/ or /j^/. These researchers additionally describe the reduction of /tr/ clusters to a consonant followed by a vowel-like segment /tj/ in that Spanish dialect.

Similarly, Gómez-Fernández (2004) reports on naturalistic data by a group of children between ages 1 and 3 in Seville. He found that, between ages 1 and 1;5, the tap was omitted frequently, although sometimes it was substituted by [l], [ð], and [β]; between ages 1;5 and 2, /r/ was omitted in /Cr/ clusters as well as word-finally, whereas between ages 2;0 and 2;5, it was mostly correct, except for /Cr/ clusters as well as in final position where it tended to be omitted. Between ages 2;5 and 3, the tap was generally used correctly, although sporadic omissions and substitutions were found, mainly in /Cr/ clusters; such omissions were child-specific.

In sum, Spanish monolingual children initially omit taps; during a second stage of acquisition, taps are substituted by a central lateral approximant, which appears to be reported for all Spanish dialects, as well as by segments that appear to be language-specific as in /ð/ and /β/ for Seville. Finally, taps tend to be omitted word-finally as well as in consonant clusters.

Given that the tap is a late acquisition phenomenon and that it evidences various assimilation processes across Spanish dialects, this study was designed to examine the use of the Spanish tap by a group of Costa Rican children ranging in age from 3;0 to 5;6 and to observe whether what has been reported in previous studies as well as dialect-specific patterns are evidenced.

## 4. The study

### 4.1. Subjects and data collection

The data analyzed here come from audio-recordings of 15 children (6 girls and 9 boys) aged 3;0 to 5;6, as they engaged in naturalistic play sessions with either a researcher or with peers. The sessions ranged from 20 to 40 minutes and there was an interval of two months approximately between each audio-recording; in total, four sessions per child were used for the analysis. The children were all monolingual Spanish-speaking children from the Western region of Costa Rica attending either public day-care centers or public pre-schools in the Naranjo, Palmares, San Ramon, and Zarcero counties.

After transcribing each recorded session, all the words requiring taps (i.e., henceforth referred to as *target words*) were carefully transcribed by using the International Phonetic Alphabet, and the various patterns of substitution and omission were carefully recorded. The transcriptions were conducted by the author, a well-trained linguist, and they were checked for reliability by the researcher and her assistant. When in doubt regarding the pronunciation of a given word, both the researcher and her assistant listened to the recording and decided on the most accurate transcription to use. In some instances, due to external noise mainly, the recordings were not clear and hence, those short sections were not included in the analysis.

### 4.2. Analysis and Results

A total of 1080 examples involving taps were analyzed, 80% (i.e., 874) of which were target-like (i.e., the tap was phonetically realized as [ɾ]). In fact, three of the children used the tap correctly always.

The second most frequent pattern found consisted of omissions of the target sound; specifically, 14% (i.e., 151) of the total number of target words lacked the tap, as illustrated in examples 1 through 5 below.

Examples:

(1) *colo**r**in colo**r**ado* → *coloin coloao*
(2) *co**r**tando* → *cotando* ‘cutting’
(3) *ho**r**migas* → *homigas* ‘ants’
(4) *f**r**ijol* → *fijol* ‘bean’
(5) *neg**r**ita* → *neguita* ‘black.diminutive’

By and large, these omissions occurred word-medially, as only 7 examples of word-final tap omissions were found. Similarly, 8 types of substitutions were identified, many of which consisted of isolated or very few examples, as described below:

a. The tap was substituted by a central approximant [l] 7% of the time, as illustrated in examples 6 through 10.
Examples:

(6) *g**r**abar* → *g**l**aba**l*** ‘record.infi.’
(7) *juga**r*** → *juga**l*** ‘play.inf.’
(8) *aho**r**a* → *aho**l**a* ‘now’
(9) *cocod**r**ilo* → *coco**l**ilo* ‘crocodile’
(10) *comie**r**on* → *comie**l**on* ‘eat.3rd.pl.past.nm

For some of these examples, as in 9, one could argue that it results from regressive assimilation, as the onset of the following syllable starts with a central lateral approximant [l].

b. [ɾ] was additionally substituted by [n], in a small number of the target words, namely 14 (i.e., 1.29%); the examples were found in the speech of 3 children (ages 4 to 5;6), and they included: *convier**t**en* → *convie**n**ten* ('convert.3rd.pl.'), *lastima**r*** → *lastima**n*** ('hurt.inf.'), *hace**r*** → *hace**n*** ('do.inf.'), *quebra**r*** (*quebla**n***) ('break.inf.'), and *llora**r*** → *llola**n*** ('cry.inf.'). Only one of the examples consisted of a substitution word-medially, whereas the rest were all word-final.

c. [ɾ] was further substituted by a voiceless alveolar stop [t] by a single child at age 4;5. This pattern only represented 0.37% of the overall target words, as it was only found in 4 examples, namely *moja**r*** → *moja**t*** ('wet.inf.'), *llove**r*** → *llove**t*** ('rain.inf.'), *rompe**r*** → *llompe**t*** ('break.inf.'), and *resbala**r*** → *llesbala**t*** ('slip.inf.'). Interestingly, this substitution occurred phrase finally only.

d. [ɾ] was moreover substituted by [d] in the speech of a single child aged 4;10 in the utterance *i**r** al patio* → *i**d** al patio* ('go.inf. to the playground'); this substitution only constituted 0.09% of the total target words.

c. [ɾ] was also vocalized in 2 examples by a single child aged 4;3 to 5;1, namely in *quebr**ó*** → *quebj**ó*** ('break.1st.sg.past') and *b**r**uja* → *b**j**uja* ('witch').

e. [ɾ] was further substituted by a post alveolar affricate [tʃ] in a single example by a child aged 3;4, namely in *otro* → *ocho* ('other').

f. [ɾ] was devoiced word-finally in 5 of the target words, produced by 3 of the children. More specifically, in the words *jaguar* → *jaguař* and *pasar* → *pasař;* and three examples with *comer* → *comeř*. Just as reported for adult Costa Rican Spanish, all the examples occurred phrase-finally.

g. [ɾ] was finally also substituted by a voiced interdental fricative [ð]. This pattern was only found in 0.37% of the total target words, and it was found in four examples in the speech of a single child, namely *aho**r**a* → *aho**ð**a* ('now'), *espe**r**e* → *espe**ð**e* ('wait.1st. sg'), *núme**r**o* → *núme**ð**o* ('number').

Overall then, one can state that although by and large the tap was used accurately, as evidenced in 80% of the total number of target words, the second most frequent pattern identified consisted of omissions. In turn, substitutions by a central lateral approximate constituted the third most common pattern spotted. Furthermore, the tap was substituted by seven different sounds, although these substitutions might not truly be 'patterns' *per se*, given that they only amounted to 1.85% altogether and were present in the speech of a few of the children. Of these substitutions, at least [n] and [n] were only found in final codas, the same as the assibilated voiceless rhotic.

On the other hand, the data revealed a curious context where taps were typically omitted, and which was not counted as part of the omissions reported above; they were analyzed separately due to their particular nature. These omissions occurred in word-final

codas in infinitive verbs before a consonant-initial enclitic (i.e., clitic pronoun which attaches to the end of verbs). Of the overall 28 examples of words requiring a tap in such a context (2.59% of the total target words), 26 were missing the tap. The question then rose as to whether this pattern was related to the children's acquisition of clitc pronouns[1]. Hence, all examples of verb forms containing enclitics were analyzed.

Interestingly, upon examining these children's use of enclitics, it was evident that they were using verb constructions that included not only one but sometimes two enclitics. In the total 14 examples identified and which did not involve a final tap, no errors regarding omissions or gender and number agreement were identified, as shown in the examples in 11 through 16 below:

(11) *cuénten**me*** 'tell.2nd.pl.1st.sg.'

(12) *pónga**se.los*** 'put.2nd.sg.refelxive.3rd.sg.masc.'

(13) *llevándo**se.lo*** 'bring.prog.refelxive.3rd.sg.masc.'

(14) *poniéndo**se.los*** 'put.prog.refelxive.3rd.pl.masc.'

(15) *comiéndo**se.lo*** 'eat.prog.refelxive.sg.masc.'

(16) *siénte**se*** 'sit.imp.2nd.sg.

Despite the evidence that these children were able to produce verb phrases with enclitics without problems, a significant number of examples where children omitted, not the enclitic but the tap in infinitive verb forms when preceded by an enclitic starting with a consonant sound were found; these are listed below:

| | | |
|---|---|---|
| *ensena**r.los*** → *enseña**los*** ('teach.inf.them.they.mac.'; 2 examples) | *juga**r.lo*** → *juga**lo*** ('play.inf.it.masc.') | *oi**r.los*** → *oi**los*** ('hear.inf.them.masc.') |
| *come**r.los*** → *come**los*** ('eat.inf.them.masc.') | *come**r.se.la*** → *come**se.la*** (eat.inf.reflexive.it.fem.) | *compra**r.lo*** → *compra**lo*** ('buy.inf.it.masc.') |
| *conta**r.le*** → *conta**le*** ('tell.inf.3rd.sg.') | *come**r.la*** → *come**la*** ('eat.inf.it.fem.') | *mojá**r.se.lo*** → *moja**se.lo*** ('getwet.inf.refelxive.it.masc.') |
| *deci**r.les*** → *deci**les*** ('tell.inf.them) | *escribi**r.le*** → *escribi**le*** ('write.inf.3rd.sg.') | *baja**r.la*** → *baja**la*** ('takedown.inf.it.fem.') |
| *pregunta**r.le*** → *pregunta**le*** ('ask.inf.it) | *monta**r.se*** → *monta**se*** ('ride.inf.refelxive**')** | *peina**r.se*** → *peina**se*** ('comb.inf.refelxive') |
| *i**r.me*** → *i**me*** ('go.inf.me') | *raja**r.la*** → *raja**la*** ('tear.inf.it.fem.') | *cae**r.se*** → *cae**se*** ('fall.inf.reflexive') |
| *come**r.los*** → *come**los*** ('eat.inf.them.mac.') | *comé**r.se.lo*** → *come**se.lo*** ('eat.inf.refelxive.it.masc.') | *corta**r.le*** → *cortile* ('cut.inf.3rd.sg.') |
| *pega**r.le*** → *pega**le*** ('hit.inf.3rd.sg.') | *pone**r.me*** → *pone**me*** ('put.inf.myself') | *contá**r.se.lo*** → *contuse**.lo*** ('cut.inf.refelxive.it.masc.') |

One possible account for these omissions might be the tendency in early child speech to simplify syllables to the basic syllable structure, CV, and to reduce the total number of syllables, often resulting in final consonant deletion, as stated in Bosch-Galcerán (1983). Nonetheless, upon examining all the words containing a tap followed by another consonant in the speech of the children who omitted the tap before an enclitic, as in *ve**r.de*** 'green' and *pa**r.te*** 'part', it was found that those taps were not omitted despite also constituting complex CVC syllables.

A final possibility entertained was that such omissions were only used in rapid speech, but that the tap would surface if the children produced these infinitive verb + enclitic forms

slowly and in a paused fashion. This, however, was not the case, as whenever the researcher heard one of these omissions, she prompted the children to slowly repeat the constructions; they would then repeat the structure in slow motion, but always leaving out the infinitival tap, as shown in the excerpt below:

*CHI: es que quiero pa' *contá**selo**. 'I want it to sing it to you'

*R1: cómo? Diga: para *con tá**r**-se-lo* (sounding out each separate syllable) 'what, say: to tell it to you'

*CHI: para *con tá se lo* (separating each syllable through a pause)'to sing it to you')

Recall that these omissions have been reported in adult Spanish, and hence it is possible that these children were simply reproducing what they heard in their input, but I would like to entertain the hypothesis that these omissions are directly related to the complex nature of enclitic pronouns, given that in comparable syllabic contexts (CVC), omission of taps was not found.

## 5. Conclusions

This study was designed to observe the use of Spanish taps by a group of Costa Rican Spanish-speaking children ages 3;0 to 5;6. The study revealed that the majority of these children had acquired the tap, though common omissions as well as a series of mostly unsystematic substitutions were identified.

Most of the tendencies found in these data have been reported in previous studies. For example, omissions of taps are common in child Spanish, as evidenced in Fernández-Aragón *et ál*. (1994), Moralejo, (2007), and Yavas (2004) in Proctor (2009). The same is true for substitutions of the tap for a central lateral approximant, which is normally acquired before other approximants, including taps and trills (e.g., Fernández-Aragón *et ál*., 1994; Gómez-Fernández, 2004; Moralejo, 2007; Yavas, 2004, in Proctor, 2009).

With regards to language-specific trends, substitutions of the tap for [n] were reported for Costa Rican Spanish-speaking children with speech difficulties in Fernández-Aragón *et ál*. (1994), whereas vocalizations of the tap were reported for Peruvian Spanish in Ciccia-Gabillo *et ál*. (2006). Interestingly, substitutions with [ð] have only been reported for Sicilian Spanish-speaking children in Gómez-Fernández (2004); the voiced interdental fricative phoneme is part of that Spanish dialect and hence one could argue that it results from the children's imitation of their input. In this study, which included Costa Rican children, nonetheless, [ð] is not found in the input.

Nonetheless, the substitutions for a voiceless assibilated rhotic in final coda position could be a reflection of these children's input, as this tendency is found in adult Costa Rican Spanish (Calvo-Shadid & Portilla-Chaves, 1998; Vásquez-Carranza, 2006). The same is true for the deletion of taps in infinitive verb forms before nominal enclitics, as this pattern has been reported for Costa Rican Spanish Vásquez-Carranza (2006); yet, a different account which has been entertained here is that, these deletions result from something inherit in nominal enclitics, as taps in similar phonetic contexts do not get deleted consistently as do these taps (recall that although no previous studies have reported this tendency in child speech, some studies describe it in other adult Spanish dialects, namely Penny, 1969 [cited in Bradley, 2005] and Bradley, 1998). This possibility, nonetheless, has yet to be explored and explained in future research.

Overall, this study confirms findings in previous reports that the tap is a late acquisition phenomenon and that, just as is the case with the acquisition of trills, taps are often substituted by approximations which involve less articulatory effort, and some of which derive from the children's input that itself contains assimilations.

## Notes

1. Clitics are described as a set of features which denote number, gender, person, and case, and Spanish has a large set of clitics, namely, a) verb objects (direct objects, as in ***lo*** *tengo* 'it I've.got' and indirect objects, as in ***le*** *digo que venga* 'him/her I tell to come') and non-objects (reflexive *se*, as in ***se*** *lava* 'itself washes', reciprocal *se*, as in ***se*** *quieren* 'each other they love', impersonal *se*, as in *se come bien* 'you.impersonal eat well', middle-passive sentences *se*, as in *se venden estas casas* 'are for sale, these houses', and lexical aspect *se*, as in *se comió la sopa* 'he/she/it has already eaten the soup' (Examples taken from Gutiérrez-Clellen & Simon-Cerejido, 2007, pp. 319, 320)
   Clitics are also referred to as *weak pronouns*, and they are described in Fujino & Sano (2002) as "unstressed elements that attach to a host verb and serve a pronominal function" (p. 71); this is true at least for enclitics (i.e., clitic pronouns which attach to the end of a verb).
   Regarding the acquisition of clitics, Müller & Hulk (2001) and Simon-Cerejido & Gutiérrez-Clellen (2007), report that their use in child speech may vary depending on the amount of exposure, as clitics are optional in some language dialects and children might hence not evidence them in their speech.
   In fact, Grinstead (2000), Domínguez (2003) and López-Ornant (1994) observe that clitics are used correctly from the beginning, whereas Fujino and Sano (2002) report that clitics are initially absent or infrequent in early child Spanish, but that at a certain point, there is a clear increase in children's use of clitics and they become productive. Grinstead further adds that Spanish monolingual children do not commit errors of commission (exchanging an accusative clitic for a dative clitic, for example) and rarely evidence omission errors. He additionally points out that in early Spanish, imperative verb forms occur to the left of clitics (e.g., *da**me*** 'give.me'), whereas finite verbs occur to the right of clitics (e.g., ***la*** *pone aquí* 'it 3rd.sg.pron. put here'). Torrens & Wexler (1996) point out that children rarely make clitic placement errors with both finite and non-finite verbs. Finally, Lyczskowski (1999, cited in Torrens & Wexler, 1996) argue that malformed or misplaced clitics are rare in child Spanish.

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