Variation in Palatal Production in Buenos Aires Spanish

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1. Introduction

Argentine Spanish is well-known among varieties of Spanish for its "hardened" palatals. The sonorant palatals of European Spanish have undergone fortition in most dialects of Argentine Spanish, resulting in fricatives or affricates in all environments. In one recent study focusing on Buenos Aires, Colantoni (2006) examined the change from sonorant /j/ to obstruent /ʒ/ in some detail. However, when walking through Buenos Aires today, one actually hears voiceless [ʃ] more often than voiced [ʒ], a fact that might be behind marked discrepancies among layperson impressions of these sounds.

On the one hand, many popular authors indicate that the predominant pronunciation of palatals in Argentina is voiced. For instance, Bao and Greensfelder (2002: 187) claim that "most Argentines say 'zh' for ['y'] and for 'll'", while others make reference to the "replacement of the 'll' and 'y' sounds by a soft 'j' sound, as in 'beige'" (Dilks 2004: 25) and to "the unique way in which *porteños* [Argentines from Buenos Aires] pronounce the letters *ll* and *y* (with a sound akin to the French '*je*')" (Tozer 2001). Very recent publications present similar thoughts, stating that "Argentine Spanish differs from other countries in its pronunciation of the *ll* and *y* not as a *y* but as English speakers would pronounce a *j*" (Luongo 2007: 59). Lawrence (2007: 367) concurs that "the local accent imposes a soft 'j' sound on the 'll' and 'y'", such that "*llave* (key) sounds like '*zha*-ve' and *desayuno* (breakfast) sounds like 'de-sa-*zhu*-no'" (Luongo *et al*. 2007: 421).

On the other hand, some authors suggest that the predominant pronunciation of palatals in Argentina has become either partially or completely voiceless. Greenberg (2000: 15) asserts that "the 'y' becomes a combination of 'z' and 'sh'", a statement echoed by McCloskey (2006: 395–396), who describes <ll> and <y> as "somewhere between 'ch' and 'zh'", a sound "not pronounced in English". Finally, Palmerlee *et al*. (2005: 489–496) call attention to "the trait of pronouncing the letters **ll** and **y** as 'zh' (as in 'azure')", but then say that <y> is pronounced "as the 'sh' in 'ship' when used as a consonant" and consistently transcribe both <y> and <ll> with 'sh' (e.g. *calle* 'street' = "*ka*·she", *desayuno* 'breakfast' = "de·sa·*shoo*·no").

These differing descriptions of Argentine palatals suggest that there is a high degree of variation in the phonetic realization of the palatal phoneme in Argentine Spanish. The nature of this variation is what is examined in the present study, which uses acoustic analysis to investigate the realization of palatals in a small sample of speakers from the Buenos Aires area. In the following sections, I review technical work that has been done on this topic, present new data on variation in palatal production and its sociolinguistic correlates, and conclude that a change from voiced to voiceless is already complete.

2. Background

The sounds of Argentine Spanish have drawn the attention of many a Hispanicist over the last sixty years (e.g. Malmberg 1950; Honsa 1965; Fontanella de Weinberg 1983, 1985b, 1987, 1989; Donni de

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Mirande 2000), and the palatal consonants in particular have been the topic of several phonetic and phonological studies (e.g. Gandolfo 1964; Abadía de Quant 1988, 1996; Harris and Kaisse 1999; Baker and Wiltshire 2003). With regard to Argentine palatals, the first linguistic feature that linguists point out is the early merger of what in European Spanish are (or used to be) two distinct phonemes, a palatal lateral /ʎ/ and a palatal glide /j/, a phenomenon called *yeísmo* (Fontanella de Weinberg 1985a, Guitarte 1992). The second feature that is commented upon is the occlusivization or spirantization that turns the merged sound's non-sibilant realization into a sibilant realization, a phenomenon referred to as *zheísmo*. The result is that "Standard Buenos Aires has changed the phoneme /j/ into the voiced palatal fricative /ž/" (Honsa 1965: 277). Moreover, the "groove" (i.e. sibilant) fricative realization is noted by Vidal de Battini (1964) to have already become common in the northeastern and southern provinces of the Pampas, Mesopotamia, and Patagonia regions, though at that time non-sibilant palatals still predominated in the northwestern provinces of the Pampas, Argentine Northwest, and Cuyo regions. Indeed, later work by Lipski (1994: 170) claims that "[t]he groove fricative pronunciation of /y/ originated in Buenos Aires, from which it has spread steadily outward, representing the prestige standard which is associated with Argentine Spanish throughout the world".

The subject of this paper is a third phenomenon often referred to as *sheísmo*, the devoicing of a merged palatal phoneme that appears to have started in the colloquial speech of the lower working classes of Buenos Aires. Alonso (1961) indicates that fifty years ago voiced [ʒ] was the most widespread pronunciation in Buenos Aires, but that devoicing, while still relatively uncommon, was gaining currency. In fact, Honsa (1965: 278) estimates that the change from voiced /ʒ/ to voiceless /ʃ/ began approximately sixty years ago:

> [The colloquial Buenos Aires dialect] originated in the capital city at a time when large numbers of the peasant class fom [sic] the area were moving into Buenos Aires to join the ranks of the city workers, the supporters of Juan and Eva Perón. From all indications, a change in the dialect must have occurred between the years 1946 and 1949, at which time a phonemic mutation, the change of the voiced palatal fricative /ž/ to a voiceless /š/ took root and rapidly spread into the colloquial usage of all classes…The spread was greatly aided by the endlessly broadcast speeches of the Perón era and by the efforts of the higher classes to manifest to the pushing proletariat…that the higher classes were not anti-social.

Though the initial innovation of [ʃ] may have appeared first in the speech of (middle-aged) workers, young people – young women in particular – appear to be largely responsible for its rapid spread. Resnick (1975) shows that in Buenos Aires, [ʒ] occurred in all social classes, while [ʃ] was colloquial and occurred only sometimes; however, the incidence of [ʃ] was especially high among younger speakers. Moreover, Canfield (1981) observes that while /ʎ/ and /j/ were generally leveled to [ʒ], [ʃ] occurred occasionally, especially in women's speech. Finally, Honsa (1965: 279) notes that the regional supplanting of standard Buenos Aires dialect by colloquial Buenos Aires speech was "most noticeable in the usage of the young, no doubt powerfully influenced by the movies, records, radio, and television".

The first study to provide quantitative data on the coexistence of voiced and voiceless palatals in Argentina is Fontanella de Weinberg's (1978) study of 60 speakers from one neighborhood in Buenos Aires. In this study [ʃ] was found to occur most often in females 15-30 years old, followed by females 31-50 years old and males 15-30 years old, and finally males 31-50 years old; [ʃ] was almost never found in speakers 51-70 years old.[1] Thus, the conclusion is that devoicing began among young females, college-educated ones in particular, and then spread to other groups of speakers. Fontanella de Weinberg (1992) notes that voiced, devoiced, and completely voiceless realizations of the palatals coexist and, moreover, are socially conditioned, with the predominance of voiceless and devoiced variants being much greater in the youngest generation of speakers and amongst women.[2]

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[1] In later comments on this work, Fontanella de Weinberg (1992) states: "*las mujeres menores de 30 años eran…el grupo que presentaba usos más ensordecidos…y les seguían las hablantes femeninas mayores de 30 años, mientras que los índices de ensordecimiento de los hombres eran mucho menores dentro de cada edad, aproximándose los varones de 15 a 30 años al uso de las mujeres de 31 a 70 años*".

[2] Fontanella de Weinberg (1992) writes: "*En la actualidad, coexisten realizaciones sonoras, ensordecidas y plenamente sordas…socialmente condicionadas, ya que entre los hablantes más jóvenes y entre las mujeres el predominio de las variantes sordas y ensordecidas es mucho mayor*".

The findings of Fontanella de Weinberg are echoed by Lipski (1994: 170), who states that "[a]lthough the original sound was voiced [ʒ], most younger residents of Buenos Aires now pronounce a voiceless [ʃ], and the devoicing is spreading throughout Argentina", in no small part due to the prestige associated with the speech of the capital. Consequently, there are three types of systems described by Fontanella de Weinberg (1992): (i) that of older speakers, in which the palatals are voiced underlyingly and on the surface (/ʒ/ > [ʒ]); (ii) that of middle-aged speakers, in which the palatals are voiced underlyingly, but surface variably as either voiced or voiceless (/ʒ/ > [ʒ], [ʃ]); and (iii) that of younger speakers, in which the palatals are voiceless both underlyingly and on the surface (/ʃ/ > [ʃ]).

In the present study, I examine whether these three systems can all be found in Buenos Aires today. What variants of the palatal phoneme are out there in Buenos Aires, and what is the sociolinguistic nature of the variation? The next two sections describe a production experiment conducted in June 2007 to get at answers to these questions.

3. Methods

3.1. Procedure

Production of the palatal phoneme was elicited through a five-minute reading task consisting of comic strips from *Toda Mafalda* (Quino 2007). Subjects were told the general purpose of the experiment (to analyze the Spanish spoken in Buenos Aires) and asked to read the passages at a comfortable pace and in a natural, conversational manner. Recordings were made at 48 kHz and 16 bps in the quietest space available with an AKG C420 head-mounted condenser microphone and a Marantz PMD660 solid-state recorder.

3.2. Stimuli

The reading material contained 41 instances of the palatal phoneme in a wide range of environments. First, there were different orthographic representations – namely, <y> vs. <ll>. Second, there were different word types: closed-class items (e.g. *allá* 'there', *yo* 'I', *ella* 'she') as well as open-class items (e.g. *subdesarrollados* 'underdeveloped'). Third, there were palatals of different morphological statuses. Some palatals were associated with the basic morpheme (e.g. *rayado* 'scratched', cf. *rayar* 'to scratch'), while other palatals were restricted to certain parts of a morphological paradigm (e.g. *leyendo* 'reading', cf. *leer* 'to read'). Finally, the palatals appeared in several different phonological environments: word-initially (e.g. *ya* 'already', *llama* 'calls'), word-medially (e.g. *proyectos* 'projects', *millones* 'millions'), before stress (e.g. *ayuda* 'help', *sellito* 'stamp'), after stress (e.g. *joyas* 'jewels', *estrellas* 'stars'), adjacent to high/front vowels (e.g. *ayer* 'yesterday', *desarrollistas* 'developmental'), and adjacent to low/back vowels (e.g. *cayó* 'fell', *gallo* 'chicken').

The 41 palatals were contained in a total of 28 different critical words. Some words appeared multiple times to test how consistent speakers were with their palatal productions. All words were embedded in the context of a dialogue contained in a comic strip so as to elicit the most conversational pronunciations possible given the task type involved (e.g. *castellano* 'Spanish' in *¡¿Por qué demonios no escribirán estos libros en castellano?!* 'Why the hell won't they write these books in Spanish?!').

3.3. Participants

Eleven native speakers of Argentine Spanish from Buenos Aires and its environs participated. Demographic data on these speakers (gender, age, year of birth, the *barrio* or neighborhood in which they grew up, and a list of any other languages spoken by them) are given in Table 1, which shows that these speakers span a wide range of ages and come from several different parts of the city. Speakers F1, F2, F4, M1, M2, M4, M5, and M6 are from neighborhoods spread across four communes (administrative districts) within the capital city proper (cf. Vargas 2005). These neighborhoods also span a number of real estate price brackets, with Colegiales and Balvanera being among the most expensive neighborhoods to live in and La Boca, San Cristóbal, and Villa Urquiza being less expensive neighborhoods (Aizpeolea 2006).

Table 1. Demographic data, all participants

Speaker	*Gender*	*Age*	*Year of birth*	*Home neighborhood*	*Other languages spoken*
F1	female	21	1986	Balvanera	English, Korean
F2	female	23	1984	Balvanera	English, Korean
F3	female	32	1975	Campana	English, Guaraní
F4	female	79	1928	La Boca	Italian
F5	female	67	1940	Córdoba	English, Italian
M1	male	18	1989	Balvanera	English, Korean
M2	male	18	1989	Colegiales	English
M3	male	31	1976	Lomas de Zamora	English, Korean
M4	male	36	1971	San Cristóbal	English
M5	male	25	1982	Balvanera	N/A
M6	male	69	1938	Villa Urquiza	N/A

Speakers F3, F5, and M3 grew up outside the capital city, although they had been living in Buenos Aires for many years prior to their participation in the study. Speakers F3 and M3 are originally from sections of Buenos Aires Province right outside the city of Buenos Aires, while F5 is originally from the city of Córdoba in Córdoba Province, which borders Buenos Aires Province on its northwest side.

3.4. Phonetic analysis

Three measures of devoicing were taken for each participant, the latter two in Praat 4.5.14 (Boersma and Weenink 2007). First, an overall percentage of [ʃ] usage was calculated by counting up the number of palatal tokens (out of 41 total) that sounded like voiceless [ʃ]. Second, the average percentage of voicelessness in the palatals was determined. This was done by demarcating the beginning and end points of a palatal's duration using changes in the waveform (onset of noise, decrease in amplitude) and changes in the spectrogram (diffusion of F2/F3, onset of mid- to high-frequency noise), and then counting as voiced those sections of a palatal's duration showing both periodicity in the waveform and a voicing bar in the spectrogram. Finally, the average relative intensity of the palatals was computed by measuring the average intensities of a palatal and of the preceding and following vowels over the middle 50 ms of the segment's duration (if less than 50 ms long, over the whole duration of the segment), and then dividing the intensity of the palatal by the intensity of the adjacent vowel.[3] False starts and tokens with laughter were thrown out, and all measurements were taken by hand on a Fourier spectrogram with a Gaussian window shape, window length of 5 ms, dynamic range of 50 dB, and pre-emphasis of 6 dB/octave.

4. Results

4.1. Inter-speaker variation

Table 2 summarizes the phonetic data for all participants: overall percentage of [ʃ] usage, average percentage of voicelessness in the palatals, and relative intensity of the palatals in comparison to preceding (V_1) and following vowels (V_2). The first pattern to note is that in accordance with Fontanella de Weinberg (1992), there are three types of speakers: "voicers", "devoicers", and "variable devoicers". Voicers (F4, F5, M6) rarely devoice their palatals, while devoicers (F1, F2, F3, M1, M2, M3, M5) almost always do so. In addition, variable devoicer M4 devoices his palatals roughly half of the time.

[3] Relative intensity is not a perfect measure of consonant voicing, as it is likely to be somewhat affected by differences in other phonetic variables as well (e.g. compared to voiceless fricatives with low airflow, equally voiceless fricatives with high airflow will be higher in intensity and thus relatively closer to the intensity of voiced fricatives). Nonetheless, this is the amplitude-based measure used in this study because it is more straightforwardly calculated than other measures (e.g. cepstral peak amplitude, cf. Colantoni 2006) which, for all their increased complexity, do not appear to be much more reliable.

Table 2. Acoustic and perceptual data, all speakers

Speaker	*% [ʃ] usage*	*Avg. % vcls.*	*Intensity(C/V$_1$)*	*Intensity(C/V$_2$)*
F1	100.0	85.7	0.89	0.89
F2	95.1	83.7	0.81	0.83
F3	100.0	91.9	0.84	0.85
F4	4.9	7.3	0.91	0.90
F5	24.4	21.9	0.85	0.87
M1	100.0	87.2	0.80	0.81
M2	95.1	84.3	0.82	0.81
M3	100.0	85.5	0.84	0.83
M4	60.0	53.7	0.84	0.84
M5	97.6	85.2	0.75	0.75
M6	0.0	0.0	0.93	0.96

The differences among speakers in percent [ʃ] usage are reflected in similar differences in percent voicelessness. Relative intensities are also consistent with the pattern in percent [ʃ] usage, generally decreasing as percent [ʃ] usage and average percent voicelessness increase. This is the expected result, since, *ceteris paribus*, segments should go down in intensity as the energy of voicing is lost.

Percent [ʃ] usage, percent voicelessness, and relative intensities are not correlated with gender or home neighborhood, but are significantly correlated with year of birth (cf. Table 3 below). The relationships of these measures with year of birth are shown in Figures 1-2 along with best-fit lines.

Figure 1. Year of birth vs. percent [ʃ] usage (top left), vs. average percent voicelessness (bottom left), and linear models of the data (top right and bottom right)

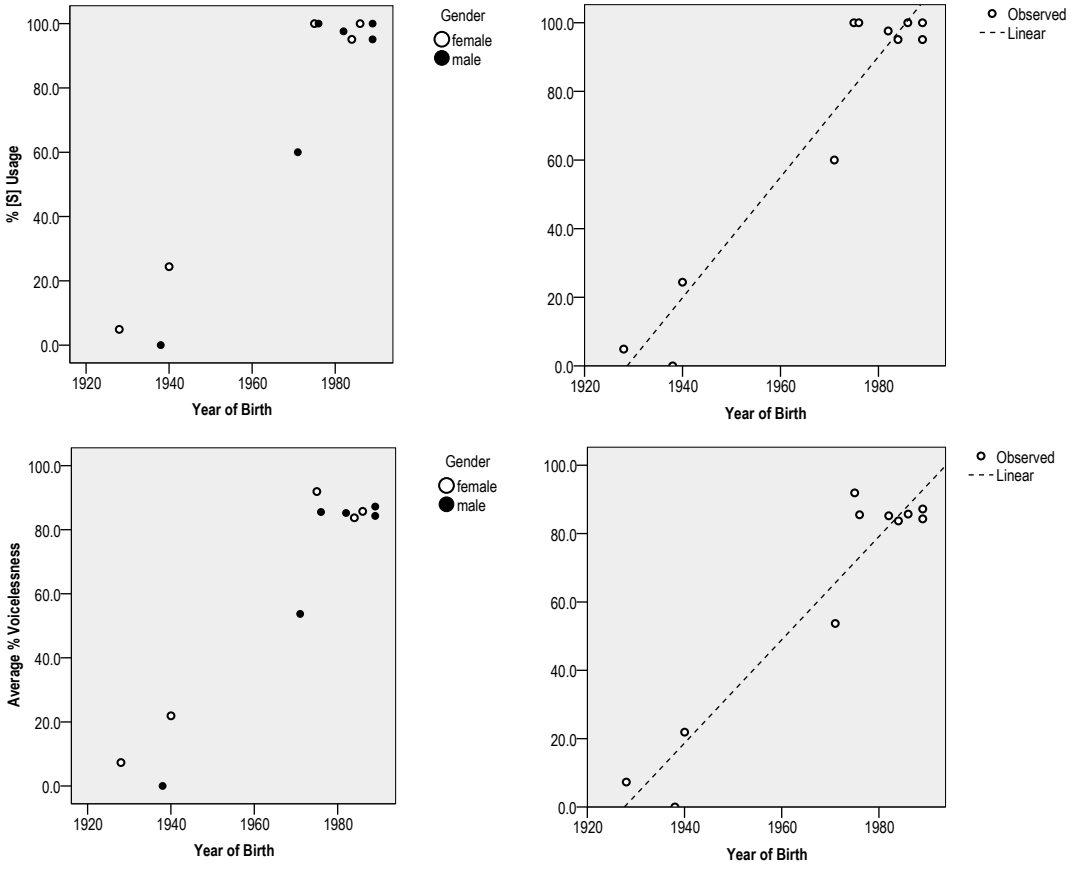
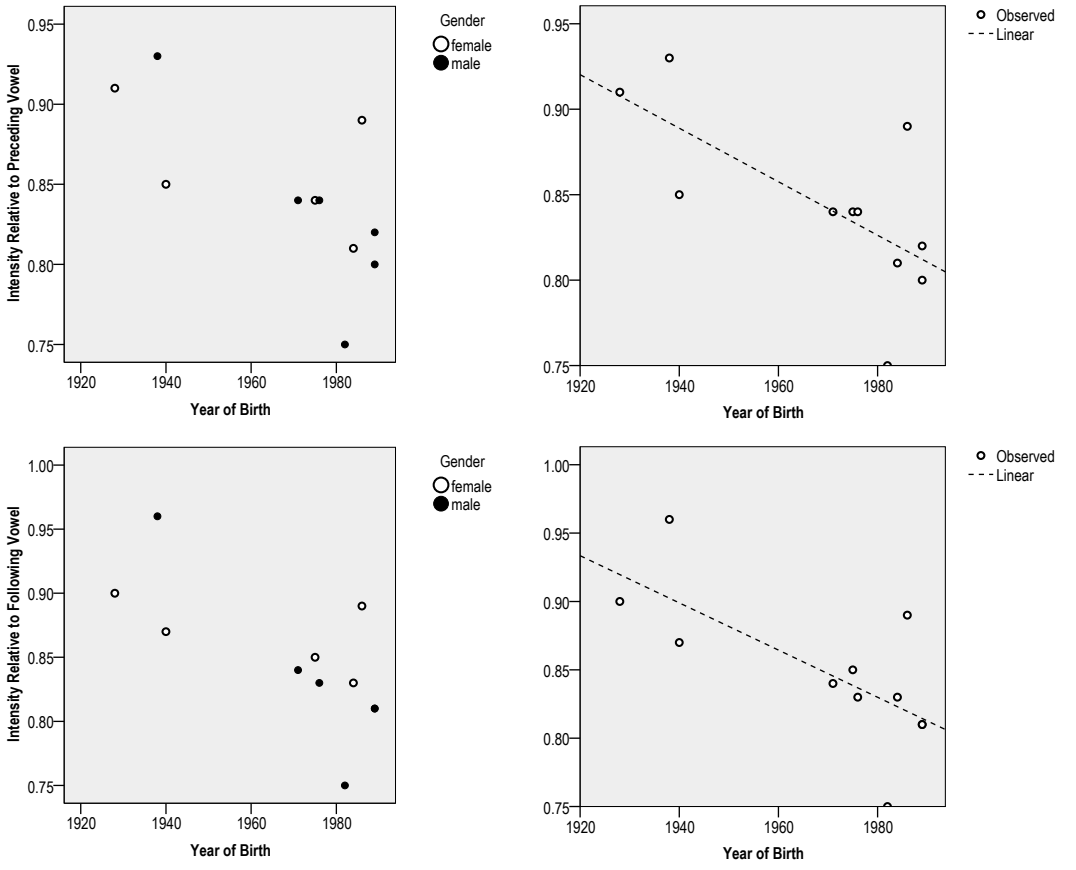


Figure 2. Year of birth vs. intensity relative to V_1 (top left), vs. intensity relative to V_2 (bottom left), and linear models of the data (top right and bottom right)



There are moderate negative correlations of relative intensities with year of birth and very strong positive correlations of percent [ʃ] usage and average percent voicelessness with year of birth, as summarized in Table 3. In other words, as year of birth increases (and age decreases), percent [ʃ] usage and average percent voicelessness increase, while relative intensities decrease.

Table 3. Correlations of devoicing measures with sociolinguistic variables

	% [ʃ] usage	*Avg. % vcls.*	*Intensity(C/V_1)*	*Intensity(C/V_2)*	
Gender	.030	.000	-.350	-.493	Spearman's *r*
	.931	1.000	.292	.123	*p*-value
Barrio	-.160	-.154	.474	.491	Spearman's *r*
	.639	.652	.141	.125	*p*-value
Y.O.B.	.960	.954	-.685	-.700	Pearson's *r*
	< .001	< .001	.020	.016	*p*-value

Multiple linear regression was performed to see which sociolinguistic factors constitute significant predictors of palatal devoicing. In accordance with what the literature suggests about these factors, predictors were entered in a hierarchical blockwise fashion in the order (i) age, (ii) gender, and (iii) home neighborhood. The regression results indicate that age alone accounts for almost all of the variation in palatal devoicing as measured by percent [ʃ] usage and average percent voicelessness (age vs. percent [ʃ] usage: $F(1, 9) = 104.999$, adjusted $r^2 = .912$, $p < .001$; age vs. average percent voicelessness: $F(1, 9) = 92.040$, adjusted $r^2 = .901$, $p < .001$); moreover, age accounts for the largest

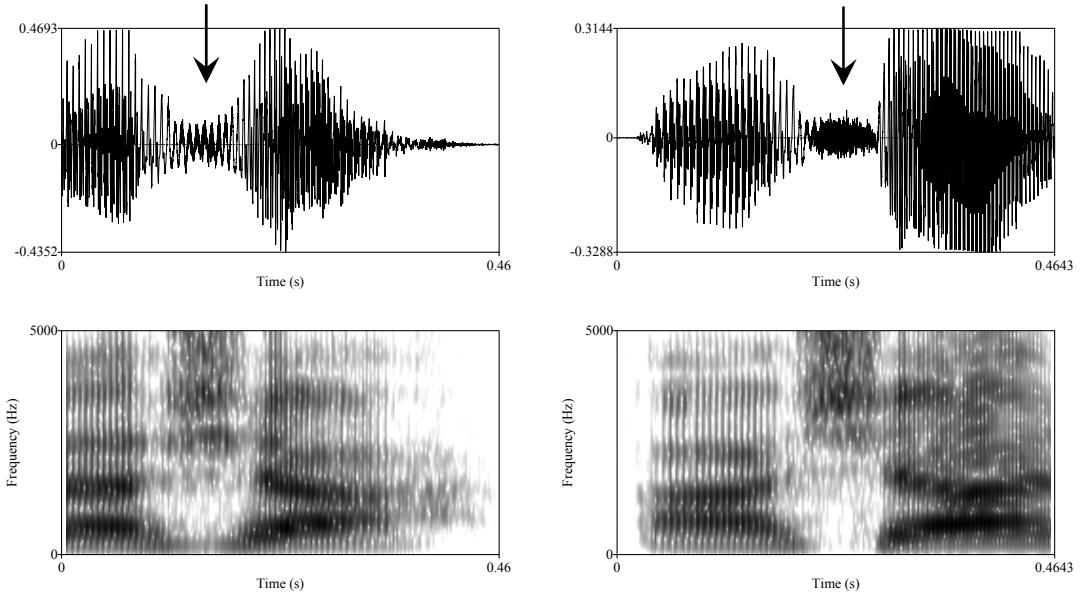
portion of the variation as measured by relative intensities – over 40% (age vs. intensity relative to V_1: $F(1, 9) = 7.938$, adjusted $r^2 = .410$, $p = .020$; age vs. intensity relative to V_2: $F(1, 9) = 8.655$, adjusted $r^2 = .434$, $p = .016$). Adding gender as a predictor does not improve the model for any measure significantly ($\Delta F(1, 8) < 2.6$, $p > .15$ for all). On the other hand, adding neighborhood as a predictor slightly improves the model for the first two measures (age/gender/neighborhood vs. percent [ʃ] usage: $\Delta F(1, 7) = 7.378$, $\Delta r^2 = .032$, $p = .030$; age/gender/neighborhood vs. average percent voicelessness: $\Delta F(1, 7) = 7.696$, $\Delta r^2 = .035$, $p = .028$), though not for the second two measures ($\Delta F(1, 7) < .6$, $p > .4$ for both). However, given that the average VIF here is well over 1, we cannot generalize the findings of this latter model beyond this speaker sample. Thus, age is by far the best predictor of palatal devoicing, accounting for upwards of 90% of the variance in percent [ʃ] usage and average percent voicelessness.

4.2. Intra-speaker variation

Though speakers seem to divide into three groups, speakers within each group are not equally uniform in their palatal productions. Whereas the devoicers consistently say [ʃ], the variable devoicer and voicers alternate between voiced and voiceless obstruent variants, between different voiced obstruent variants, or between obstruent and sonorant variants.

For instance, variable devoicer M4 says both [ʒ] and [ʃ], an alternation that does not seem to be lexically specified since the different variants frequently appear in instances of the same word. In Figure 3, one can see that M4 produces the word *allá* 'there' with either a voiced [ʒ], as on the left where the consonant shows strong periodicity in the waveform and a clear voicing bar in the spectrogram, or a voiceless [ʃ], as on the right where the consonant lacks both of these characteristics.

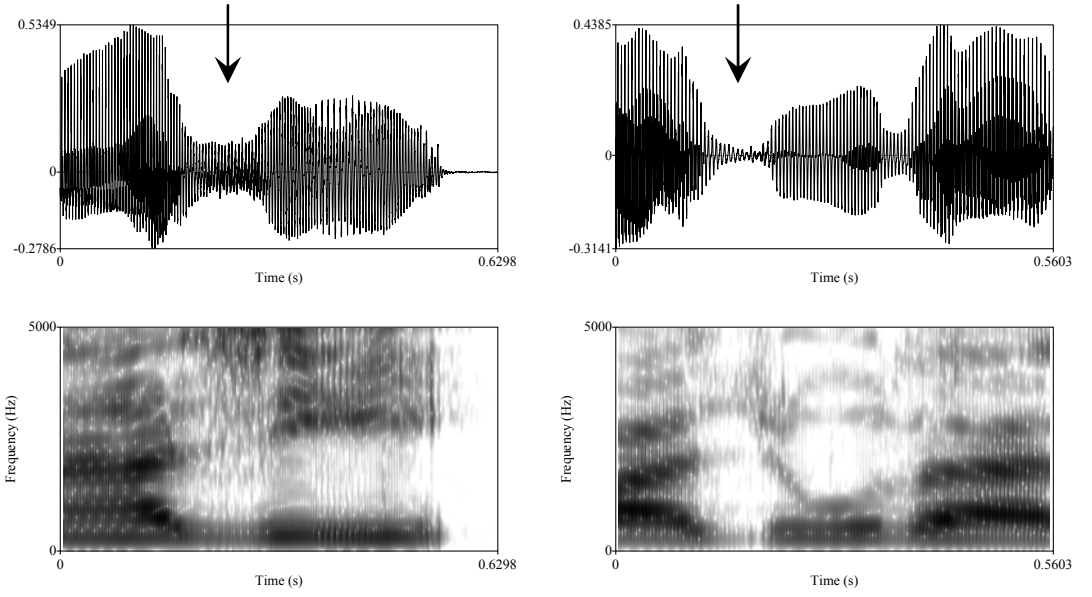
Figure 3. Variation in M4's palatal production in the word *allá* 'there': [ʒ] (left) and [ʃ] (right)



As for the voicers, they generally alternate between a voiced sibilant palato-alveolar fricative [ʒ] and a voiced non-sibilant palatal fricative [j̬], with F5 occasionally saying [ʃ] and [ʎ] and M6 producing [dʒ], [j], and [ʎ] for a few forms. An example of this variation is shown in Figure 4 below for F5's palatal productions in the words *allí* 'there' and *ayuda* 'help'. Here the high-amplitude, high-frequency noise characteristic of [ʒ] on the left contrasts sharply with the low-amplitude, low-frequency noise of [j̬] on the right, which furthermore shows relatively well-defined formant structure in comparison to [ʒ].

Thus, in addition to the inter-speaker variation seen above, there is quite a bit of intra-speaker variation, which is most pronounced among those speakers who regularly produce voiced variants, as devoicers produce a voiceless [ʃ] nearly all of the time.

Figure 4. Variation in F5's palatal production: [ʒ] in *allí* 'there' (left) and [ʝ] in *ayuda* 'help' (right)



5. Discussion

This study has found that there are at least six different allophones of the palatal phoneme in the Buenos Aires area: [ʃ], [ʒ], [dʒ], [ʝ], [j], and [ʎ]. The allophone [dʒ] is never pronounced when there is a preceding vowel, only in initial position; furthermore, [ʎ] is only pronounced when the phoneme is represented as <ll>, thus making it rather likely that this is a "spelling" pronunciation. Otherwise, the use of these variants is not correlated with orthographic representation, phonological environment, or morphological environment. Instead, there is an age-graded pattern of usage of voiced vs. voiceless variants consistent with Honsa's (1965) estimation that devoicing began occurring sometime between 1946 and 1949. In this study, the oldest speakers born before 1945 were found to produce predominantly voiced allophones (mostly [ʒ] and [ʝ]), while the youngest speakers born after 1975 almost exclusively used voiceless allophones (generally [ʃ]); on the other hand, the middle-aged speaker born in between showed a high degree of variability between voiced and voiceless allophones. These findings are therefore consistent with the typology of palatal systems proposed by Fontanella de Weinberg (1992). Three types of speakers – voicers, devoicers, and variable devoicers – were all found to exist.

Given that the previous research discussed above points to younger speakers as having innovated the [ʃ] pronunciation, the age-graded pattern of palatal production found here is indicative of a sound change within the population, which the literature suggests has progressed as [ʎ]/[j] > [ʝ]/[ʒ] > [ʃ]. Notably, this does not seem to be a case of within-speaker "change across the lifespan" (cf. Guy and Boyd 1990, Sankoff and Blondeau 2007) for two reasons. First, individuals' usage seems to be quite stable. On the basis of the researcher's and the speaker's own informal observations, speaker F1's pronunciation, for instance, has remained essentially the same over nine years. Second, the voiceless variant [ʃ] is a relatively recent innovation; it is not a long-standing non-standard variant. Though we might need to wait 30-40 years to be sure, so far the usage of "non-standard" [ʃ] does not appear to increase in old age. Thus, we might wonder: in 60 years, will there be only devoicers left in Buenos Aires? In all probability, the answer is yes.

With regard to speaker geography, while Fontanella de Weinberg's (1978) study focused on speakers from the same neighborhood in Buenos Aires, the present study examined speakers from several different neighborhoods and found no significant correlation between neighborhood and palatal devoicing. More neighborhoods need to be studied, however, before we can conclude that there are in fact no local differences.

This study also differs from Fontanella de Weinberg's in not finding any significant effect of gender on speakers' devoicing rates, a result that is probably attributable to the passage of 30 years between the two studies. Recall that Fontanella de Weinberg found that [ʃ] occurred most often in female speakers that would have been 45-60 years old in 2007, followed by female speakers that would have been 61-80 years old, male speakers that would have been 45-60 years old, and male speakers that would have been 61-80 years old. This means that in this study, gender effects should show up in the upper age bracket. In fact, this seems to be exactly what we find: in comparing female speaker F5 and male speaker M6 (both of whom are in the 61-80 year age group), F5 is found to devoice about 25% more than M6. What the present study adds to Fontanella de Weinberg's findings is data on a generation that for the most part had not been born yet at the time of her study. Here no obvious difference between males and females was found: speakers in the youngest age bracket are all approaching a ceiling of 100% devoicing. Thus, although palatal devoicing was found to be correlated with age, it no longer seems to be correlated with gender. Young people today consistently say [ʃ] whether they are male or female, and this result suggests that the change from [ʒ] to [ʃ], rather than being an ongoing change, is better characterized as a change that has already been completed.

In this study, I have concentrated on the contemporary distribution of palatal variants in Buenos Aires and not on their social meaning. Nevertheless, it is clear that speakers are aware of the difference between voiced and voiceless variants and, furthermore, that they do not mean exactly the same thing. Comments from participant debriefings (during which participants were asked if they recognized the difference between voiced and voiceless variants and, if so, whether they thought they carried any particular social connotations) suggest that, within Buenos Aires at least, there is no particular stigma attached to the voiceless palatal variants, but whether there are systematic connotations of voiced vs. voiceless variants remains unclear. Given the results of this study, one might think that there would be general agreement among *porteños* that voiced variants sound older or more formal (e.g. palatals heard on the news are usually voiced, since most anchors belong to an age group that uses voiced variants). However, the first impression of young speakers who cared to comment on the difference was that voiced versions of the palatals sound "provincial" and "unsophisticated" to them. This is perhaps to be expected, since of the Argentineans in their age group it is really only people from the provinces outside Buenos Aires that would use these voiced variants. What remains to be seen is whether older speakers who produce only voiced variants or alternate between voiced and voiceless ones have similar judgments of the social meaning of the variants as young speakers do. It is not unlikely that their judgments will be significantly different. For instance, it might be that while younger speakers think [ʒ] sounds "unsophisticated", older speakers think it sounds "proper".

6. Conclusion

This study has shown that, 30 years after Fontanella de Weinberg (1978), variation between voiced and voiceless allophones of the palatal phoneme is still correlated with age, but no longer with gender. The fact that the youngest generation almost invariably uses voiceless variants now suggests that the change from [ʒ] to [ʃ] is already complete. Though the innovation of [ʃ] may or may not have started with older speakers, younger speakers appear to be responsible for its rapid spread and have generalized it to the point of being the dominant variant in Buenos Aires today.

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Corrigendum to

Variation in Palatal Production in Buenos Aires Spanish

3.4. Phonetic analysis

The average relative intensity of the palatals was computed by measuring the average intensities of a palatal and of the preceding and following vowels over the middle 50 ms of the segment's duration (if less than 50 ms long, over the whole duration of the segment), and then subtracting the intensity of the adjacent vowel from the intensity of the palatal.

4. Results

4.1. Inter-speaker variation

Table 2. Acoustic and perceptual data, all speakers

Speaker	*% [ʃ] usage*	*Avg. % vcls.*	*Intensity(C–V_1)*	*Intensity(C–V_2)*
F1	100.0	85.7	-8.2	-7.8
F2	95.1	83.7	-14.7	-13.4
F3	100.0	91.9	-10.6	-10.1
F4	4.9	7.3	-6.9	-7.2
F5	24.4	21.9	-10.7	-9.1
M1	100.0	87.2	-14.6	-14.0
M2	95.1	84.3	-13.8	-14.1
M3	100.0	85.5	-12.6	-12.8
M4	60.0	53.7	-12.4	-12.0
M5	97.6	85.2	-18.7	-18.6
M6	0.0	0.0	-5.7	-3.5

Figure 2. Year of birth vs. intensity relative to V_1 (left) and V_2 (right)