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Quantifying Australian L2 Spanish pronunciation

Abstract

The research base of pronunciation teaching is enhanced by quantifying the differences between native and non-native pronunciation. The quantification allows teachers to target the specific differences that contribute to heavily-accented Spanish. This case study compares the phonetic-acoustic features of a female Australian learner of Spanish with those of a native speaker of Spanish. Both speech samples are recordings of the same text, giving a like-with-like comparison. The speaker's recording and a native-speaker recording will be compared for each word and environment. Voice onset time measures show less variation for the native speaker recording, while the non-native speaker shows variation more typical of English than Spanish. Vowel formant measures also show more variation in the speech of the non-native learner than of the native speaker, including neutralisation of unstressed vowels. In addition, several other non-native features occur in the learner's pronunciation: obstruents where fricatives or approximants are expected; weak pronunciation of /r/ and voiceless vowels. Prosodic differences, notably in syllabification and vowel liaison but also intonation, were noted.

1. Introduction

This study aims to describe the phonetic, phonological and prosodic features of Australian L2 Spanish interlanguage with a case study of a single speaker's pronunciation in a controlled environment.

The focus of studies on teaching Spanish pronunciation and English-Spanish interlanguages has been primarily on North American English and North American learners, due to the large volume of Spanish students there (Ministerio de Educación, Cultura y Deporte 2012, among others). Little attention has been devoted to the description of the characteristics of Spanish pronunciation in Australia. This contribution is part of a larger project in which we are looking to improve the resources available to teachers of Spanish in Australia.

Although the generalisability of a case study is not wide, the use of quantifiable data grounds the research in a scientific experimental process, without relying on impressionistic and anecdotal description of Australian L2 Spanish. In this study we compare a native speaker model of a text with an Australian student's reproduction of the same text. The one-to-one comparison removes much of the phonological, textual and environmental difference that can arise from different recording contexts. The one-to-one comparison also facilitates the environmental validity of the quantified data that is collected, balancing the small sample size.

A single speaker allows finer detail that would not be so easily or quickly extracted from larger groups. This case study can also guide the production of characteristics of Australian L2 Spanish for use in a larger study with more participants. This characterisation of Australian L2 Spanish will also develop a simple description of the areas in which Australian learners of Spanish are more likely to have difficulty, allowing teachers of Spanish to focus their teaching, rather than using generic, widely-focussed resources.

Spanish teaching is important to Australia in different areas. Firstly, 117,498 people claim Spanish as a home language across Australia (Australian Bureau of Statistics 2012). Furthermore, about 15 universities offer a Spanish program of some description and, although less widely-taught than Japanese, Indonesian or French, it is nevertheless present in primary and secondary education in the country. The international relevance of this language has recently been recognized by the government, as it is part of the second stage of development for the National Curriculum: Languages policy (Australian Curriculum, Assessment and Review Authority [ACARA] 2011), where it is listed as 'a language of global importance'. Finally, from a regional perspective, Spanish is also a language of the Pacific, as it is one of the national or commonly spoken languages of all the countries along the eastern Pacific coast from the USA to Chile.

2. Spanish pronunciation teaching and learning

The pedagogical study of Spanish has received ample attention, especially in its grammatical aspects. It is possible to find many textbooks in the market, especially elaborated in Spain or the USA and it is a field where Anglophone students can find many materials for further study. However, experts in Spanish as L2/FL have long noted that when it comes to pronunciation, the situation is radically different (Mellado 2012, among many others). A clear example of this is that the *Draft Shape of the Australian Curriculum–Languages* (ACARA 2011) makes no mention of teaching pronunciation.

One of the main reasons for this situation has to do with pedagogy (see Aurrecoechea Montenegro 2002; Iruela 2004, among others). As a reaction to more repetitive pedagogies of the past, such as the Audiolingual methodology and due to the focus of the Communicative Method in achieving communication first and foremost, attention to pronunciation—and to form in general—was radically decreased (Iruela 2004: 175).

While successful communication is by all means one of the main goals in learning a second language, experts have also highlighted the risk of ignoring the form of the language components (see Gil Fernández 2007, among many others). Intelligibility remains the main goal, but it is also important to improve the students' command of the language beyond lexicon and grammar; both are not exclusive, especially in the university classroom. Furthermore, whereas pronunciation accuracy may be demoted under the explicit aim for intelligibility, the same does not apply consistently

to lexicon and grammar, as evidenced by the disproportionate number of exercises still present in many textbooks (see Santamaría Busto 2010, footnote 3). If a Spanish student avoids the 'painful' task of learning command of the subjunctive, it would likely result in lower social success, particularly at higher levels of competence, even where L2 communication is successful.

It is well-known that pronunciation teaching and learning has been a neglected area, not only for Spanish (Arteaga 2000; Aurrecoechea Montenegro 2002; Elliott 2003; Gil Fernández 2007; Llisterri 2003; Morin 2007; Usó Viciedo 2009) but for many languages, including English (Barrera Pardo 2004; Derwing and Munro 2005; MacDonald 2002). This lack of interest contrasts sharply with the perceived interest on the part of the students. As Barrera (2004: 12) notes, "[l]earners… tend to consider pronunciation instruction as very beneficial" (see also Lord 2005: 565).

Teachers' aptitude and attitude is another important factor (see Derwing and Munro 2005 and MacDonald 2002 for English). Several issues have been highlighted (Aurrecoechea Montenegro 2002; Iruela 2004; Mellado 2012; Orta Gracia 2009; Santamaría Busto 2010; Usó Viciedo 2009, among others), including the following:

1. The belief that Spanish is easy to pronounce and that therefore students will pick it up easily on their own.
2. The perception that they lack the necessary knowledge to teach pronunciation.
3. Lack of appropriate materials.

While Spanish spelling is easier than that of English, this first issue reveals a partial misconception of what teaching pronunciation entails. First of all, it is well-known that there is not necessarily a one-to-one mapping of sounds and letters in Spanish anyway (for instance, <v> and <b> mapping on to /b/). More importantly, as Iruela (2004), Gil Fernández (2007) and Mellado (2012), among others, clearly state, teaching pronunciation goes beyond reading and practising sound-letter associations. It also includes suprasegmentals (i.e. prosody), crucial to achieve clear pronunciation. It is also essential for social competence, as poor pronunciation can lead to negative social perceptions (Gil Fernández 2007: 97-99).

As for the second issue, researchers are very clear about it: teachers need to know to be prepared to teach:

> *El profesor debe saber cuáles serán las dificultades a las que se enfrentarán los aprendientes para poder pronunciar adecuadamente una lengua extranjera* (Mellado 2012: 11).
>
> A teacher should know what the difficulties that students face will be in order to be able to adequately pronounce a foreign language (Our translation).
>
> *[E]s lógico suponer que enseñar a pronunciar requiere no solo poseer un conjunto de "recetas", sino también conocer la descripción fonética y fonológica de la lengua por una parte, y las causas de la interferencia fonética por otra* (Llisterri 2003: 109).

> It is logical to assume that teaching how to pronounce requires not only knowing a group of "tricks", but also knowing the phonetic and phonological description of the language, on the one hand, and the causes of phonetic interference, on the other hand. (Our translation).

Several manuals, such as Gil Fernández (2007) and Gil (2012), serve as guides for the Spanish teacher. It is also crucial to be adequately knowledgeable of the phonetics and phonology of their students' L1 (Mellado 2012: 31-32). While the teacher needs to be aware and in control, there is no need for the teacher to become an expert phonetician/phonologist, at least no more than they would be expected to be with regards to lexicology or syntax (Iruela 2004: 233-235).

The lack of materials is a clear problem and, in order to tackle it, it is necessary to start by examining the actual problems our students face in the Australian classroom. As Lahoz (2012: 111) indicates, L1/L2 contrastive analyses remain most necessary. In the following sections we analyse the speech of an L2 Spanish student in order to be able to properly quantify the problems and obtain scientifically measured results, in articulatory terms at this moment, in order to inform our creation of appropriate materials, aimed at helping teachers and students of Spanish in Australia succeed in obtaining "an intelligible pronunciation within the limits of what is considered correct, near to a native variety, socially acceptable and tolerated without difficulty by native speakers" (Mellado 2012: 19, our translation).

3. Methodology

3.1. Recordings

A recording was obtained with permission from an Australian English-speaking Spanish learner in their third year of Spanish at university. The recording was taken as a baseline recording at the beginning of a university-level pronunciation course, before specific pronunciation instruction had taken place.

Students were instructed to record themselves in their own time reading a short text from their textbook called *Dialectos* (see Morgan 2010: 401 for the full text). They were allowed to record the text as many times as they liked but were not instructed to record their best pronunciation at this stage. The recording used here was made as a 192kb/s stereo MP3 file, which was converted to mono for analysis. The student examined here was selected after auditory assessment of the L2 features of each recording. The student was chosen as one exhibiting typical Australian L2 Spanish characteristics but not exaggerated. The instructor (a native speaker of Castilian Spanish) also recorded his own version of the same text as a model of pronunciation. His recording was made as a 44kHz WAV file through Praat with a Logitech Webcam microphone.

The use of the same text for both recordings eliminates the differences that would occur in recordings of spontaneous speech due to the different numbers and environments of each phoneme. Although the text in question is not well-balanced

phonologically—there are few occurrences of /u/, for example—the same phonemes occur in the same environment in both texts. For this reason, we do not anticipate strong environmental bias in the measurements.

3.2. Recording analysis

Both recordings were transcribed phonetically by the first author and confirmed by the second author, who was also the course instructor. Particular attention was paid to transcription of voiced stops and approximants, aspiration and vowels, recognised as relevant features when learning Spanish. Broad intonation features were noted for each speaker at phrase boundaries (where punctuation appears in the text) as well as sequences that each speaker spoke together as a single string.

Vowel F1 and F2 measurements were taken using Praat (Boersma and Weenink 2012) for each monophthong vowel in both recordings to measure the acoustic correlations of height and backness of vowel articulation. Measurements were not taken where non-modal phonation inhibited the measurability of the formants or where the phonetic realisation of the phone showed two clear targets (i.e. was a diphthong). Each measurement was coded by phoneme, rather than phonetic transcription, so that vowel phonemes groups could be compared. The vowels were also coded as stressed and unstressed. The measurements for each speaker were plotted against each other and t-tests were taken to test the difference between stressed and unstressed values for each vowel.

Voice Onset Time (VOT) measurements were taken for each occurrence of a voiceless stop phoneme (/p/, /t/ and /k/). Each occurrence was coded for stress, word-initial environment and its occurrence after /s/, under the assumption that the allophonic realisations of Australian English /p/, /t/ and /k/ phonemes (as described in Cox 2012) may appear in the Australian learner's utterances. The measurements were compared to the initial transcription to ensure accuracy. T-tests were taken between the mean VOT for each phoneme between speakers and Anova tests between the different environments within each speaker's data. The R statistical package (R Foundation for Statistical Computing 2013) was used for all statistical testing and plotting of results.

4. Results

Table 1 shows a side-by-side comparison of the transcription of each speaker.

4.1. Vowel formants

The vowel formant measures (Table 2; Figures 1 and 2) show some differences between the two speakers.

Table 1: Comparison of L1 model and L2 Australian Spanish pronunciations of Dialectos *(original text in Morgan 2010: 401).*

L1 Spanish model	Australian L2 Spanish
ˈaj mas ðe tɾesˈθjentos miˈjones ðe pɛɾˈsonas ke ˈablan espaˈɲol	ʔaj mas də tʰreˈsjentɔs mɪˈjɔnɛs tə pɜˈsɔnɛs kʰe ˈʔablan espæɲɔɫ
pɾɪnθipalˈmɛnte nespaɲi latinwəˈmeɾika	pʰɹɪnsɪpaɫˈmentej enesˈpaɲa ʔi latinowaˈmeɾika
poɾ:aˈθones ɪstoɾikas i xjoɣɾafikas:	poɹ:aˈzɔnes isˈtoɾɪkas i heoˈkrafɪkas
ʔan diβɛɾˈxiðo los ˈbaɾjos ðiaˈlɛktos ðe la ˈleŋgwa	ʔan divəˈxiðo las ˈvaɹjos tiaˈlɛktɔs de la ˈleŋgwa
no solwekˈsistĕn dɪfeˈɾentes aˈθentɔs ˈsino tamˈbjen difeˈɾɛntes ˈlɛksikos	noˈsɔlɔ egˈzisten difəˈɾentes aˈsɛntɔs sinɔ tʰamˈbjen tɪfəˈɾentes ˈleksikɔs
se ˈðiθe ˈkotʃe ˈpiso i maˈiθ enesˈpaɲa	se ˈdise ˈkotʃe ˈpiso imaˈis enesˈpaɲa
ˈawtwapartaˈmento i ˈʧoklo en ˈʧĩle	ˈawtow apa:taˈmentow i ˈʧɔklow (en ʧĩɹeʔ) en ˈʧĩlej
ˈkaɾo ðepaɾtaˈmento jeˈlotem:exi̯ko	ˈkaɹow depa:taˈmɛntow ʔi ʔɛˈlɔtɛ emˈmɛhikow
sinemˈbaɾɣo las manifestaˈθjones kultuˈɾales ðel ˈmundo ispanoaβˈlante	sɪn emˈba:gow las manifestaˈsjɔnes kuɫtuˈɾaɫes deɫˈmundo hɪspanowabˈlantej
ˈaɾte ˈθine ðeˈpoɾte literaˈtuɾa ˈmusikaj teleβisiˈɔn	ˈa:t:ej ˈsinej ˈdepo:ɹtej litəɹaˈtuɹɐ ˈmʊzika itelevizi ˈjɔn
ˈsiɾβen ˈpaɾa kɔmpenˈsaɾ la ðiβɛɾsɪˈðað lɪŋˈgwistɪka	ˈsɜɹven ˈpæɹa kɔmpenˈsa: la dɪvɜ:siˈdad lɪŋˈgwɪstɪka

Table 2: Mean formant measurements of L1 and Australian L2 Spanish

Vowel	L1 Spanish F1	L1 Spanish F2	L2 Spanish F1	L2 Spanish F2
/a/ (Std dev.)	677.78 (*62.95)*	1610.51 (*133.19)*	680.05 (*63.02*)	1464.52 (*87.64)*
/i/ (Std dev.)	475.33 (*43.75)*	2440 (*295.12)*	374.31 (*53.55)*	2131.90 (*114.72)*
/u/ (Std dev.)	457.5 (*18.48)*	1230 (*145.66)*	446 (*62.09)*	942 (*138.05)*
/e/ (Std dev.)	567 (*79.25)*	1991.60 (*239.27)*	519.90 (*47.28)*	1807.22 (*129.33)*
/o/ (Std dev.)	550 (*66.52)*	1379.47 (*191.48)*	578.54 (*44.32)*	1206.88 (*146.81)*

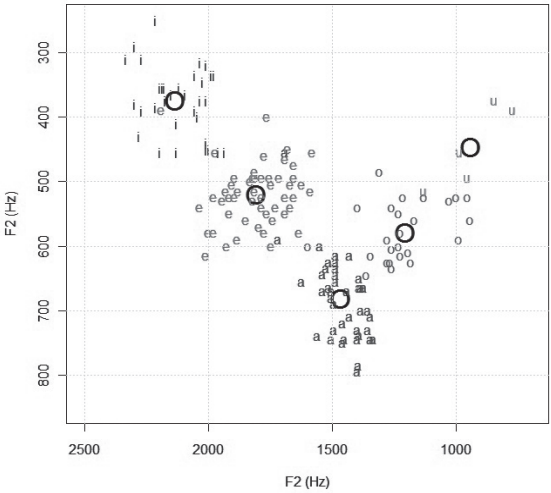

Figure 1: Raw F1/F2 values of a model L1 Spanish speaker; circles mark mean values for each phoneme.

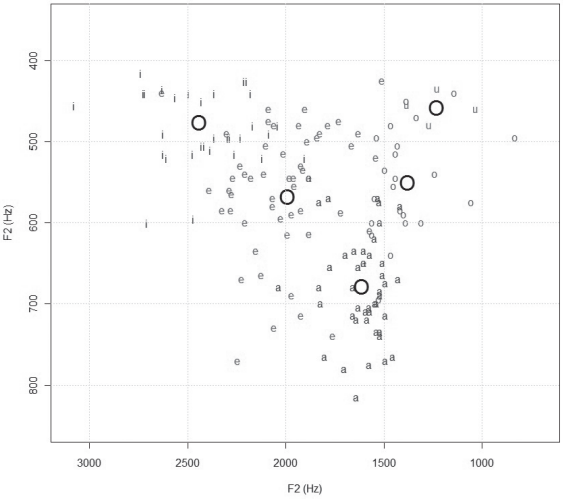

Figure 2: Raw F1/F2 values of an Australian L2 Spanish speaker; circles mark mean values for each phoneme.

The mean value of each vowel does not vary between stressed and unstressed environment for /a/, /e/, /i/ and /o/; there was insufficient data to test the difference for /u/. Although the mean values for both speakers (Figures 1 and 2) show the same relative distribution in the speaker's vowel space, the L2 vowels show a much larger variance than the L1 vowels. The standard deviations of each vowel are higher relative to the L1 vowels, such that not only do they exceed what one might expect the difference to be for the higher values of a woman's shorter vocal tract but overlap considerably between phonemes.

The L2 vowel variance tends towards the centre of the vowel space, rather than the periphery. There are two factors causing this trend. Firstly, schwa-like vowel allophones in unstressed syllables are in the very centre of the vowel space. This mirrors the schwas in Australian English unstressed syllables. Secondly, most vowel articulations are less peripheral in general in the raw data, regardless of whether they are stressed or unstressed.

4.2. Voice Onset Time (VOT)

There is very little difference between the two speakers when all of the VOT measurements for each speaker are considered together, without respect to their environments (Table 3). Unpaired T-tests showed no significant difference between the two groups for any of /p/ ($p = 0.86$), /t/ ($p = 0.76$) and /k/ ($p = 0.12$).

Table 3: Mean voice onset time measurements of model L1 and Australian L2 Spanish in different environments.

All m'ments in *msecs*	**All tokens**		**English aspiration**		**/s_/ env.**		**Unstressed non-initial**	
Speaker	Au	Sp	Au	Sp	Au	Sp	Au	Sp
/p/ (mean)	**20.62**	**20.14**	**25.5**	**18.14**	**13.75**	**24.75**	**16**	**18.8**
(StDev)	*7.03*	*7.00*	*5.01*	*6.34*	*2.63*	*9.54*	*3.94*	*1.20*
/t/ (mean)	**24.52**	**23.52**	**46.5**	**35.25**	**18.5**	**23**	**19.63**	**20.89**
(StDev)	*13.50*	*10.54*	*21.19*	*22.5*	*6.19*	*6.06*	*5.76*	*4.65*
/k/ (mean)	**35.54**	**30.46**	**40.6**	**32.2**	**N/A**	**N/A**	**32.38**	**29.38**
(StDev)	*9.02*	*7.33*	*7.44*	*9.09*	*N/A*	*N/A*	*8.85*	*6.44*

The VOT measurements of the L1 speaker are consistent across the three measured environment groups (word-initially and in a stressed syllable onset; following /s/; and all other environments) for each of /p/, /t/ and /k/. An ANOVA shows that the three groups are not significantly different for /p/ ($df = 2$, $p = 0.254$). A significant difference was shown for /t/ ($df = 2$, $p = 0.026$). A post-hoc comparison shows a significant difference in the English aspiration environment, due to the considerable size of the

standard deviation. No examples of /sk/ occur in the data; a t-test confirms that the two remaining groups do not show a significant difference (p = 0.52).

The L2 speaker's measurements, on the other hand, show more variation. The VOT in for /p/, /t/ and /k/ in stressed and initial position is much higher than in unstressed, non-initial position. The VOT following /s/, however, is lower than in unstressed non-initial position. Figure 3 compares the two groups of sounds. An ANOVA with a post-hoc Tukey pairwise comparison confirms that the three groups are significantly different for /p/ (df = 2, p = 0.001) and /t/ (df = 2, p = 0.000). No examples of /sk/ occur in the data; a t-test shows an insignificant difference (p = 0.11).

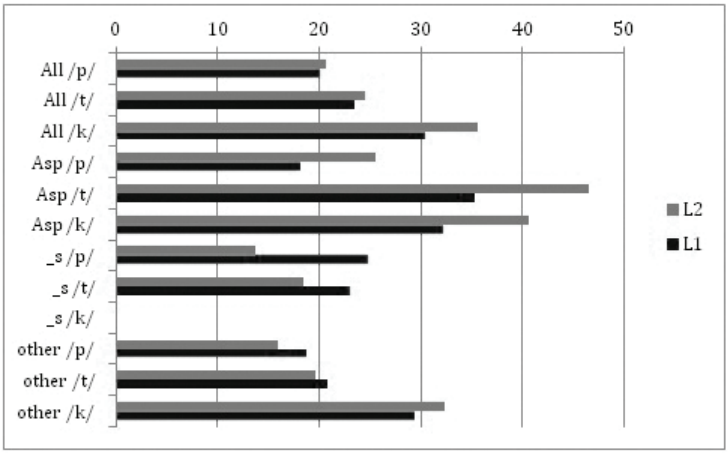

Figure 3: Comparison of mean VOT between Australian L2 speaker and L1 model speaker in different environments.

4.3. Other segmental differences

The L2 speaker showed several other segmental features that did not match the L1 speaker model, primarily in the approximant realisations of the phonemes /b/, /d/ and /g/ and the production of /r/ and /ɾ/, with regards to consonants. The typical approximant realisations of /b/, /d/ and /g/ ([β̞], [ð̞] and [ɣ̞]) occur several times as voiced stops ([b], [d] and [g]), or even voiceless stops in the L2 recordings. For example, the L2 speaker says [ˈʔablan] '*they speak*' (where [ˈaβlan] is expected), [heoˈkrafikas] '*geographic*' (where [xeoˈɣɾafikas] is expected), and [dɪvɜːsiˈdad] '*diversity*' (where [ðiβɛɾsiˈðaˠ] is expected).

The L2 speaker shows considerable difficulty with the realisation of the two rhotic phonemes, particularly the trill /r/. In several cases, tapped /ɾ/ appears only

through compensatory lengthening of the previous vowel or not at all, for example *arte* 'art' /arte/ as [ˈaːtæj], compared to the expected [ˈarte].

With regard to vowels, the L2 speaker showed frequent diphthongisation of the mid vowels /e/ and /o/ in word final position, visible in the example in figure 4. Where the L1 model had [sine] for /sine/ cinema, the L2 speaker had [sinɛj]; where the L1 model had [ʧoklo] for /ʧoklo/, the L2 speaker had [ʧʰoklow], etc.

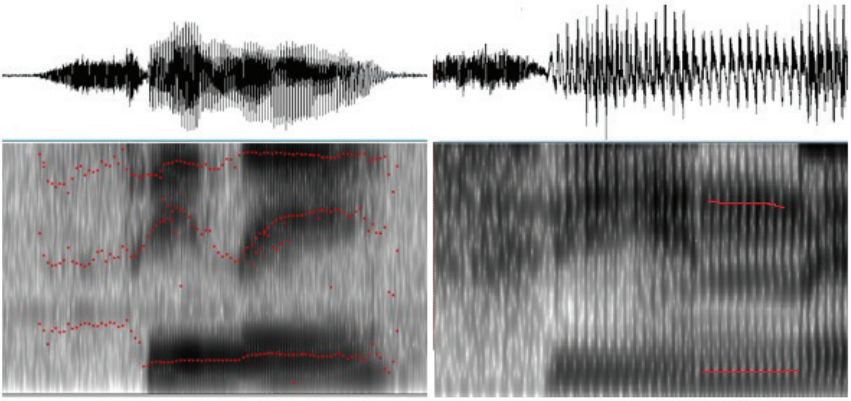

Figure 4: Diphthongisation of final mid-vowels in Australian L2 Spanish (right) compared to a native speaker model (left), in the example word /ˈsine/ 'film'.

The phonological diphthongs were also the source of a small difference. The closest Australian English phonemes to the Spanish /ai/ and /au/ sequences are /ɑe/ and /æɔ/ (where the allophones are typically similar realisations between [aɪ ~ ɑe] and [ɐʊ ~ æɔ]; see Cox 2012), though the broadest realisations are not found in the L2 recording.

The L2 recording shows one other major vowel difference. When the L2 speaker says /er/ and /ir/ sequences, on several occasions she says [ɜɹ] or [ɜː], for example [divɜˈxiðo] (diverged) and [ˈsɜɹven] (they serve) instead of [diverˈxiðo] and [ˈsirβen]. This corresponds to realisation of Australian English orthographic <er> and <ir>.

4.4. Prosody

The biggest prosodic difference between the speakers was not in intonation in itself but in liaison between words. In broad terms, the pitch rises and falls were similar in both recordings. However, even where words were pronounced well, segmentally speaking, the L2 speaker did not join words into larger intonation groups, which made her pronunciation seem less fluent. For example, where the L1 native speaker model says *carro, departamento y elote en México* /ˈkaro ðepartaˈmento i eˈlote en ˈmexiko/ 'car, apartment and corn in Mexico' as [ˈkaro ðepartaˈmento ʝeˈlotemːexiʝko],

the L2 speaker says [ˈkaɹow depa:taˈmɛntow ʔi ʔɛˈlɔtɛ emˈmɛhikow], separating several words, notably *y elote* 'and corn' that the L1 speaker pronounces as a single phonological word. On the other hand, the L2 speaker does join together *en* México 'in Mexico' in the same way as the L1 model, including the place assimilation of the syllable-coda nasal.

The native speaker model follows the expected resyllabification and liaison between words within an intonation phrase (see Gil Fernández 2007; Hualde 2005; Lahoz 2012; Rico 2012, among many others). The L2 speaker, on the other hand, uses shorter intonation words, leaving gaps between words that the native speaker model groups together. The short intonation phrases may be the result of the speaker's attempt to enunciate carefully and therefore may not represent her usual Spanish prosody. However, the smaller intonation phrases also suggest less confidence in producing longer fluid intonation phrases in careful speech.

The gaps are particularly noticeable in the L2 recording when the first segment before or after the word boundary is a vowel. When the gap precedes a vowel, the new intonation phrase starts with a clear glottal stop.

5. Discussion

Unsurprisingly, many of the differences between the L1 speaker model recording and the L2 speaker's recording resemble what would be expected of an American English L2 Spanish speaker. Although there are several phonetic differences between North American English varieties and Australian English, their consonant phonologies are mostly the same (see Cox 2012). The differences between North American English and Australian English surface primarily in vowels, and the presence or absence of the /r/ archiphoneme in syllable codas. These differences are likely the origin of differences between North American L2 Spanish and Australian L2 Spanish. Although these differences are not large, some of them will not be those that are targeted by pronunciation textbooks aimed at North American English speaking Spanish learners.

The differences between the L2 and L1 recordings can be divided into four larger groups:

1. Orthographic interference (e.g. the pronunciation of the internal <h> in 'hispanohablante' Spanish-speaking);
2. Those caused by phonological interference. They can be further divided into two smaller groups:
    a. Phonological awareness; that is, the speaker did not produce a difference between two phonemes in a particular environment (e.g. /d/ and /ɾ/ between vowels) or does not have a consistent surface realisation of the phoneme (e.g. /ɾ/ in a syllable coda); and
    b. Phonotactic interference; that is the differences in phonotactic (segment ordering) structures between Spanish and Australian English caused an unexpected phonological interpretation (e.g. pronunciation of /e/ as [ɜ] before /ɾ/);

3. Those caused by phonetic interference. They can also be divided into smaller groups:
   a. Those where the speaker has an awareness of the phonemes, but uses a different allophonic realisation of the phoneme to native speakers (e.g. pronunciation of /d/ as [d], rather than [d̪] or [ð]);
   b. Those caused by motor control (e.g. the L2 speaker's difficulty pronouncing /r/);
4. Differences in prosody.

Of these differences, the phonological differences are more likely to contribute to lessened comprehensibility compared to phonetic differences, given that the phonetic differences are still realisations of the phoneme. Prosodic and suprasegmental differences are just as likely to affect fluency ratings as segmental differences (Piske 2012).

The importance of these groups is in pedagogical approach. Drawing attention to the differences between phonemes is more likely to improve phonological awareness (Lord 2005; Luque 2012: 46, among many others) but may not translate in immediate phonetic accuracy. This is typically explained as progressing from developing perception and moving on to developing expressive competence (Gil Fernández 2007: 164-166; Mellado 2012). Many students can perceive and produce the difference between /t/, /d/ and /ɾ/, etc. but will not consistently produce the dental articulation of Spanish as they may be perceived as equal due to phonological 'deafness' in environments where the contrast is neutralised in L1 (see Llisterri 2003: 102; Mellado 2012: 15, among others). On the other hand, students who do not consistently produce the difference between /d/ and /ɾ/ between vowels (coronal tapping) may benefit from the feedback of reflective listening of their own recordings and demonstration of the contrast in that environment in order to differentiate both phonemes in the L2 (Lear 2013; Mellado 2012: 34).

Targeting the phonetic pronunciation of phonemes is effective for simple phonetic differences (e.g. dental articulation of coronal phonemes) but will not benefit students who do not have good knowledge of the phonemic contrast or do not yet have the ability to articulate their phonetic realisation (e.g. /r/). Without awareness of the contrast, phonetic instruction will result in inconsistent pronunciation. A student who is not completely aware of the difference between /todo/ and /toɾo/, who is instructed in the correct articulation of /d/ may still not have consistent pronunciation of /todo/ because they will still confuse it with /ɾ/.

Current research pinpoints that integration of segmental and suprasegmental knowledge and practice is essential for effective pronunciation (Derwing, Munro and Wiebe 1998; Gil Fernández 2007; Mellado 2012). Focussing only on segments or prosody will leave the other with lower improvement. Texts and teachers may only provide segmental instruction, without much (if any) prosody. Other, more communicative-focussed instruction might have a strong bias towards prosody. A

student with only segmental instruction may have less prosodic accuracy; in contrast, a student who has primarily prosodic instruction will have higher prosodic accuracy but be phonetically less accurate.

6. Conclusion

The differences that are presented here in this case study will benefit Spanish teachers in Australia by giving them potential targets for instruction. The case study forms part of a larger, on-going project that aims to improve Spanish pronunciation teaching in Australia. Targeted phonetic instruction will be more effective in the small amount of time that teachers are able to put aside than unfocussed pronunciation instruction. For students who already have a good understanding and consistent pronunciation of voiceless fricatives, instruction in their pronunciation will be unnecessary. Instead, a teacher can focus on areas that have already been identified as potentially difficult for Australian learners.

In many ways, the characteristics described here for Australian L2 Spanish overlap with US L2 Spanish. However, knowing this is useful because it demonstrates that there is some use in textbooks specifically targeted towards US learners of Spanish. Furthermore, it allows teachers to evaluate textbooks' contents for their relevance to the students they are teaching (Delicado Cantero and Steed 2013), and choose appropriate areas to focus on.

Acknowledgements

The authors would like to acknowledge and thank the participants in the LCNAU 2013 pronunciation pedagogy workshop for their feedback, comments and inspiration. They also thank the students who gave us permission to analyse their speech for their participation.

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