

CHAPTER 7

CONCLUSION

This chapter brings the present dissertation to an end by making a number of concluding remarks about the investigation that was undertaken to determine the effects of starting age of FL learning, exposure to the TL, dominant L1, and gender on Catalan and Spanish NSs' perception and production of English sounds in a formal learning context. Based on those conclusions, several implications for further research are subsequently outlined in the closing section of this dissertation.

7.1. Concluding remarks

The study of L2 phonological acquisition in formal learning contexts is to date more limited than research conducted in L2 naturalistic settings. In addition, the available findings of factors that lead to a native-like attainment of the TL phonology in strictly instructed-classroom learning contexts are mostly divergent.

Thus, the aim of the present dissertation was to contribute to the still incipient results on the learning of an FL phonology in formal learning settings by examining the perception and production of English sounds by Catalan and Spanish learners of English, who differed primarily on the basis of onset age of FL learning (8, 11, 14, 18+ years) and amount of formal exposure to English (200, 416, and 726 hours). Additionally, two more factors were contemplated in the present research: gender and L1 dominance (Catalan or Spanish dominant speakers, or Catalan/Spanish balanced bilinguals).

As pointed out in the Method chapter, subjects in this dissertation research were part of a larger research study on the role of starting age of FL learning in the acquisition of English in a formal learning context. For that matter, written and oral tasks were administered to all the subject population, of which only the auditory discrimination task and the imitation task were considered in the current dissertation.

As a brief summary, it should be recalled that the auditory discrimination task tested for subjects' perception of English vowel and consonant contrasts. Thirteen contrast pairs (out of a total of 20 pairs) were minimal pairs, which involved tense/lax vowel contrasts and consonant voicing contrasts in word-final position, among others. The imitation task assessed subjects' production of English segments in 34 one- or two-syllable words. Both tasks were delivered by a female taped model voice via tape recorder. Subjects' performance was always recorded on school premises, which very often added an undesirable amount of background noise to the recordings. Among the various consequences of the presence of noise in the recordings, it is worth noting that acoustic analyses of learners' production of English segments were discarded in this dissertation. Instead, two additional studies – Study 1 and Study 2 – were undertaken to better characterise subjects' production of English sounds as a function of the four research variables. As pointed out in Chapter 5, the two experiments involved having English NS listeners rate subjects' segmental production in English for perceived degree of FA. In the case of Study 1, listeners also rated entire words for degree of global FA, while in Study 2 judges were asked to identify subjects' production of seven English vowels in a forced-choice vowel identification task.

The results obtained on the auditory discrimination task and the imitation task (Study 1 and Study 2) were then analysed and reported in Chapter 5. Thus, these results concerning the main findings of the factors of onset age of FL learning, exposure to the FL, dominant L1, and gender in FL learners' perception and production of English sounds in an instructed-classroom learning environment were interpreted in light of previous research in Chapter 6.

Based on all of the above, a number of conclusions about factors influencing FL phonological acquisition in a formal instruction setting can be drawn. These concluding remarks are arranged according to the four research questions that motivated the present dissertation, as follows.

Research Question 1:

Will an earlier starting age of FL learning result in learners' more native-like perception and production of TL sounds in a formal instruction setting?

In answer to the first research question, two main concluding remarks can be made, concerning perception, on the one hand, and production, on the other hand.

As regards perception, an early starting age of FL learning – i.e. 8 years – led to somewhat more accurate TL sound perception in a formal learning context in the long-term of the present study (i.e. 726 hours of formal instruction in English), as opposed to a late starting age of FL learning – i.e., 11, 14, and 18+ years. Moreover, not only did this study demonstrate an early starting age advantage in the perception of FL sounds in the long-term, but it also confirmed previous findings of a late starting age advantage in the initial stages of L2 learning (Snow & Hoefnagel-Höhle, 1977/1982, 1978/1982); hence, extending starting age effects noted in L2 naturalistic settings (e.g. Krashen et al, 1982) to FL formal instruction contexts.

As for production, starting age of FL learning failed to be a conclusive determinant for attaining a more native-like production of English sounds, even contradicting the starting age effects reported for English sound perception. Therefore, while both in the short-term and mid-term (i.e. 200 and 416 hours of exposure to the FL, respectively) 8-year-old beginners were rated as having produced English words and segments as less foreign-accented, in the long-term 11-year-old starters' production of English words and segments was judged to be less foreign-accented. In addition, a late starting age advantage in the short-term and mid-term was observed for the intended vowel productions, whereas in the long-term no age group produced English vowels as intended at consistently higher rates.

It should be further noted that, regardless of any existing (or non-existent) early or late starting age advantage, in the long-term no learner group perceived or produced English sounds at native-like levels. This, in turn, corroborated the hypotheses of speech perception models such as the SLM, which predicts L2 learners' difficulty in attaining native-like phonological skills in the TL after the establishment of L1 phonetic categories.

Research Question 2:

Will FL learners perceive and produce English segments in a more native-like fashion as a function of exposure to the FL?

In the present dissertation, exposure to the FL failed to be a conclusive determinant for more accurate perception and production of English sounds, which was in line with findings of research conducted in formal learning contexts (García Lecumberri & Gallardo, 2003). In addition, after 7.5 years of exposure no learner group was found to perceive or produce English sounds at native-like levels. Thus, despite the mixed exposure effects observed for 8- and 11-year-old beginners' performance in the TL phonology and the more beneficial exposure effects on adults' performance, it can be concluded that an average of 7.5 years (or 726 hours) of formal instruction in English does not suffice either to perceive or produce English sounds at native-like levels in an instructed-classroom learning environment. This concluding remark about the failure to perceive and produce English sounds accurately after 7.5 years of formal exposure might be further supported if learners have been exposed to NNS input, rather than to English native-produced input, as was likely to have been the case of Spanish/Catalan learners of English in this study.

Research Question 3:

Will the phonetic features of the learners' L1(s) have any beneficial effect on English sound perception and production?

Findings concerning English sound perception and production by Catalan dominant speakers, Spanish dominant speakers, and Catalan/Spanish balanced bilinguals led to the conclusion that FL learners' dominant L1 or L1s had no effect on a more native-like performance in English phonology. As suggested above, the fact that all subjects were familiar with and exposed to both Spanish and Catalan on a daily basis might have overridden any hypothetical advantage on the part of Catalan dominant speakers (e.g. Coe, 1987). Moreover, most of the TL sounds under investigation in both the auditory discrimination task – specifically, the tense/lax vowel contrast /i/-ɪ/, and

consonant voicing in word-final position /t-/d/, /p-/b/, and /s-/z/ – and in the imitation task – e.g. /d/ (Study 1), /ɪ/, /æ/, and /ʌ/ (Study 2) – were originally thought to pose the same degree of difficulty for the three language dominance groups. Besides, the actual difficulty learners displayed in perceiving and producing these English sounds accurately further corroborated previous findings of Spanish and Catalan learners of English in both L2 immersion and formal learning contexts.

Research Question 4:

Will gender differences show up in the perception and production of English sounds?

The popular observation that female subjects are better language learners – or, in this case, somewhat better language imitators – than male subjects found support in the present study when production of English segments was considered in the short-, mid-, and long-term. Even in the absence of significant differences, female subjects were always judged to have produced English segments and words as less foreign-accented than did male subjects. Likewise, the vowel identification scores they obtained were always higher than those of male participants. On the contrary, gender differences were not so clear-cut in the perception of English sounds. All in all, these mixed results are in line with previous inconclusive gender effects.

In sum, it can be concluded that in an instructed-classroom learning setting an early starting age of FL learning (i.e. 8 years) as opposed to a late starting age (i.e. 11, 14, 18+ years) will result in Spanish and Catalan NSs' somewhat more accurate perception of English sounds in the long-term. However, the effect of starting age of FL learning on the production of English sounds is still inconclusive based on the data here examined. So is the effect of exposure to the FL on both English sound perception and production in the long-term. By contrast, a rather firm conclusion can be drawn regarding L1 effects. More precisely, L1 dominance in either Spanish or Catalan does not influence English sound perception and production in a distinct manner. Finally, in a formal learning environment

female superiority emerges in the production (imitation) of English sounds, but not in their perception.

A word of caution is necessary with regard to the concluding remarks about onset age of FL learning and exposure effects on the acquisition of FL phonology in a formal instruction context. Firstly, the subjects examined in this dissertation were either in the initial or in the middle stages of FL learning (as compared to final or ultimate stages of FL learning). So, more conclusive starting age effects would be expected to be observed, especially for English sound production, by looking at learners who have reached their ultimate attainment in the TL. Despite this shortcoming, the starting age effects observed in the short-, mid-, and long-term of the current dissertation research provide invaluable evidence for characterising rate of acquisition of TL segmental perception and production by Catalan and Spanish NSs in a formal instruction learning context.

Secondly, the mixed exposure effects reported, together with the finding of a failure to perceive or produce English segments at native-like levels in the long-term, might be in part attributed to NNS (or foreign-accented) input that learners had been most likely exposed to, as suggested earlier (see also García Lecumberri & Gallardo, 2003). Yet another possibility might have to do with the lack of or insufficient explicit phonetic instruction delivered in classroom settings. That is, in studies where an increase in formal instruction has proven to be beneficial in attaining more accurate perception and production skills in the TL, instruction was delivered in the form of explicit phonetic instruction. This is particularly evident in formal learning contexts (e.g. Bongaerts et al., 1997; Cebrian, 2003; García Lecumberri, 1999; Rallo, 1999, 2005).

All of the above limitations, in conjunction with task and noise effects, are further developed in the following section.

7.2. Implications for further research

Based on the several inconclusive findings of the present dissertation, this last section outlines a number of issues that might be considered if further research is to be undertaken to better ascertain the influence that the factors of starting age and exposure might exert on the acquisition of the TL phonology in a formal instruction learning setting.

Firstly, in order to determine the effects of starting age of FL learning on the attainment of perception and production skills in English by learners who have reached their ultimate attainment should be examined. Moreover, in the present dissertation the performance of 14-year-old and adult beginners in the long-term could not be fully assessed due to the limited number of subjects comprising those groups. Therefore, in order to determine the effects of starting age in the long-term in comparison to 8- and 11-year-old beginners, future research should aim at obtaining larger group sizes of 14-year-old and adult beginners. However, it should be mentioned that this might prove very difficult, given the scarcity of subjects who fulfil the condition of no extra exposure to the FL outside the school setting.

When attempting to assess the effects of formal exposure to the TL on learners' perception and production of English sounds, it would be desirable to collect data on the input models FL learners have been exposed to, namely school teachers of English. However, this might not be an easy objective to fulfil as García Lecumberri and Gallardo (2003) indicate,

In order to ascertain the relative weight of teachers' influence compared with other factors such as spelling, cognitive strategies, NL influence, etc., the English which our subjects are receiving as input needs to be analysed. However, for obvious reasons, this can be quite a sensitive issue, which we have not been able to address yet. (p. 129)

An important pedagogical implication can also be drawn from the findings of the present study. Based on the hypothesis that the input delivered in Spanish/Catalan classroom settings is often foreign-accented, in addition to the fact that exposure to the TL in this type of setting is limited in nature, an effort should be made to maximise the a priori hypothetical beneficial effects of larger amounts of exposure to the FL on the attainment of the TL phonology at more accurate rates. It is hereby suggested that a change in teaching practices in the English classroom in the form of phonetic instruction should favour FL phonological acquisition. For instance, García Lecumberri and Cenoz (1998) point out that Spanish NSs might discern and produce English tense/lax vowel contrasts more accurately if they are drawn to the spectral differences involved in such contrast, rather than focusing on temporal cues. Along the same lines, Rallo (2005) states that "auditive discrimination tasks and oral repetition tasks should be an integral part in foreign language teaching" (p. 140). She goes on to suggest how three types of tasks used in analysing subjects with speech disorders – namely perceptual training, production

skills practice and establishment – might be adapted to the teaching of pronunciation of difficult TL sounds.

Taking one of Rallo's (2005) task proposals for pronunciation teaching further into consideration, and in agreement with recent claims in L2 phonological acquisition research, future investigations should aim to implement phonetic training experiments in the classroom and to assess both the short-term and long-term effects of training on FL learners' performance in the TL phonology.

In the discussion of starting age effects on FL learners' perception and production of English sounds (Sections 6.1.1 and 6.1.2), it was suggested that the auditory discrimination and imitation tasks that the subjects performed might have influenced the results to a certain extent. In the first place, different auditory discrimination tasks (or different blocks within the same task) should be administered to examine the perception of English vowels, on the one hand, and that of English consonants, on the other hand. By the same token, a greater number of instances for each sound contrast of interest should be included in each block, so that the taxonomy of perceptual degrees of difficulty in discerning English sound contrasts outlined for Spanish and Catalan NSs' in Section 5.1.5 is more conclusive. In relation to this, sound contrasts involving low back and mid central vowels, which have often been overlooked in L2 phonological acquisition research, should be further studied.

As for the imitation task, in order to avoid any possible short-term phonological memory effects on subjects' production of English segments, a delayed repetition technique such as the one suggested by Piske et al. (2001) might be more suitable to examine FL learners' TL segmental production in future research. Moreover, in accordance with some observations (e.g. Tench, 1996), learners' production of extemporaneous speech in English should be also analysed in order to better typify subjects' acquisition of TL sounds in a formal instruction learning environment. In that respect, the subjects in the present dissertation were also asked to carry out a semi-guided oral interview in English, as well as retelling a story based on six vignettes and role playing two situations in pairs. Thus, data on these tasks could be analysed in the future in an effort to determine the effects of the research variables on learners' production of rather extemporaneous speech in English.

Subsequent research on Spanish and Catalan learners of English in a formal learning context should aim to obtain higher quality recordings, especially when testing is conducted on school premises. As noted earlier, a considerable amount of background

noise was present in the recordings, which up to a point appeared to have an effect on English NS listeners' assessment of FL learners' sound productions for degree of FA. Besides, high quality recordings would allow for acoustic measurements of target sounds, which might in turn prove useful for solving instances of low inter-rater agreement. Even then, it should be mentioned that the apparent noise effects were successfully minimised (in the design and implementation of Study 2), considering that noise was not originally conceived as a research variable in the current dissertation.

Finally, further research on the factors of onset age of FL, exposure to English, dominant L1, and gender in the phonological acquisition of English as an FL in an instructed-classroom learning environment should follow a longitudinal design. This last implication is consistent with researchers' continued call for the implementation of longitudinal studies as the ultimate way to assess the influence of the various factors on SLA (e.g. Flege, 2003; Singleton & Ryan, 2004).

