Exploring the roles of instruction and word familiarity in L2 vowel identification

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1 Introduction

Foreign language (FL) learners in an instructional setting are faced with the difficult task of learning the sound structure of the target language in a context with limited exposure to the target language and often with exposure to non-native input. As a consequence, studies exploring the effect of amount of exposure on FL phonology acquisition tend to report at most small gains in FL perception and production abilities, particularly when exposure is limited to a few hours a week in the foreign language classroom (e.g., Mora and Fullana, 2007; Mora, 2009). Mora (2009) reports no significant improvement in the perception and the production of L2 English by Catalan/Spanish bilinguals that were tested over a period of two years of language instruction. Better results have been obtained in studies exploring the effect of phonetic, and especially auditory, training (Catford & Pisoni, 1970; Logan & Pruitt, 1995; Iverson & Evans, 2007; Aliaga-García, 2007; Aliaga-García & Mora, 2008, among others), pointing to the greater relevance of this factor in FL acquisition and to the importance of specialized instruction and phonetic training in foreign language teaching.

Another factor that has been found to interact with performance in FL speech is word familiarity. For example, Yamada et al. (1992) observed a significant positive correlation between lexical familiarity ratings and the percentage of correct identifications of English /r/ and /l/ tokens by Japanese learners of English. Similarly, Flege et al. (1996) found that both experienced and inexperienced Japanese learners of English were more successful at identifying /r/ and /l/ in familiar words, or minimal pairs that contained familiar words, than in unfamiliar cases.

This paper presents the results of a preliminary study investigating the effect of specialised instruction and word familiarity, where familiar is understood as previously practiced, on the identification of English vowels by Spanish/Catalan bilinguals learning English in their home country. Although no specific training method was evaluated in this study, the students' performance was tested at the beginning and at the end of a specialised course on English phonetics and phonology which included practice sessions and incorporated self-training auditory materials. The participants were tested on their ability to perceive the English vowels /i, ɪ, u, ʊ, æ, ɑ, ʌ / (as in 'heed,' 'hid,' 'who'd,' 'hood,' 'had,' 'hard,' and 'hut', respectively), and specifically the ability to distinguish the /i/-/ɪ/, /u/-/ʊ/, /æ/-/ɑ/, /ʌ/-/æ/ and /ɑ/-/ʌ/ vowel contrasts. These vowel contrasts have been identified as problematic for Catalan/Spanish learners of English in previous studies (Cebrian, 2006, 2008; Mora, 2007; Mora & Fullana, 2007).

2 Methodology

2.1 Participants. Participants were second-year university students majoring in English enrolled in a course on English phonetics and phonology which provided an in-depth description of the English sound system and included two two-hour practice sessions per month. The practice sessions consisted of phonetic dictations and transcription practice, pronunciation practice, reading practice with transcribed and orthographic texts, and sound discrimination exercises, among other things. The course lasted one academic

year. The students' mean age was 20. The number of participants varied from task to task, ranging from 21 to 44 (see below).

2.2 Procedure. At the beginning of the course (Time 1), 44 students performed an AXB vowel discrimination task and a contextualized minimal pair vowel identification task involving the English /i/-/ɪ/, /u/-/ʊ/, /æ/-/ɑ/, /ʌ/-/æ/ and /ɑ/-/ʌ/ contrasts. In the AXB task, stimuli consisted of monosyllabic words (e.g., 'sheep' – 'ship' – 'ship'). Participants circled Word 1 or Word 3 on an answer sheet depending on whether X sounded like A or like B, respectively. In the contextualized minimal pair (CMP) identification task, participants heard a sentence that included one member of a minimal pair and selected the option on the answering sheet that matched what they heard. Table 1 provides an example. Stimuli were slightly modified versions of the soundfiles accompanying one of the courses' recommended class materials (Baker, 2006) and represented standard British English pronunciation.

Stimulus	*It says pull on this door.*
Response alternatives	*It says* ***pool*** */* ***pull*** *on this door.*

Table 1. Example of trial in the CMP task.

In the second half of the course the students were assigned as homework a series of listening exercises involving the sentences used in the CMP task at Time 1. The soundfiles were made available to the students on the course's website and homework was corrected to provide students with feedback and with the key for further practice. Not all students carried out the practice homework. Toward the end of the term (Time 2), students performed another CMP task. At this time, the task included sentences that contained the same words as those used at Time 1 and in the homework listening exercises (i.e. "old words") as well as a set of new sentences involving new minimal pairs ("new words"). 26 students completed the tasks at both times. Their results are presented in section 3.

3 Results

Participants obtained very high scores in the discrimination task (>95% correct), which indicates they had very little difficulty telling the members of the minimal pairs apart when the words were presented out of context and next to one another. This was true for all the vowel contrasts tested. With respect to the CMP tasks, three measures were explored and are reported here: a) the difference in scores in the CMP tasks between Time 1 and Time 2; b) the difference in scores at Time 2 between students who carried out the practice CMP tasks assigned as homework and those who did not; and c) the difference in scores for "old" (i.e., words tested at Time 1 and reviewed in the homework tasks) vs. "new" words introduced at Time 2. The results for these three measures are provided in Figures 1, 2 and 3, respectively.

Although there was a slight overall numerical improvement from Time 1 to Time 2 (66% vs. 73% correct), there was a fair amount of inter-participant variability, as shown in Figure 1. As illustrated in Figure 2, students who reported practising with the homework CMP task outperformed those who did not, indicating a stronger effect of practice with the materials at a specific point in time than of on-going instruction. This effect of practice was noted for all vowels except /ɑ/. Finally, as shown in Figure 3, globally there was very little difference between the results for "old" and "new" words, but numerical differences appeared when each vowel was analyzed separately. However, the differences were not systematic as for some vowels (/u, ʊ, ɑ/)identification scores were higher with "old" words, while for other vowels (/æ, ʌ/)performance was slightly better

with the new words. It is possible that factors other than intrinsic vowel difficulty may have affected the results, such as the fact that all words were comparably frequent and presumably equally known to the students, or methodological issues such as the somewhat limited number of test words (two minimal pairs per vowel per condition) or differences related to the sentences in which the words were presented.

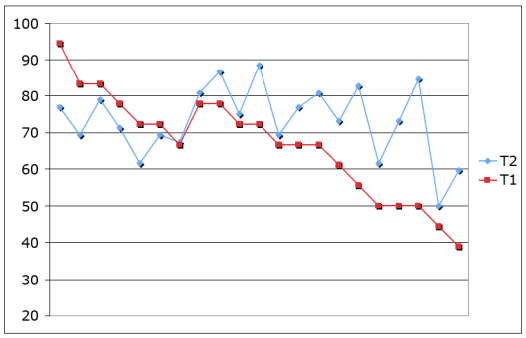

Figure 1. Percentage correct scores in the CMP task at Times 1 and 2 (T1, T2), per participant.

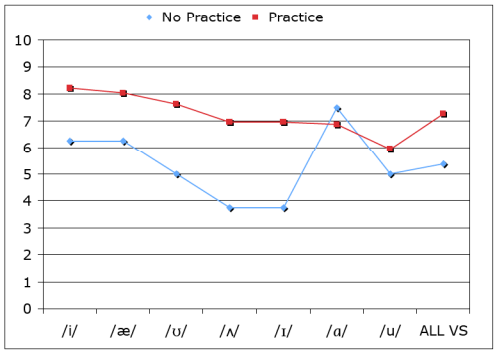

Figure 2. Percentage correct scores in the CMP task at Time 2. Comparison between 'practice group' and 'no-practice group', arranged by vowel.

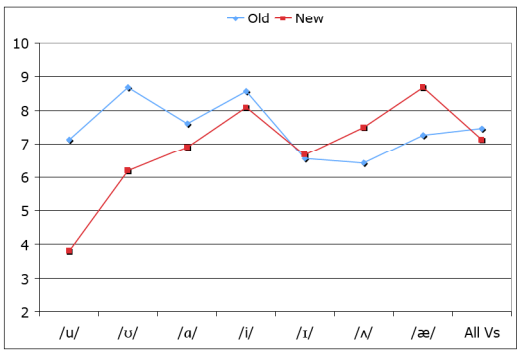

Figure 3. Percentage correct scores in the CMP task at Time 2. Comparison between scores for "old" words vs. "new" words, arranged by vowel.

4 Discussion and conclusions

The goal of this study was to investigate the effect of specialised instruction on students' ability to perceive English vowels correctly, that is, whether students would be better at identifying English vowels as a result of taking a course in English phonetics that included a thorough description of the English vowel system as well as regular pronunciation practice. In addition, the effects of amount of practice with task materials and of "familiarity" with test words were also explored by contrasting the results for students who reportedly practiced with task-related materials prior to the second testing time and by comparing the results for previously presented and newly presented word pairs. The results for the two testing times showed an overall improvement, but arguably very small, in line with previous studies on FL learning in instructional settings (i.e., Mora, 2009). The results also illustrated individual differences in the extent to which students were affected by what they learned and practised throughout the course. In fact, the difference in results between students who reportedly carried out the practice tasks and those who did not point to a greater effectiveness of specific and task-related training than of on-going specialised instruction and general pronunciation practice. Although the effect of old vs. new word varied as a function of vowel, due to methodological limitations it is difficult to evaluate if this is the result of real differences in level of difficulty. The

results of this study are preliminary given that only a limited number of students completed all the different tasks (Times 1 and 2 and homework practice tasks), and that some variables could have been more carefully controlled, such as the amount of individual practice with the homework tasks. Nevertheless, they indicate a potential positive effect of specialised practice and point to need for further studies exploring the effects of training in FL learning and of word familiarity. Finally, with respect to students' impressions, all participants reported finding the contextualized minimal pairs activities helpful and indicated their usefulness in phonetics and pronunciation courses.

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