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FOREIGN ACCENT PERCEPTION IN L2 SPANISH: THE ROLE OF PROFICIENCY AND L2 EXPERIENCE

Elena Schoonmaker-Gates, Elon University, North Carolina

Previous research on the perception of foreign accent by nonnative listeners generally focused on the perception of very few highly proficient individuals and ESL learners, while fewer studies have reported on the perception of foreign accent by classroom language learners. The present study investigates the effects of grammatical proficiency, study abroad experience, and pronunciation instruction experience on the perception of degree of foreign accent by 160 nonnative listeners who were primarily classroom learners of Spanish. The results show that nonnative listeners' ratings of foreign accent in Spanish varied as a result of proficiency, study abroad, and pronunciation instruction. This line of research is relevant to language teaching because it examines what nonnative listeners at different stages of development perceive as foreign-accented.

INTRODUCTION

The study of the perception of foreign accent has traditionally referred to native speakers listening to nonnative speech and using a scale to report the degree of foreign accent they hear (Albrechtensen, Henriksen, & Faerch, 1980; Anderson-Hsieh, Johnson & Koehler, 1992; Derwing & Munro, 1997; Flege & Fletcher, 1992; Piper & Casin, 1988; Southwood & Flege, 1999; Thompson, 1991). Only a handful of studies have included nonnative listeners among their participants, and in most the listeners were either highly proficient learners (Elliott, 1995; Fayer & Krazinski, 1987; Olson & Samuels, 1973) or ESL learners living in the target-language environment (Flege, 1988; Munro, Derwing, & Morton, 2006; Scovel, 1988). A few studies have examined the perception of less proficient classroom learners (Major, 2007; Neufeld, 1980), though further research is necessary to confirm the effects of proficiency and L2 experience on nonnative classroom learners' perception of degree of foreign accent.

Although nonnative listeners have been mostly overlooked in the previous research, examining their perception is crucial because it can reveal perceptual tendencies that teachers and students should be aware of. This line of research is especially relevant for language teachers who are nonnative speakers themselves because it sheds light on differences between their own perception and the perception of their students. If teachers are made aware of these differences it will help them understand what their students hear, which will allow them to provide more effective instruction and feedback in their classes. The importance of perception as a tool for language teaching has been attested by Baker and Trofimovich (2006) and is present in current models of cross-language perception and production like the Speech Learning Model (Flege, 1995; 2003), which stresses the potential relationship between target-like perception and production in the L2.

Several studies of nonnative listeners indicate that experience with the L2 affects listeners' perception of foreign accent. Flege (1988) investigated the effects of length of residence on the perception of degree of foreign accent by native English listeners and ESL learners. In this study, talkers were 37 NSs of Mandarin and Taiwanese learning English and 10 NSs of English. Listeners heard native and nonnative speech and were asked to estimate the degree of foreign

accent of each sentence by moving a lever on a continuum that ranged from ‘no foreign accent’ to ‘strong foreign accent’. Results showed that the nonnative listener group that had lived in the U.S. for five years or more distinguished more between native and nonnative speech in their ratings than listeners who had lived in the U.S. for less than 1 year.

In another study, Major (2007) measured the effects of target language familiarity on foreign accent perception in Portuguese. In this study listeners were NSs of Portuguese and nonnative listeners with or without experience studying Portuguese or traveling to Brazil. Listeners heard native and nonnative Portuguese and rated the speech on a 9-point scale of accentedness. The findings showed that NSs of English who were familiar with Portuguese distinguished more between the native and nonnative speech in their ratings than those without any Portuguese experience. In both Flege (1988) and Major (2007), the more experienced nonnative listeners’ ratings were also more native-like in their ratings than the less experienced listeners. Taken together, these results suggest that ESL learners with more L2 experience and nonnative listeners with greater L2 familiarity rate native speech as more authentic and nonnative speech as more foreign-accented than those with less experience. Elaborating on the work of Major (2007), the present study will investigate the effects of two specific types of experience on nonnative listeners’ foreign accent perception: duration of study abroad experience and pronunciation instruction experience.

Other investigations of nonnative listeners suggest that nonnative listeners’ perception of foreign accent varies with their L2 proficiency. Neufeld (1980) studied the accent detection ability of English speakers with elementary and advanced oral skills in French. Listeners heard recorded passages spoken by native and nonnative speakers of French and were asked to determine whether the speaker was francophone or not francophone. The results revealed that the more proficient nonnative listeners were significantly better at detecting nonnative accents than the less proficient listeners. Although these findings are limited by the fact that oral proficiency was not assessed with any kind of objective test, these findings indicate that nonnative listeners’ accent detection may vary as a result of L2 oral proficiency.

Scovel (1988) also investigated the effects of nonnative listeners’ proficiency on their accent detection ability, using ESL learners’ listening and written test scores as a measure of proficiency. Participants were native English listeners and ESL students from a variety of backgrounds, enrolled in English classes in the U.S. Listeners heard sentences pronounced by native and nonnative speakers of American English and were asked the question “Does the speaker sound like an American?” Results showed a correlation between nonnative listeners’ listening and written test scores and their ability to detect native and nonnative American accents accurately. Although this study found results similar to those that Neufeld (1980) found for the effects of oral proficiency, neither examined the effects of grammatical proficiency on listeners’ scalar ratings of foreign accent.

The present study adds to the previous work on nonnative listener perception by extending the findings from Scovel (1988) on accent detection by ESL learners to classroom language learners rating specific degree of foreign accent. Although both previous studies found more proficient nonnative listeners to be better at detecting the presence or absence of foreign accent, it is unclear whether more advanced learners also assess degree of foreign accent differently from less proficient individuals. If this were the case then it would indicate perceptual differences that might arise from (lack of) attention to cues and awareness of cross-language differences that

should be further explored. These differences would also be especially relevant to pedagogy and how perception affects language learners' accent production.

In sum, the previous findings from studies that examined the effects of proficiency and L2 experience on nonnative listeners' accent perception suggest that nonnative listeners' who are more proficient are better at detecting foreign accents and that those with more L2 experience distinguish more between native and nonnative speech in their ratings of foreign accent. The present study adds to previous literature by investigating the effects of proficiency on learners' perception of specific degree of foreign accent and by examining the effects of two specific measures of experience on foreign accent perception: study abroad and pronunciation instruction experience.

METHOD

Talkers

The talkers in this study were 2 female native speakers of Spanish from central Spain and 2 female nonnative speakers whose L1 was English. The nonnative speakers were enrolled in intermediate-level Spanish courses in a large Midwestern university in the United States. Both nonnative speakers were rated as having moderate to heavy accents in Spanish by listeners in this study when rated alongside the native speakers and 11 distracter speakers. To encourage listeners to use the full range of the rating scale and to avoid polarization of native and nonnative speaker ratings at opposite ends of the scale, ten of the distracter speakers were L1 English speakers learning Spanish with varying degrees of accent. Listeners' ratings of distracter voices were not analyzed as part of the present study.

Stimuli

Stimuli in this study were 5 practice sentences and 5 experimental sentences, each containing between 7 and 11 syllables. The practice sentences were used in a warm-up activity that was designed to familiarize listeners with the task and the rating scale as well as the range of accents they would hear during the perception activity. All 10 sentences were spoken by the 15 talkers who were recorded in a sound-proof booth using a head-mounted Shure microphone and Cool Edit software. The experimental sentences with their English translation are:

1. Él come pavo en su piso. / <i>He eats turkey in his apartment.</i>
2. A ti te doy el queso. / <i>I give you the cheese.</i>
3. Él puso una flor en tu pelo. / <i>He put a flower in your hair.</i>
4. Yo tomé un taxi en Cuba. / <i>I took a taxi in Cuba.</i>
5. Él se quiso casar en el polo sur. / <i>He wanted to get married in the south pole.</i>

The stimuli were presented to listeners in pseudo-random order to avoid same-voice repetitions using Praat (Boersma, 2001). Listeners heard and rated the degree of foreign accent of 210 sentences, though 70 were sentences pronounced by distracter voices and 120 were sentences that had been digitally manipulated for analysis as part of a different study. Of interest in the present study are listeners' ratings of the 20 sentences pronounced by the 2 native and 2 nonnative test voices.

Listeners

Listeners in this study were 160 nonnative speakers of Spanish whose L1 was English. Bilingual individuals and those reporting native languages other than English were not included. The nonnative listeners were undergraduate university students enrolled in 4 different levels of Spanish at the time they participated in this study. Forty nonnative listeners from each enrollment level participated. Nonnative listeners completed a grammar test that consisted of 12 multiple-choice items contextualized in a Spanish paragraph used to determine their grammatical proficiency score. As part of the background questionnaire nonnative listeners reported the location, duration (in months), and dates of all study abroad experiences in Spanish-speaking countries. Nonnative listeners' study abroad scores, the number of months each had spent living and studying abroad, ranged from 0 to 24 months, though 114 had never been abroad and only 6 reported spending more than 6 months in Spanish-speaking countries.

On the questionnaire nonnative listeners were also asked to report the number of past and present Spanish instructors who had taught them about Spanish pronunciation and corrected their pronunciation in class. Listeners' pronunciation instruction scores, the number of total instructors they reported who had taught pronunciation, ranged from 0 to 14, though only 13 learners reported more than 7 instructors who taught Spanish pronunciation. Nonnative listeners' mean grammatical proficiency scores, study abroad experience scores, and pronunciation instruction experience scores for each enrollment level are shown in Table 1.

Table 1

Nonnative listeners' mean grammatical proficiency, study abroad, and pronunciation instruction scores by course enrollment

Course enrollment level	Mean grammatical proficiency score	Mean study abroad duration	Mean # of pronunciation instructors
Level 1 (low-intermediate)	4.6	0.02	2.76
Level 2 (intermediate)	6.7	1.02	3.57
Level 3 (high-intermediate)	7.3	1.25	4.55
Level 4 (low-advanced)	8.9	2.42	4.50

Procedure

Listeners completed the 23-item activity and the perceptual task at individual computers in a quiet language laboratory. Each listener was provided a pair of high-quality headphones and was encouraged to take breaks when necessary and to work at their own pace. Participants heard one of the 5 experimental sentences spoken by either one of the 4 native and nonnative speakers or by a distracter speaker. They were given the opportunity to repeat each sentence once before answering the question "How close to native Spanish is the pronunciation of the sentence?" using a 9-point scale that ranged from 'closer to native Spanish' (1) to 'less close to native Spanish' (9). Once participants had made their selection and selected 'OK' they heard the next experimental sentence. After finishing the perception activity listeners completed the background questionnaire and the grammar test.

RESULTS

In order to determine whether grammatical proficiency was a predictor of listener foreign accent ratings, a mixed model ANOVA was performed with native and nonnative speech ratings as the dependent variable and grammatical proficiency score as a fixed covariate. The ANOVA revealed a significant effect of proficiency for both native speech ratings $F(1, 158) = 4.68$, $p < 0.05$ and nonnative speech ratings $F(1, 158) = 11.35$, $p < 0.05$.

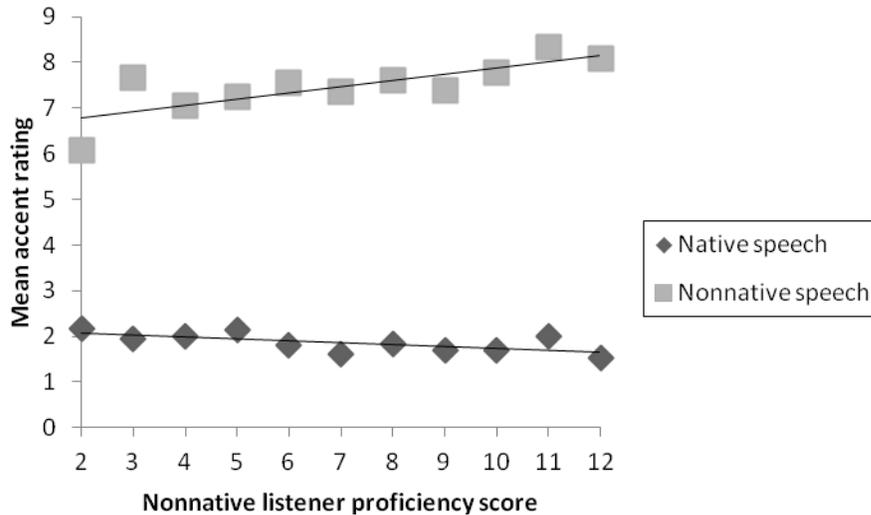


Figure 1. Nonnative listener ratings of native and nonnative speech by proficiency score.

The mean ratings of native and nonnative speech are presented in Figure 1, which also shows the significant linear trend that emerged. With higher proficiency listeners distinguished more between native and nonnative speech in their ratings, rating the pronunciation of nonnative speech as less close to native and the pronunciation of native speech as closer to native than those with lower proficiency did.

In addressing the potential effects of study abroad experience on nonnative listeners' ratings of foreign accent, another mixed model ANOVA was performed with ratings as the dependent variable and listeners' study abroad score as a fixed covariate. This analysis revealed a significant effect of study abroad for nonnative listeners' ratings of nonnative speech $F(1, 158) = 14.43$, $p < 0.05$. The linear trend, shown in Figure 2, demonstrates how those with more study abroad experience rated nonnative speech as less close to native than those with less experience abroad did. Put differently, these individuals rated the nonnative speech more harshly than those with limited or no experience with study abroad.

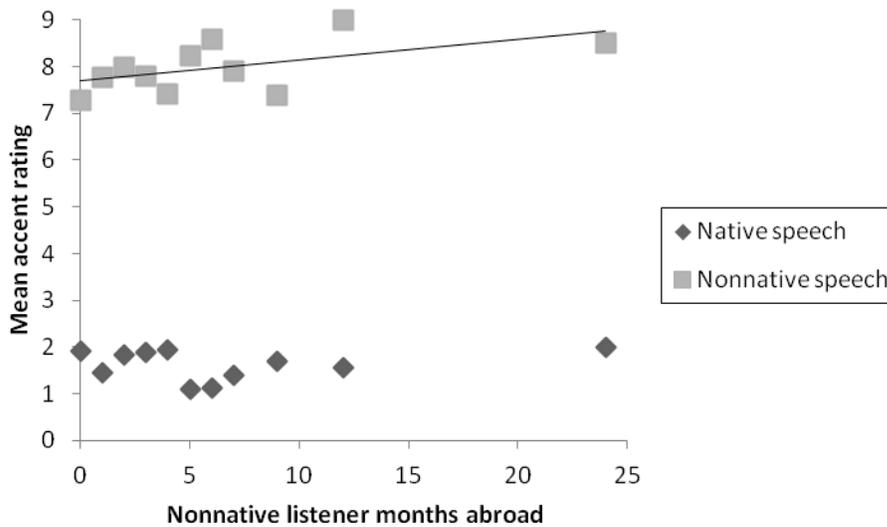


Figure 2. Nonnative listener ratings of native and nonnative speech by study abroad score.

In order to determine the effects of listeners’ pronunciation instruction experience on their perception of degree of foreign accent, another mixed model ANOVA was run with rating as the dependent variable and pronunciation instruction score as a fixed covariate. The scores of 10 listeners were excluded from analysis because they had not provided adequate answers on the background questionnaire or had rated native speech ratings exceptionally high (thus claiming that the speech was ‘less close to native Spanish’) on the rating scale. When the ratings of the remaining 150 nonnative listeners were run, a significant effect of pronunciation instruction experience was found for nonnative listeners’ ratings of native speech $F(1, 148) = 4.89, p < 0.05$. The mean ratings shown in Figure 3 reveal that those with more pronunciation instruction experience, those reporting more instructors who taught pronunciation, rated native speech as closer to native than those with less pronunciation instruction experience.

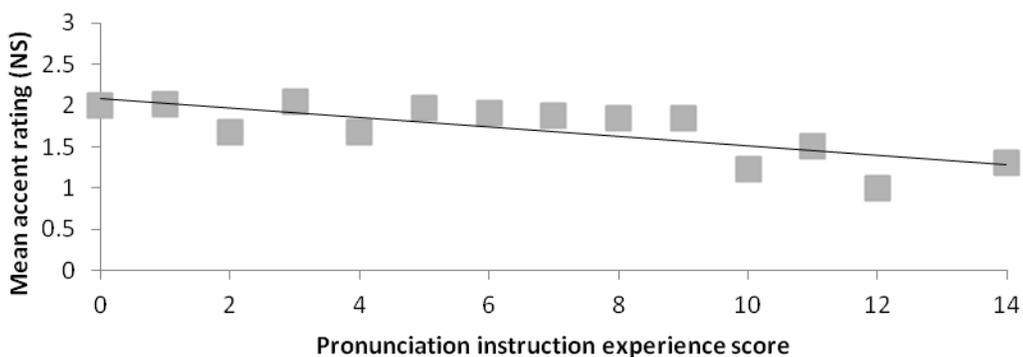


Figure 3. Nonnative listener ratings of native speech by pronunciation instruction experience score.

DISCUSSION AND CONCLUSIONS

The statistical analyses of nonnative listeners' ratings of native and nonnative speech revealed that grammatical proficiency score was a significant predictor of nonnative classroom listeners' ratings. Specifically, listeners who were more proficient distinguished more between native and nonnative speech, rating the pronunciation of the native speech as closer to native and the pronunciation of nonnative speech as less close to native. These findings mirror what was previously found in research on the effects of L2 experience on ESL learners' perception of foreign accent, that more experienced listeners distinguished between native and nonnative speech more than those who had less experience (Flege, 1988). These results also extend previous findings on the effects of L2 proficiency on foreign accent detection, confirming that more advanced learners are not only better at recognizing native and nonnative speech (Neufeld, 1980; Scovel, 1988) but that they also rate degree of foreign accent differently from lower-level learners. This tendency likely reflects the fact that less proficient learners' attentional resources are often allocated toward attending to the linguistic information necessary for comprehension rather than the talker-specific information associated with foreign accent. Because more advanced learners must focus less on the lexical message to understand speech, they may be better equipped to recognize native and nonnative speech.

In addition, the analyses found that listeners with more study abroad experience rated the pronunciation of the nonnative speech as significantly less close to native than those with less experience. Whereas Major (2007) found that individuals with target-language experience distinguished more between native and nonnative speech in their accent ratings than inexperienced individuals, his study did not investigate the effects of degree of experience as the present investigation did. The present findings show that the amount of time classroom learners spend abroad can affect their perception of foreign accent, just as Flege (1988) found for ESL learners living in the target language environment. Neufeld (1980) suggests that nonnative listeners rely on their L2 phonological competence and how the language is "supposed to sound" rather than their L1 knowledge in assessing foreign accent. This hypothesis is supported by the findings that language learners are better at distinguishing native and foreign-accented speech when they are more proficient in the L2 and because nonnative listeners' ratings of foreign accent do not vary as a result of their L1 background (Munro, Derwing, & Morton, 2006). If this account is accurate then it is possible that nonnative listeners with more study abroad experience in the present study rated nonnative speech as significantly less native-like because their experience abroad had added to their L2 phonological competence.

This may also explain the finding that nonnative listeners who had been exposed to more pronunciation instruction in their classes rated the pronunciation of native speech as closer to native than those with less experience. If the additional pronunciation instruction experience added to learners' L2 phonological competence then this may have led them to recognize the authenticity of native speech more readily. This finding suggests that instruction and classroom emphasis on pronunciation influences listeners' perception of foreign accent, just as it has been found to affect foreign accent production (Chela-Flores, 2001; Moyer, 1999; Zampini, 1998a). This result is important for language teachers because it reveals differences between the perception of foreign accent by advanced and lower-level learners. This means that students at different levels may require different feedback of what constitutes a foreign accent and that nonnative speaker instructors need to be aware that their own perception of foreign accent may differ from that of their students.

Accurate perception of the L2 is an integral part of learning to produce target-like L2 speech, and examining what language learners hear as foreign-accented at different stages can shed light on their developing L2 phonological competence. The present study confirms that nonnative classroom listeners' ratings of foreign accent vary as a result of proficiency, study abroad experience, and pronunciation instruction. This is a step toward a better understanding of nonnative listeners' perception of foreign accent, though further investigation is needed to determine the relationship between learners perception and production of accented speech and how this information can best be used to inform pedagogy.

ABOUT THE AUTHOR

Elena Schoonmaker-Gates teaches at Elon University in North Carolina and has a PhD from Indiana University. Her research interests are the perception and production of second language speech, specifically the linguistic cues and listener characteristics that affect the perception of foreign accent by both native and nonnative listeners.

REFERENCES

- Albrechtsen, D., Henriksen, B., & Faerch, C. (1980). Native speaker reactions to learners' spoken Interlanguage. *Language Learning, 30*, 365-396.
- Anderson-Hsieh, J., Johnson, R., & Koehler, K. (1992). The relationship between native speaker judgments of nonnative pronunciation and deviance in segments, prosody, and syllable structure. *Language Learning, 42*, 529-555.
- Baker, W. & Trofimovich, P. (2006). Perceptual paths to accurate production of L2 vowels: The role of individual differences. *International Review of Applied Linguistics in Language Teaching, 44*, 231-250.
- Boersma, P. (2001). Praat, a system for doing phonetics by computer. *Glott International, 5*, 341-345.
- Derwing, T. M., & Munro, M. J. (1997). Accent, intelligibility, and comprehensibility: Evidence for four L1s. *Studies in Second Language Acquisition, 20*, 1-16.
- Elliott, A.R. (1995). Field independence/dependence, hemispheric specialization, and attitude in relation to pronunciation accuracy in Spanish as a foreign accent. *The Modern Language Journal, 79*(3), 356-371.
- Fayer, J., & Krazinski, E. (1987). Native and nonnative judgments of intelligibility and irritation. *Language Learning, 37*, 313-326.
- Flege, J.E. (1988). Factors affecting degree of perceived foreign accent in English sentences. *Journal of the Acoustical Society of America, 84*, 70-79.
- Flege, J.E. (1995). Second language speech learning: Theory, findings, and problems. In W. Strange (Ed.), *Speech Perception and Linguistic Experience* (pp. 233-277). Timonium, MD: York Press.
- Flege, J. (2003). Assessing constraints on second-language segmental production and perception. In A. Meyer & N. Schiller (Eds), *Phonetics and Phonology in Language Comprehension and Production, Differences and Similarities* (pp. 319-355). Berlin: Mouton de Gruyter.

- Flege, J. E., & Fletcher, K. L. (1992). Talker and listener effects on degree of perceived foreign accent. *Journal of the Acoustical Society of America*, *91*, 370-389.
- Major, R. (2007). Identifying a foreign accent in an unfamiliar language. *Studies in Second Language Acquisition*, *29*, 539-556.
- Munro, M.J., Derwing, T.M. & Morton, S.L. (2006). The mutual intelligibility of L2 speech. *Studies in Second Language Acquisition*, *28*, 111-131.
- Neufeld, G.G. (1980). On the adult's ability to acquire phonology. *TESOL Quarterly*, *14*, 285-298.
- Olson, L. & Samuels, S. (1973). The relationship between age and accuracy of foreign language pronunciation. *Journal of Educational Research*, *66*, 263-267.
- Piper, T., & Cansin, D. (1988). Factors influencing the foreign accent. *Canadian Modern Language Review*, *44*, 334-342.
- Scovel, T. (1988). *A time to speak: A psycholinguistic inquiry into the critical period for human speech*. Rowley, MA. Newbury House.
- Southwood, M. H., & Flege, J. E. (1999). Scaling foreign accent: direct magnitude estimation versus interval scaling. *Clinical Linguistics and Phonetics*, *13*, 335-349.
- Thompson, I. (1991). Foreign accents revisited: the English pronunciation of Russian immigrants. *Language Learning*, *41*, 177-204.