Impact of Native/Nonnative Accents on Iranian EFL Students' Listening Comprehension

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ABSTRACT

The effect of Foreign Accented Speech (FAS) on listening comprehension has been under investigation for many years. FAS studies examine the effect of different accents on listeners' intelligibility and perceived comprehensibility. In this study, the effects of Persian, Spanish, and American accents on Iranian students' listening comprehension were investigated. Two hundred and fifty undergraduate English Translation students took part in a TOEFL test. Students were divided into two proficiency groups. Thirty students were chosen as the high proficiency group and thirty others were selected for the low proficiency group. Then each group was randomly divided into three sub-groups of ten students, and each group was exposed to Persian-accented English, Spanish-accented English, and standard American English. By analyzing the resulting figures with a repeated measure design of ANOVA, it was realized that for both proficiency groups the Persian accent had been the most influential one on the students' listening comprehension. It was found that American and Spanish accents did not have any significant effect on Iranian students' listening comprehension, although the American accent was more effective than the Spanish accent.

Introduction

Due to the widespread use of the English language throughout the world and preference of many people for this language we witness the emergence of many nonnative accents of English in addition to native accents. Everyone speaks with some sort of accent - a pattern of speech production that may reveal many things about us, including where we grew up, what communities we identify with, and how educated we are. Broadly speaking, foreign-accented speech is non-pathological speech produced by second-language users that sounds noticeably different from the speech of native speakers. Most of us are quite good at recognizing when someone we meet comes from a different language background than our own. In most cases, speaking with a foreign accent causes no problems. Occasionally, however, we may encounter people who have a great deal of difficulty making themselves understood because they have not adequately acquired the English sound system.

Understanding the effects of Foreign Accented Speech (FAS) is important for both theoretical inquiries on the nature of speech perception and for evaluation of real-world situations in which successful speech communication is critical. Much of the previous research investigating FAS has been limited to measuring gross intelligibility. In all of these studies, FAS was found to be less intelligible than non-accented speech (NAS) (Weil, 2002)

Participants

Two hundred and fifty undergraduate English Translation students took part in a TOEFL test. All of them were monolingual speakers of Persian. Based on the mean and standard deviation of the obtained scores, students were divided into two proficiency groups. Those who scored between 0.5 and 1.5 standard deviation above the mean were considered as the high proficiency group and those who scored between 0.5 and 1.5 standard deviation below the mean were considered as the lower proficiency group. Thirty students were chosen as the high proficiency group and thirty others were selected for the low proficiency group. Then each group was randomly divided into three sub-groups of ten students, and each group was exposed to Farsi-accented English, Spanish-accented English, and standard American English, according to a Latin square design.

Selection of Scripts

Six different story scripts were selected. Each one of them was selected from a storybook named "Line by Line" written by Steven J. Molinsky. Each story script took approximately two minutes to read aloud by the rVoice speaker. These story scripts were at a pre- intermediate level, which contained simple language and were designed to offer students opportunities for true interactive communicative practice in the language classroom. The stories were brief, and had tried to create characters and situations that were simple and straightforward, while highlighting specific grammatical structures.

Selection of Native Speakers

After the selection of story scripts, they were transferred into the "ScanSoft-rVoice" software, which reads out passages in different English accents and also it can read out scripts of various languages. Then the audio files were saved and after that they were recorded on three cassettes. rVoice is a general purpose TTS engine that is usable within a wide range of applications. rVoice offers the highest quality in speech synthesis in a range of voices − the user can choose male or female voices, younger or more mature, with different regional accents and speaking styles.

Measuring Intelligibility

In order to measure students' listening comprehension ability, after hearing each script, students were asked to answer six multiple choice item questions based on the content of the passage. They had only six minutes to answer. Because of the

six story scripts, six tests were prepared. The reason behind selecting these tests was to provide a tool for measuring the construct of intelligibility. As discussed earlier in the definition of important terms, intelligibility is a construct that can be objectively measured via listening comprehension tests. And it refers to actual understanding of the hearer of the message which the end result of listening process.

Data Analysis

In this study, there were two independent factors, namely accent types and the proficiency level. The former had three levels and the latter had two levels. Our dependent variables were the subjects' scores on the listening comprehension test. By taking advantage of the SPSS software, the scores were transferred into a two-way ANOVA design with repeated measures to explore the significance of different relationships between different factors. Repeated measure signifies the repetition of all the treatments for all subjects. In this study we had two independent variables. Accent type was assumed as the within subject factor and proficiency was regarded as the between subject proficiency.

Results and Analysis

Listening effectively is a demanding and involved process. One must be able to deal with different accents or pronunciation, unfamiliar lexical items and syntactic structures, competing background noise, and also make a conscious effort to not 'switch off' or become distracted while listening. All of this must be achieved and dealt with more or less simultaneously in order to identify and understand the meaning in any given message. The aim of listening courses is to prepare students for real-life situations and not the artificial condition of the classroom. Due to the extreme diversity of listening contexts in real situations it is an obligation to attempt to include as much various listening contexts as possible in the listening course and weave it into the entire curriculum. An important aspect of this authenticity is the inclusion of different accent into the listening course. For this reason it seems sensible to investigate which accents have the most and the least impact on listening comprehension ability of the subjects. This will allow us to recognize to what extent we can ascribe different parts of listening course to various accents.

In this section the statistical analysis and tables are described. The analyses that have been conducted here have become available through the use the SPSS software. SPSS for Windows provides a powerful statistical analysis and data management system in a graphical environment, using descriptive menus and simple dialog boxes to do most of the work for researchers. Most tasks can be accomplished simply by transferring the data and choosing the appropriate design.

Table 1. Within-Subject Factors

Accent	Dependent Variable
1	P
2	S
3	A

Table 2. Between-Subject Factors

Proficiency	N
Low	30
High	30

These two tables demonstrate how the within-subject and between-subject factors are arranged. Table 1 shows the order of different accents and Table 2 represents the other factor, which is proficiency at two levels. In Table 2 we can see the number of participants at each level of proficiency which is 30 students in

each level. The kind of design that suits this type of analysis is General Linear Models, Repeated Measures Design. This was selected due to the repetition of treatments. In this model the concept of sphericity is very crucial and it is the criterion to determine the significance of the measurements.

Sphericity is a condition that must be assumed in order for the F-tests in the mixed model approach (in SPSS they are termed as averaged univariate tests) to have precise F-distributions under the null hypothesis if the other standard assumptions are met. It is relevant when there are three or more levels of a within subjects or repeated measures factor. There are a number of ways of stating the assumption. The one that is perhaps used most practically is to say that if K correlated dependent variables are taken and transformed into K-1 orthonormal contrasts among the original K variables, these K-1 variables must have equal variance and be uncorrelated and it must be the case in the population. The most commonly used test of the assumption is Mauchly's test, which tests exactly this case (all orthonormal contrast transformations will produce the same results).

Table 3. Mauchly's Test of Sphericity

within subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Accent	.0966	1.992	2	.369	.967	1.00	.500

In this Table we can observe the Mauchly' test of sphericity. Because w= 0.966 (p>0.05), the assumption of sphericity is valid.

Table 4: Tests of Within-Subjects Effects

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Accent	Sphericity Assumed	5306.690	2	2653.345	20.331	.000
	Greenhouse-Geisser	5306.690	1.934	2744.467	20.331	.000
	Huynh-Feldt	5306.690	2.000	2653.345	20.331	.000
	Lower-bound	5306.690	1.000	5306.690	20.331	.000
Accent* PROFI	Sphericity Assumed	55.981	2	27.991	.214	.807
	Greenhouse-Geisser	55.981	1.934	28.952	.214	.800
	Huynh-Feldt	55.981	2.000	27.991	.214	.807
	Lower-bound	55.981	1.000	55.981	.214	.645
Error(Accent)	Sphericity Assumed	15139.221	116	130.511		
	Greenhouse-Geisser	15139.221	112.149	134.993		
	Huynh-Feldt	15139.221	116.000	130.511		
	Lower-bound	15139.221	58.000	261.021		

Table 4 contains important information to convey. First we can observe the difference between the first factor, which is Accent, and see whether there is any difference between these accent types. And in the second step we can observe if there is any difference between the second factor, which is proficiency level. As the Mauchly's test of sphericity indicates the assumption of sphericity is valid and there is no requirement to pay attention to other parameters.

If we look at the first row, which is identified with the phrase "Sphericity Assumed" we can witness the significance of the differences for both Accent, and its interaction with proficiency. For the Accent factor F(2,116)=20.331 (p<0.05) which is highly significant. It demonstrates that there is a significant difference between the types of accents. But to obtain more detailed insight we require paired comparison, which is presented later.

For the interaction between Accent and Proficiency we can observe that Table 4 has no significant difference for this part: F(2,116)= 27.991(p> 0.05), which is completely nonsignificant. The interpretation of this statistic is that levels of proficiency

have no significant or noticeable effect on the listening comprehension of students with regard to the accent type.

Table 5. Estimates

Estimates

Measure: MEASURE_1

ACCENT	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
1 Persian	76.333	1.783	72.765	79.901
2 Spanish	63.221	2.292	58.632	67.810
3 American	67.846	2.150	63.541	72.150

If we want to have a detailed understanding of the differences between these treatments we can conduct a pairwise comparison which illuminates the exact differences in the treatments. In the Table above we can notice the mean and standard deviation for the three types of accents.

Table 6. Pairwise Comparisons

Pairwise Comparisons

Measure: MEASURE_1

(I) ACCENT	(J) ACCENT	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
1	2	13.112*	2.139	.000	8.830	17.393
	3	8.487*	1.889	.000	4.706	12.268
2	1	-13.112*	2.139	.000	-17.393	-8.830
	3	-4.625*	2.216	.041	-9.060	-.190
3	1	-8.487*	1.889	.000	-12.268	-4.706
	2	4.625*	2.216	.041	.190	9.060

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

In the Table 6 the differences between three types of accents have been outlined. As Table 1 shows Accent 1 relates to Persian accent, Accent 2 relates to Spanish accent, and Accent 3 represents American accent. This Table makes a pairwise comparison between these types. The LSD type of comparison has been utilized. Table 6 shows that there exists significant difference between comprehension of Persian accent in comparison with two other accents.

The mean difference for Persian and Spanish accents is 13.112* which is significant at 0.05 level and it is also significant with regard to adjustment for multiple comparisons. The mean difference for Persian and American accents is 8.487* that this star shows the significance at 0.05 level and sig.[a] represents the significance of the factor after adjustment for multiple comparisons.

Multiple comparisons signify the relationships between various comparisons in the design. For instance, in this design there exist 6 contrasts and if we divide the significance level 0.05 by six the actual significance level becomes 0.0083 which [a] indicates it.

But if we observe the tabulated data for Accent 2 and 3 which are Spanish and American accents, the mean difference is 4.625* which is significant at 0.05 level but not for multiple adjustment comparisons. And the mean for American accent has been higher.

Discussion and Conclusion

Studying foreign accented speech perception provides the rare opportunity to simultaneously address both theoretical questions about speech perception and practical questions about the impact of accent on human performance (Weil, 2003). In this study an experiment was conducted. This experiment

measured intelligibility by means of a multiple-choice question test. According to Munro and Derwing (1995), intelligibility is "The extent to which an utterance is actually understood."

In the current study the effect of three accents was investigated. The results of this experiment demonstrate that Persian accent has been significantly more influential on Iranian students' listening comprehension compared to American and Spanish accents. But no significant difference was found between American and Spanish accents. Based on the results, Persian accent does improve listening comprehension. Spanish and American accents had significant negative effects on subjects' listening comprehension in comparison to the Persian accent.

Although the difference between American and Spanish accents at multiple adjustment comparisons level was not significant, but when the confidence interval was 95%, it was significant. For this reason we can not draw any reliable conclusion here. The results also showed that proficiency level did not have any significant influence on listening comprehension with regard to accent types.

Implication for International Teaching Assistants

A serious problem, which arises, could be attributed to the academic world in which teacher assistants with different language backgrounds and accents are employed. Meanwhile the students attending these classes come from different parts of the world. In the case of Iranian students attending these classes, undoubtedly they will face comprehension difficulties in listening to other teachers. If their teacher has Spanish accent the results of this study showed that these students will experience misunderstanding which can be reflected in their frustration and anxiety which in turn it occasions in their lower scores. As the results showed the amount of cognitive effort for perceiving Spanish-accented speech is significantly higher in comparison to that of Persian accent. Some evidence suggests that comprehension improves over time and with more exposure (Weil, 2001). Based on this evidence improvement and progress can occur over the time of exposure but before that students can suffer a great amount of misperception.

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