Empathy as a Predictor of Pronunciation Mastery: The Case of Female Iranian EFL Learners' Pronunciation Errors

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Abstract

The present study set out to identify the problematic areas of pronunciation among Iranian female EFL learners. Further, this study investigated the relationship between empathy and authentic pronunciation, along with gender as a moderator variable. Comparing segmental features and phonological processes of both languages helped teachers to predict the target errors. To reach such a goal, a total of 69 Iranian undergraduate EFL learners were recruited from the Vali-e-Asr University of Rafsanjan, majoring in English literature and translation studies participated in the study. The subjects were conveniently sampled and were taking the course Conversation I. After administrating the Basic Empathy Scale (BES: Jolliffe & Farrington, 2006), the students were assigned to two groups: high-empathic group and low-empathic group. Both groups participated in an oral interview twice (before and after segmental form-focused instruction). The data were collected through taping participants' pronunciation of some words. Two raters analyzed students' pronunciation in terms of segmental features. The results demonstrated that the absence of some phonemes in the Farsi sound system and some phonological differences between the two languages caused difficulties for EFL learners. Furthermore, it was witnessed that those in the high-level group (i.e., more empathic learners) were more successful in acquiring authentic pronunciation than those in the low-level group.

Pronunciation research has long been affected by two opposing principles: nativeness principle (i.e., the desire to acquire a native-like accent) and intelligibility principle (i.e., the desire to be understandable). The nativeness principle holds that achieving native-like pronunciation is possible, but age as the main factor determines success to eliminate a learner's accent. However, the intelligibility principle states that there is no certain relationship between accent and comprehensibility, and this is pronunciation errors that impede understanding (Levis, 2005).

First and foremost, it is essential to make a distinction between phonology and pronunciation since, in some cases, they are used interchangeably. In Burgess and Spencer's (2000) terms, phonology refers to the theory and knowledge used for understanding the mechanism of a language sound system and entails both segmental and suprasegmental features; in contrast, pronunciation is practical and includes the meaningful application of phonological features in speaking a target language (TL). Additionally, it is a tool for perceiving those phonological features occurring in the target language discourse. Therefore, according to Burgess and Spencer (2000), while concerning phonology, we deal with a stretch of sound (made up of some labeled phonemes, which include certain suprasegmental features). On the other hand, in pronunciation, we do not label anything but only perform producing and interpreting phonological patterns.

As was mentioned, phonology consists of two groups of features: segmental and suprasegmental. Suprasegmental features involve stress, intonation, pitch, and rhythm, which are critical features for constructing effective communication and major aspects of language proficiency focused in language classes (Fromkin, Rodman, & Hyams, 2018). These features play a big part in determining the meaning of utterances and therefore are

distinctive. However, Levis (2005) pointed out that although suprasegmentals have received more attention than segmentals, the significance of these features for communication in English is not certain. He also claimed that the learnability of suprasegmental features is unclear.

Along with several studies investigating the role of suprasegmental features in speech perception (see Field, 2005 for lexical stress; Hahn, 2004 for sentence stress), the role and significance of segmental features have been examined, too. Levis (2005) pointed out that although suprasegmentals are more focused than segmentals, the significance of these features in English is not certain. In a study by Pennington and Richards (1986), segmental characteristics are defined as small units of sounds, juxtaposed with the term phoneme recognized as "the smallest unit that can make a difference in meaning" (Trask, 1996). Furthermore, Kissling (2013) argued that providing students with explicit instructions of L2 phonetics and placing emphasis on phonetic parameters relating to the segmental features such as place and manner of articulation, constitutes the pivotal and major part of pronunciation teaching.

Identification of Problematic Features

Fraser (2000) asserted that central to the subskills of speaking is the concept of pronunciation. Although the majority of L2 learners acquire the components of language such as morphology, syntax, or semantics at a native-level, they fail to acquire phonology to an acceptable level; despite their proficiency in other language elements, if L2 learners have poor knowledge of phonology, their speech is hardly intelligible, and they might be very difficult to be understood.

Unlike the last decades in which pronunciation research received relatively little attention (Derwing & Munro, 2005), it has recently attracted a lot of researchers in this field (Yan & Park, 2017). Hence, investigating pronunciation errors came to be a continuing concern within recent accent

studies and several attempts have been made to identify the characteristics that make pronunciation comprehensible between native English speakers (NEs) and non-native English speakers (NNEs) and also NNEs-NNEs (cf. Derwing & Munro, 1997; Field, 2005; Hahn, 2004; Munro & Derwing, 1999; Munro, Derwing, & Morton, 2006). The findings could be in service of language assessment, which aims to "reduce sources of variability that are external to the learner's language performance to the greatest possible degree to reflect the candidate's true ability" (Wigglesworth, 2001, p. 188).

In 1975, Corder presented a taxonomy of errors made by L2 learners, according to which errors were divided into three groups of developmental (intralingual), interlingual, and training errors. Twelve years later, Swan and Smith (1987) supported this view of systematicity and asserted that pronunciation errors are not just unfamiliar random sounds but are emanated from the learner's L1 sound system. Additionally, in terms of interlingual errors, this view was also supported by Odlin (1989), who suggested that the phonetics of two specific languages may have sounds or acoustics in common, but these sounds may be produced differently. Hence, L2 learners may develop pronunciation productions that are neither completely similar to the L2 sound system nor the L1, and consequently, these productions were called "approximations."

As was noted earlier, Corder draws our attention to three distinctive categories of errors. The first category, called developmentals, refers to the errors originating from the TL itself. On the other hand, interlingual errors trace back to the learners' first language. Finally, the last group, training group, are errors that occur as a result of incorrect and invalid teaching techniques. Accordingly, a handful of studies have examined pronunciation variabilities and errors among language learners (cf. Biersner, 1983; Mayberry, 2007; Sadeghi, 2010; Saito, 2011; Shiamizadeh, Caspers & Schiller, 2018). In the same vein, Saito (2011) asserted that in teaching L2 pronunciation, it is necessary to prioritize phonological features based on their contribution to the

comprehensibility of language. Although, several studies have shown that in addition to a paucity of confidence and training among teachers and even teacher trainers, educational decision-makers are not sure about the effectiveness and significance of pronunciation teaching materials and as a result, less attention has been paid to pronunciation in language teaching (cf. Baker, 2014; Buss, 2013; Derwing & Munro, 2009; Foote, Holtby, & Derwing, 2011; Macdonald, 2002; Morin, 2007; Murphy, 1997).

In sum, based on the literature, it seems logical to predict areas of difficulty and emphasize distinctive and significant phonological features in language classrooms. Therefore, the following controversial questions can be proposed:

1. Which segmental features are crucial for comprehensible pronunciation?
2. Which segmental features need to be considered and taught as the main pronunciation course in L2 classes (Saito, 2011)?

The answers to these questions are pivotal in setting priorities and planning effective L2 classes (Celce-Murcia, Brinton, & Goodwin, 2010; Levis, 2005). Some L2 pronunciation studies investigated those EFL learners with different L1 phonetic systems, too (cf. Lambacher, 1999; Riney & Anderson-Hsieh, 1993; Saito, 2011). This fact indicates a need to investigate segmental features causing pronunciation difficulties or problems in different settings. To the best of the author's knowledge, no previous study has investigated this source of variability in pronunciation in the context of Iran.

Empathy and Pronunciation Mastery

The need to identify individual differences (IDs) while learning a second or foreign language has always been one of the major concerns (Farshi & Tavakoli, 2019). In addition to the role of L1 in affecting L2 pronunciation development, other elements could correlate with pronunciation proficiency. In other words, learners do not benefit from the age difference, method of

instruction, aptitude, and certain affective variables such as attitude, motivation, and empathy uniformly (Schumann, 1975).

In the current study, the focus is on empathy. Empathy is the ability "to tune into how someone else is feeling, or what they might be thinking. It allows us to understand the intentions of others, predict their behavior, and experience an emotion triggered by their emotion" (Baron-Cohen & Wheelwright, 2004, p. 163). According to some researchers (e.g., Decety & Jackson, 2004; Eisenberg & Strayer, 1987), two basic aspects of empathy are affective and cognitive. Cognitive empathy is defined as ''the intellectual/imaginative apprehension of another's mental state'' and affective empathy as ''an emotional response to ... emotional responses of others'' (Lawrence, Shaw, Baker, Baron-Cohen, & David, 2004, p. 911).

The capacity to pick a new language correlates with empathic capacity (Guiora, Brannon, & Dull, 1972b). More specifically, several studies witnessed that learners whose levels of empathy are high are better imitators of the target language pronunciation. Among them are experiments and investigations designed by Guiora and his colleagues. For example, in a study that set out to study empathy systematically, he found that the performance on the empathy obtained from the Micro-Momentary Expression (MME) correlates with French pronunciation authenticity. In another investigation into empathy, Guiora, Beit-Hallahmi, Brannon, Dull, & Scovel (1972a) carried out the famous "alcohol study." They investigated the impact of alcohol on students' pronunciation skills in an unknown language (Thai). The participants were grouped into the experimental (alcohol) and control (placebo) group.

Interestingly, in terms of pronunciation, the students consuming small amounts of alcohol performed better than the placebo group. This result may be explained by the fact that mediated reduction of inhibitions or enhancing the permeability of ego boundaries will facilitate the pronunciation. Other surveys, such as that conducted by Rota and Reiterer (2009), also examined

the relationship between pronunciation mastery and empathy through using the Modern Language Aptitude Test (MLAT). They used a scale devised by Leibetseder, Laireiter, Riepler, and Ko¨ller (2001). In their study, empathy is referred to as "the effort to identify with persons in fictional or real-life situations" (Rota & Reiterer, 2009, p. 71). They employed a questionnaire composed of 26 items, measuring four factors (*cognitive-sensitivity, emotional sensitivity, emotional, and cognitive concern)*. The participants in their study took part in several phonetic assessments. Their phonetic proficiency level was assessed in terms of L2 pronunciation (imitation of Hindi as unknown) and perception. The authors reported that empathic readiness (an IQ on empathy, reflecting the individual's capacity to feel empathy in both fictional and real-life circumstances) has a significant positive correlation with the talent of pronunciation, phonetic coding ability, grammatical sensitivity, and vocabulary learning.

Current Study

This study set out to determine the problematic features of female Iranian EFL learners based on cross-linguistic analyses. Subsequently, the relationship between leaner's empathy on pronunciation authenticity was examined, too. However, before proceeding further, it is necessary to mention that analyses were conducted in terms of segmental features, and suprasegmental features are beyond the scope of this study. Therefore, this study aims to answer the following questions:

1. Is female Iranian EFL learners' pronunciation deviant from the target norms (English)?
2. Does empathy predict pronunciation mastery?

Ellis (2006) proposed two approaches to determine the relative teachability, learnability, and difficulty of linguistic features for a target L2 learner group: remedial and expert judgment. Through the remedial approach,

the points which have been labeled as problematic to learners, are selected based on previous findings and reports.

The current study applied cross-linguistic analyses based on the remedial approach to determine the most problematic segmental feature between Farsi and English phonetic systems, along with previous L2 speech studies.

Cross-linguistic Analyses

Building on the concept of the Contrastive Analysis Hypothesis (CAH), we can compare two or more languages to identify the differences or similarities. This hypothesis exists in three versions: strong, moderate, and weak. In Linguistics Across Cultures (1957), Lado draws our attention to the strong version of CAH, according to which, as he claims, "we can predict and describe the patterns that will cause difficulty in learning, and those that will not cause difficulty, by comparing systematically the language and culture to be learned with the native language and culture of the student" (p. vii); he continues:

"In the comparison between native and foreign language lies the key to ease or difficulty in foreign language learning… . We assume that the student who comes in contact with a foreign language will find some features of it quite easy and others extremely difficult. Those elements that are similar to his native language will be easy for him, and those elements that are different will be difficult" (p. 1-2).

Therefore, the strong version of CAH assumes that the areas of difficulty that a language learner would encounter during learning can best be predicted based on an analysis and comparison of the two languages (e.g., native and target language). However, Wardaugh (1970) argued that the strong version is impractical and unrealistic. He wrote as follows: "at the very least, this version demands of linguists that they have available a set of linguistic

universals formulated within a comprehensive linguistic theory which deals adequately with syntax, semantics, and phonology" (1970, p.125).

In another major study Wardhaugh (1974) stated that contrary to the strong version, the weak version is less demanding and the linguist only employs the knowledge available to him, and in contrast to the strong version, the weak version of the CAH makes no predictions about the errors that learners would make. Finally, the last version of CAH, the moderate version, was proposed by Oller and Ziahosseiny (1970), who suggested that where patterns are minimally distinct, confusion can arise.

Drawing on the strong version of the CAH, Farsi has six distinct vowels including /e/, /o/, /ɑ/, /i/, /æ/, and /u/. In contrast, in General American English, there are five front vowel sounds /i, ɪ, e, ɛ, æ/, two central vowel sounds /ə, ʌ/ and five back vowel sounds /u, ʊ, o, ɔ, ɑ /. Therefore, the lack of several vowels in Farsi might be a source of difficulty for native Farsi speakers (NFs) in pronouncing some English sounds (see Moradi & Chen, 2018).

In an attempt, Hashemian and Soureshjani (2013) researched pronunciation errors of Iranian EFL learners. Employing a convenient sampling, the participants in the study completed a survey, and among them, three male learners were randomly selected. They were from varying language proficiency levels (beginner, intermediate, and advanced). They had to read aloud some selected materials, including three lists (some de-contextualized words, phrases, and sentences), and three authentic passages from varying levels of proficiency and according to the proficiency level of the participants. The rationale behind the read-aloud strategy was to reveal the students' segmental, word stress, and intonation errors.

The research was carried out in four phases, and all the steps were recorded. First, the participants took part in an interview and were required to talk about themselves. Second, they were given a text (according to their level of proficiency) and were asked to read it aloud. Third, they were asked to give a summary within a few minutes, and finally, the male learners had to read

aloud several isolated (de-contextualized) vocabularies as long as phrases and sentences.

The results showed that pronouncing /ɪə/ as /eə/, /æ/ as /e/, /ɑː/ as /ɔː/, /ʊ/ as /uː/, /aɪ/ as /ɔɪ/, /ɪ/ as /iː/, /əʊ/ as /ɔː/, /w/ as /v/, /ð/ as /d/ or /z/, /θ/ as /t/ or /s/ and /ŋ/ as /ng/ were the most common errors among the participants. The authors also identified eight mispronouncing errors as frequent among NFs which included /ɒ/, /ʌ/, /ɜː /, /ə/, /ɔɪ/, /eə/, /r/ and /aʊ/. in another major research, Moradi and Chen (2018), in a descriptive contrastive analysis of Persian and English studied consonants and vowels of these two languages in detail to find the similar and dissimilar features. They reported and presented some presuppositions or generalizations of phonological errors made by Farsi-speaking learners of English. The deviant forms are presented in Table 1:

Table 1.
Some Deviant Pronunciation Productions by NFs

English	Deviant production
/t, d/	/t̪, d̪/
/s, z/	/s̪, z̪/
/n/	/n̪/
/ð/	/d/ or /z/
/k, g/	/kʲ, gʲ/
/θ/	/s/ or /t/
Unaspirated /p, k, t/	Aspirated /pʰ, kʰ, tʰ/
/ŋ/	/ŋg, ŋk/
/w/	/v/
Initial CC–clusters such as /sk, sp, st, sl, sm, sn/ and /br-/, /tr-/, /kl-/	/ʔsk, ʔsp, ʔst, ʔsl, ʔsm, ʔsn/

Building on the remedial approach, and for the purposes of the current study, the features reported by Hashemian and Soureshjani (2013) and Moradi and Chen (2018) were hypothesized as problematic for Farsi-speaking learners of English (regarding vowels, only /ʌ/, /ɜː/, /ə/, /ɔɪ/ were investigated). It should be mentioned that English has several models of pronunciation (e.g.,

British English, Australian English, and New Zealand English). For the convenience of this research study, cross-linguistic analyses were based on the segmental distances between Farsi and General American English.

Method

Participants

Employing convenience sampling, the researchers selected 69 female Iranian EFL learners. Their ages ranged from 18- to 27-years-old, studying at the Vali-e-Asr University of Rafsanjan with no experience overseas, from four intact classes. They were all majoring in English literature and Translation Studies and were recruited in their first term of study, taking the course Conversation I, a Bachelor's degree course focusing on promoting students' listening and speaking skills. To control for practice effects, seven students were employed only to adjust independent ratings and were later removed from the experiment.

Instruments

To collect the data in the study, two instruments were employed: Jolliffe and Farrington's (2006) Basic Empathy Scale (BES) and a vocabulary list.

Basic Empathy Scale. In the present study, Jolliffe and Farrington's (2006) BES was recruited. The BES contains 20 items, scored on a five-point Likert scale (from 1=strongly disagree to 5=strongly agree). Since the scale included positively-keyed and negatively-keyed items, the negatively-keyed ones were reverse-scored. For the positively-keyed questions, an answer of "strongly agree" with a score of 5 would give a high score to high-empathic students. However, in the negatively-worded items, the scores run in the opposite direction (i.e., strongly disagree=5, disagree= 4, neutral=3, agree=2, and strongly agree =1). The scores obtained from this scale could range from 1 (deficit in empathy) to 100 (high level of empathy). Two basic dimensions of empathy are measured: Affective (items 1, 2, 4, 5, 7, 8, 11, 13, 15, 17, 18)

and cognitive (items 3, 6, 9, 10, 12, 14, 16, 19, 20). 'My friends' emotions don't affect me much,' is an example of the affective empathy and 'I can usually work out when my friends are scared' is an instance for the cognitive empathy (see Appendix).

Vocabulary List. A careful selection of vocabularies was made to include sound and syllable features identified for investigation in this study. Additionally, steps were taken (e.g., asking them to suggest some words, including the segmental and syllable features) to ensure that all participants are familiar with the vocabularies.

Procedure

Three weeks into the first semester of the 2017-2018 academic year, the BES was administered to all the students. Performing a median split on the results from this empathy measuring tool, the participants were split into high- and low-empathic groups. The median split method allows us to dichotomize and divide subjects into two groups based on the median score (i.e., those scoring below the median are assigned to the "low" group, and those scoring above it are placed in the "high" group). Thirty-one subjects composed the high-level group, and 31 students made up the low-level group. Two raters interviewed all subjects and asked them to read aloud a set of forty words to investigate the probability of pronunciation errors, and meanwhile, the students' voice was taped for further analyses. The raters had more than five years of experience teaching at university and institute levels and were equipped with extensive phonological knowledge. Due to limitations both in terms of the availability of the interviewers and the subjects, a nested design was used. In a nested design, all the raters do not rate all the subjects or recordings (i.e., crossed rating design), but all the raters should have ratings in common. Before starting the process, both raters were trained to apply the scoring rubrics. Seven students were interviewed by both raters to ensure that the raters have mastered the scoring guides and to check whether one rater's

score agrees with the assigned score by the other rater. When it was confirmed that the independent ratings are in harmony, in each of the two groups, about seven subjects were rated by both raters, whereas the rest were either rated by Rater 1 or Rater 2, on a random basis.

From week two onwards, all participants received a 15-minute form-focused instruction on segmental features, provided over eight sessions, and each session was held once a week. After the final session, a post-test interview was held, and the same raters assessed all students.

Data Analysis

The collected data for each group were input into IBM SPSS Statistics package v25.0, to investigate the differences between the two groups. An independent samples t-test was conducted to compare the high- and low-empathic groups.

Results and Discussion

Building on the cross-linguistic analyses, some phonemes were identified as problematic pronunciation features for NFs. Then, the relationship between accuracy in English pronunciation and scores on empathy skills obtained with the BES was explored. The results of the current study confirm the prediction that (a) there are some problematic segmentals for female NFs, and (b) learners with high levels of empathy are more authentic in pronouncing English segmentals.

RQ1. Is female Iranian EFL learners' pronunciation (segmental features) deviant from the target norms (English)?

After analyzing participants' productions by two raters, most areas of difficulty were identified. In some cases, some phonetic habits and interlingual errors and transfers were witnessed. For example:

a) Substitution of /r/, which is retroflex in English, with /r/ that is flap and trill in Farsi;

b) Substitution of alveolar consonants in English with dental alveolar consonants in Farsi;

c) Substitution of labio-velar consonant (/w/) in English with labiodental consonant (/v/) in Farsi;

d) Pronouncing English nasal /n/ as dental alveolar /<u>n</u>/ in Farsi;

e) Substitution of /ŋ/ in English with /ŋg, ŋk/ in Farsi;

f) Substitution of /ɫˠ/ (velarized lateral) in English with /l/ (dental alveolar) in Farsi;

g) Substitution of /k, g/ in English with /kʲ, gʲ/ (strongly palatalized velar stops) in Farsi;

h) Substitution of initial CC-clusters in English /sk-, sp-, st-, sl-, sm-, sn-/ with VCC /esk-, esp-, est-, esl-, esm-, esn-/;

i) Substitution of initial CC-clusters in English such as /br-/, /tr-/, /kl-/, etc., with CVC in Farsi /ber-, ter-, kel/, etc.

j) Substitution of /ə/ (mid and central vowel) with /e/ (Front, short vowel) or /ɜː/ (Midcentral, long vowel), e.g., /eˈbaʊt/ for /əˈbaʊt/. The possible explanation would be the absence of /ə/ in Farsi and picking substitutes for ease of articulation;

k) /ɜː/ which was substituted with /e/ as in the pronunciation of 'first' (/fɜːrst/);

l) Substitution of /ʌ/ with low back lax /a/.

These findings support those of Moradi and Chen (2018), which presented some generalizations about errors and deviant forms and phonological articulations and productions by NFs, through an in-detail contrastive analysis of two distinct sound systems of Farsi and English. This study is additionally in line with Hashemian and Soureshjani (2013), who identified and explored the difficulties of Iranian EFL learners in phonology and pronunciation, where three male language learners (from varying proficiency levels of elementary, intermediate, and advanced) were randomly

selected and asked to articulate three different types of word lists and passages.

RQ2. Does empathy predict pronunciation mastery?

An independent samples t-test was conducted to compare low-empathic and high-empathic groups for pronunciation authenticity. Tables 2 and 3 give the generated output of the t-test performed on the data collected from the samples.

Table 2.

Group Statistics

	Group	N	Mean	Std. Deviation	Std. Error Mean
Total	High	31	3.1129	1.65182	.29667
Variable	Low	31	1.5161	1.15819	.20802

Table 2 allows comparisons between the means of the gain scores of the groups. The table illustrates that the mean of the high-empathic group was striking, and if we read across the Mean row, we can see that the mean value is 3.1129 while the mean of the gain scores of the low-empathic group was 1.5161. We should consult Table 3 to determine if this difference is significant.

Table 3.

Independent Samples Test Results

Levene's Test for Equality of Variances		t-test for Equality of Means						
F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
3.407	.070	4.407	60	.000	1.59677	.36234	.87200	2.32155
		4.407	53.756	.000	1.59677	.36234	.87026	2.32329

As assessed by Levene's test for equality of variances, it was concluded that there was a significant difference between the performance of the low and high groups. This means that individuals in high-level group (M = 3.1129, SD = 1.65182, N = 31) scored much higher (i.e., less logically consistent) on pronouncing segmentals than the other group (M = 1.5161, SD = 1.15819, N = 31), t(60) = 4.407, p = .000, two-tailed. These results suggest that the high-level empathy group outperformed the low-level group.

This study produced results that corroborate the findings of the previous works in this field (e.g., Taylor, Guiora, Cafford, & Lane, 1969; Guiora et al., 1972a; Rota & Reiterer, 2009). To explain why these results were obtained, we can consult the study conducted by Taylor et al. (1969). They asserted that personal traits, specifically empathy, interacting with the language learning situation, bring about individual differences in the authenticity of pronunciation. Additionally, the present findings seem to be consistent with Guiora et al. (1972a), which examined the effects of induced changes in ego states on pronunciation authenticity, supported the previous findings regarding the association between empathy and authentic pronunciation that was indicated in their previous research. It is interesting to note that they showed a positive relationship that matches those observed in this study. According to them, a possible explanation for these results is basing the relationship upon a theoretical model assuming that empathy and authenticity of pronunciation will change based on the degree of flexibility of underlying psychic processes or the extent to which ego boundaries are penetrable. One special function of the ego is to leave one's isolation of identity from other people temporarily. This function is positively associated with the permeability of ego boundaries and is vital to the empathic process and pronunciation of a language.

Furthermore, Guiora et al. (1972b) observed that empathy measures obtained through the MME were among the strong predictors of authentic pronunciation. They claimed that this affective factor is an indicator of

pronunciation accuracy for all languages. Finally, in accordance with the present results, Rota and Reiterer (2009), who investigated the correlation of authentic pronunciation with empathic capacity, observed a positive relationship between empathy and actual performance or proficiency in pronouncing L2 texts.

Conclusion and Implications

Building on the CAH, some absent phonemes (e.g., /ŋ/, /ə/, /ð/, and /θ/) in the Farsi sound system result in pronunciation difficulties and impair understanding. Some female EFL learners cannot notice the difference between the sounds, which are linguistically significant and distinctive in English. Additionally, the extent of being empathic can impact the authenticity of pronunciation; those with high levels of empathy are better at imitating a native speaker's pronunciation.

As was mentioned earlier, this research was an attempt to identify and prioritize problematic segmental features for female Farsi native speakers to acquire comprehensible English pronunciation. However, it should not convey the idea that all language learners go through the same process; interlingual errors, and in this special case sound transfer, in pronouncing L2 forms is a very sophisticated process that includes different forms under different contexts. Moreover, participants' wish for more professional progress in the field and training curriculums that expose them to a variety of pedagogical techniques and tools should be regarded.

Limitations of the Study and Suggestions for Further Research

Due to the small sample size, the results obtained in this study should be interpreted with caution, and more research needs to be done with a more representative sample of NFs, to build on the understanding of phonological characteristics of Farsi speakers of English. Additionally, although the present study has attempted to investigate the segmental features of English

pronunciation among female EFL learners, it is beyond the scope of this study to examine the suprasegmental features, and it seems some further research is required to have a better picture of the issue by assessing suprasegmental features. Finally, the participants under investigation were all female EFL learners, and the including of pronunciation problems of male learners may yield different results.

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Appendix

Basic Empathy Scale

Items of the Basic Empathy Scale:

1. My friends' emotions don't affect me much.
2. After being with a friend who is sad about something, I usually feel sad.
3. I can understand my friend's happiness when she/he does well at something.
4. I get frightened when I watch characters in a good scary movie.
5. I get caught up in other people's feelings easily.
6. I find it hard to know when my friends are frightened.
7. I don't become sad when I see other people crying.
8. Other people's feeling doesn't bother me at all.
9. When someone is feeling 'down,' I can usually understand how they feel.
10. I can usually work out when my friends are scared.
11. I often become sad when watching sad things on TV or in films.
12. I can often understand how people are feeling even before they tell me.
13. Seeing a person who has been angered has no effect on my feelings.
14. I can usually work out when people are cheerful.
15. I tend to feel scared when I am with friends who are afraid.
16. I can usually realize quickly when a friend is angry.
17. I often get swept up in my friends' feelings.
18. My friend's unhappiness doesn't make me feel anything.
19. I am not usually aware of my friends' feelings.
20. I have trouble figuring out when my friends are happy.