

Influence of Dialect on the English Consonants Perception by English L2 learners: Evidence from Jiangsu Province for Chinese Native Speakers

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Abstract: The native language will have a negative transfer on the acquisition of second language. Dialects, as a branch of Chinese, also have an influence on English acquisition. The perception of consonants is one of the important foundations of English learning. This study will adopt discrimination as an experimental method to investigate whether there is a significant difference in the influence of different dialects on the perception of English consonants. Three major dialects in Jiangsu province will be taken as a study case to verify the hypothesis that there is a significant difference on the perception of English consonants in different dialects. This study will fill the gap in the overall research on the impact of three major dialects in Jiangsu province on the perception of English consonants, help English language learners with dialect background to reduce the influence of dialects on them and provide some teaching key points to teachers, especially for English language learners in Jiangsu province.

Keywords: language transfer, Jiangsu dialects, English speech perception, consonants

1. Introduction

In recent years, "Chinglish" has attracted the attention of many scholars. Shuai and Peng have discussed the widespread use of Chinglish [1,2], and Liu, Xu, and Wang have analyzed the causes and measures of Chinglish [3,4]. Before learning English, people have used native dialects for a long time in daily life, so most people have skillfully commanded their local dialects' phonetic system and formed pronunciation habits. They tend to replace some similar sounds in foreign languages with familiar ones in their native languages. In *Linguistics Across Cultures*, Lado proposed the concept of Language transfer [5], and "Chinglish" is caused by the negative language transfer on the Chinese English L2 learners [3,4]. In China, the dialects in Jiangsu Province are various and can be divided into three dialects from north to south: the Northern dialect, the Jianghuai dialect, and the Wu dialect. Due to the developed economy, good education, and various dialects in Jiangsu Province, lots of people in Jiangsu province have learned English and have been affected by language transfer. There have been many studies related to the impact of dialects in Jiangsu Province on English acquisition.

Speech perception and production are two important parts of speech acquisition. Most of these studies focus on the negative transfer of three major dialects on the production of English. Dai et al. have analyzed the errors caused by three major dialects and concluded the phonetic features of monophthongs [6]. Yang has made the overall research on the influence of Jiangsu dialects on the production of consonants [7]. The production of consonants in the Wu dialect region has been separately studied by Fang [8]. Some individual consonants have been analyzed by experiment [9]. When it comes to the perception of English, Xu has studied the perception of diphthongs in three major dialects [10]. Some consonants like /v/, /l/, and /n/ have been analyzed in one or two regions of the three dialect regions [11,12].

With lots of studies made by scholars on Jiangsu dialects and their influence on English acquisition, the studies on the overall analysis of the influence of three major dialects on English perception are still deficient. To the perception of vowels, diphthongs have been studied [10]. To the perception of consonants, research on the impact of Jiangsu dialects on the perception of all consonants is lacking, although some individual consonants have been analyzed. Whether there is a significant difference in the perception of consonants in three major dialects is also unknown. This research will focus on the influence of three major dialects in Jiangsu province on the perception of English consonants.

In this article, the influence of three major dialects in Jiangsu province on the English consonants for English second language learners will be discussed, discrimination task will be applied to test L2 learners' consonant perceptive ability. A British Standard Pronunciation (RP) consonant perception will be conducted on 90 college students from three major dialects regions in Jiangsu province to demonstrate whether there is a noticeable difference in the perception of English Consonants in English second language learners in different dialects regions.

2. Literature Review

Consonants play an important role in English learning. According to Lingua Franca Core, almost all consonants except for dental sounds affect the comprehensibility of a speaker's speech [13]. Consonants are more helpful in segmenting speech streams than vowels at the same frequency of appearance [14]. Consonants are more crucial in lexical processing than vowels [15]. The contribution of consonants in vocabulary recognition and vocabulary acquisition through reading is superior to vowels [16]. Language learners with different native consonants or consonant patterns may face different challenging problems [17]. The interference of Chinese initials on the pronunciation of English consonants is more severe than that of vowels on the pronunciation of English vowels [18]. Therefore, Chinese English learners need to pay more attention to consonant learning in their English speech acquisition. Speech acquisition involves two parts: speech perception and speech production. In this paper, the perception of consonants will be taken as the research object.

2.1. The Definition of Language Transfer

Language transfer has always been a topic of concern for linguists, and it is one of the most essential parts of L2 acquisition. The definition of language transfer is always a controversial topic. Odlin's definition is recognized the most widely, which is that language transfer is caused by the commonalities or differences between acquired and un-acquired languages [19]. However, this definition is just a kind of working definition for it has many flaws, for example, it does not explain why language transfer occurs or what influences language transfer [19]. Therefore, the definition of language transfer is still not clear, which is an urgent issue to solve and causes lots of challenges in studying it.

2.2. The Language Transfer of Chinese to English on Speech Perception

There are significant differences in the phoneme system between English and Chinese, with almost no phonemes pronounced exactly the same in both. This conclusion is in line with NLM (native language magnet) [20], language experience changes the acoustic space that determines speech perception, which means the more similar the two phonemes sound, the more difficult to perceive them accurately [21]. Despite some phonemes sound similar, the pronunciation positions of them are slightly different, which can easily cause some influence on their speech perception [22]. The differences in syllable structures between English and Chinese can also lead to negative transfer of speech perception [23]. Compared with Chinese syllables are independent (in words), while English has speech streams, which poses a challenge to Chinese English language learners' speech perception [22]. The prosodic differences between English and Chinese are also one of the factors affecting speech perception [22]. All these findings show that Chinese has a negative influence on speech perception in English. However, there are not enough studies on the language transfer of Chinese to English on speech perception. What's more, most of the conclusions have not been experimentally verified.

2.3. The Language Transfer of Chinese Dialects to English Speech Perception

Dialects are a branch of Chinese. Various dialects exist in China for daily use. A large portion of Chinese come into contact with dialects as their first language after birth. According to *the new edition of The Language Atlas of China*, Chinese dialects are divided into ten regions, namely the Mandarin region, Jin dialect region, Wu dialect region, Min dialect region, Hakka region, Cantonese region, Xiang dialect region, Gan dialect region, Hui dialect region, and Ping dialect and Tu dialect region [24]. Lots of scholars have conducted research on phonetic transfer in different dialects regions. However, there is still relatively little research on the perception of speech in different dialects regions. Han has taken students speaking Gan dialects as participants, finding that there is a significant difference in students' perception of the same pronunciation between dialect and non-dialect regions [25]. Li has studied the feature of speech perception of English language learners speaking Xian dialect [26]. Yu and Gong found that for English language learners who find it difficult to distinguish /n/ and /l/ in their dialects, it is equally difficult to distinguish /n/ and /l/ in English [27]. All these studies have shown that dialects have a significant impact on English speech perception. However, there is still an insufficient number of participants in these studies, and the scope of participation is also limited.

2.4. The Influence of Dialects in Jiangsu Province on English Phonological Acquisition

Jiangsu province has three major dialects: Northern dialect, Jianghuai dialect, and Wu dialect. Three major dialects in Jiangsu province have been studied for their influence on English phonological acquisition [28], which is preliminary research on generalizability. Based on this research, Jiang and Zhang compared the speech system of Jiangsu dialects with the English speech system by using comparative analysis again [29]. Both studies show that there is a huge difference in the pronunciation of three major dialects in Jiangsu province and the pronunciation of English and a significantly negative influence on English learners' phonological acquisition. Some scholars have made studies on the influence of three major dialects on English pronunciation separately: Yang has discussed Jianghuai dialects by taking students in Huaian as participants [30], Hua has analyzed the transfer effect of Wu dialects by comparative analysis and given some teaching strategies [31]. No scholar has researched the influence of the Northern dialect in Jiangsu province, which puts forward study direction.

2.4.1. The Influence of Dialects in Jiangsu Province on Phonemes' Perception

Despite the overall research on speech systems, research on specific phonemes is still lacking in English. Xu takes the influence of three major dialects in Jiangsu province on the perception of diphthongs as the object of study, and it has been concluded through experiments that learners from different dialect regions have significant differences in perception of diphthongs [10]. This conclusion takes experimental data as evidence, while the scope of participants is still limited for all of them are university students, which is not comprehensive enough. However, the perception of monophthongs has not been studied, which needs more scholars to pay attention to. For the perception of consonants, Yu has studied the difference in perception between language learners speaking the Jianghuai dialect and Wu dialect and found that language learners speaking the Jianghuai dialect have lower perception accuracy of [v] than those speaking the Wu dialect [11]. Zhang has taken English language learners speaking Jianghuai dialect as participants and those speaking the Jianghuai dialect have a higher average perception rate of [l] than that of [n] [12]. For people speaking the Northern dialect and Wu dialect, there is no obvious difference between their average perception rate of [l] and [n] when these two phonemes appear at the beginning of the words [32]. These studies have shown that dialects from different regions have an impact on the perception of English consonants.

However, no comprehensive study has been made on the influence of three major dialects in Jiangsu province on consonant perception. Most studies have focused on one or two of the three major dialects. Few of them have conducted research on all consonants, with only a few individual phonemes having been analyzed. Therefore, a study on the speech perception of all consonants in three major dialects in Jiangsu province is needed, which provides a direction for this study. In this study, the experiment will adopt Xu's (2012) diphthong perception experiment as a method [10], using Excel 2021 and SPSS for statistics and analysis of variance. Consonants will be the object of perception, and dialect speakers from the three major dialect regions will be the participants. On the basis of Xu's method, another 30 participants will be added to the experiment to address the shortage of participants.

3. Hypothesis

The results can be predicted that: 1) Jiangsu dialects have an influence on the perception of English consonants. 2) There is a difference in the influence of three major dialects in Jiangsu province on the perception of consonants. 3) The perception of each consonant is also different in different dialects of Jiangsu province.

3.1. Logic

This study will adopt discrimination task as the experimental approach, where words with target consonants and contrasting consonants will be listed on the paper. Participants will need to choose the words they have heard. By playing the target words' recordings from the sound bank of the Longman Pronunciation Dictionary (2015), in this task, the target words and the contrasting words will have the same syllable structures and vowel composition to ensure that consonants can be the only item to test. By comparing and analyzing the variance between any two of the three groups and the accuracy of the perception of consonants in three groups, if there are significant differences in variance on different dialects, it can be proven that there is a significant difference in the perception of English consonants English second language learners in different dialects regions, and if there are significant differences in accuracy of one consonant, it can be proven that some dialects in Jiangsu province have influence on the perception of this consonant.

4. Methods

4.1. Participants

In this study, a total of 90 participants will take part in the experiment. All these participants will be divided into 3 groups of 30 people based on three major dialect regions in Jiangsu province (Jianghuai dialect, Wu dialect, and Northern dialect). These 90 participants need to be aged between 18 to 40 and all have undergraduate degrees with CET-4 scores around 500 to 550. All of them have normal abilities to hear sounds. They can speak dialects in their regions fluently and cannot speak other dialects to avoid interference.

4.2. Materials

Table 1: Consonants and Minimal pairs.

Consonants	Minimal pairs
/v/-/w/	vest-west, vet-wet, Vit-wit
/f/-/h/	fair-hair, fear-hear, fall-hall
/r/-/l/	read-lead, road-load, rot-lot
/s/-/t/	sun-tun, side-tide, sell-tell
/n/-/l/	need-lead, net-let, nap-lap
/n/-/ŋ/	thin-thing, kin-king, sin-sing
/n/-/m/	sun-sum, Jan-jam, null-mull
/k/-/l/	cake-lake, kit-lit, keen-lean
/p/-/b/	pub-bub, pull-bull, push-bush
/t/-/d/	to-do, tie-die, town-down
/k/-/g/	Kang-gang, kit-git, coat-goat
/g/-/h/	gang-hang, gap-hap, gate-hate
/θ/-/s/	thank-sank, think-sink, thought-sought
/ð/-/z/	clothe-cloze, bathe-Baze, breathe-breeze
/dʒ/-/tʃ/	joke-choke, jump-chump, fridge-Fritch
/d/-/f/	dairy-fairy, date-fate, dive-five

This experiment will take 12 pairs of consonants as test objects, which are chosen based on prior literature. These consonants may be difficult for dialect speakers in the three major dialect regions of Jiangsu Province to perceive. Based on 12 pairs of consonants, words containing target consonants will be selected as minimal pairs. Each pair of consonants has 3 sets of words, and the words in the same set have the same composition of phonemes except for the control consonants. Another 4 pairs of consonants (/s/-/t/, /k/-/l/, /g/-/h/, /d/-/f/) and the 12 sets of words containing them are added in the test as interference to avoid participants realizing the purpose of the experiment. All word recordings are taken from the sound bank of the Longman Pronunciation Dictionary (2015) to ensure the accuracy of the pronunciation and avoid interference from non-standard accents. 48 target words (choosing from each set of words at random) will be edited in the same audio segment by using Adobe Audition 2019. Each word will be repeated twice with a 2-second pause, and the next word will be played after 5 seconds.

Table 1 shows the 12 pairs of consonants which are taken as test objects with another 4 pairs of consonants working as interference. Minimal pairs containing 16 pairs of consonants are also shown in Table 1.

4.3. Procedure

The experiment will be conducted in an environment free of noise and other disturbances. Before the experiment, the participants will be informed of the requirements of it. Several trials will be practiced for participants to be familiar with the experiment with the premise of not affecting the formal experiment. Participants will be required to wear headphones to listen to the recording which will be played at the appropriate volume. Each set of words will be displayed on the computer screen simultaneously when the recording is played. When participants hear the recording, they need to choose the correct one from two words by clicking on it within the 5-second pause.

4.4. Analysis

Accuracy and variance of discrimination tasks will be involved in the calculation as a measurement in the present study. Before analysis, the data of 16 interference words will be eliminate. Firstly, Excel 2021 will be used to calculate the accuracy of perception of 36 target words in three groups. Secondly, the perception accuracy of 12 groups will be counted separately on 3 groups to summarize the differences in consonant perception of people in different dialects regions. Thirdly, SPSS will be used to count the variance between every two groups of three groups, which can prove whether there is a significant difference in the influence of different dialects on the perception of consonants. Lastly, the variance of the three groups will also be calculated to infer the relationship between dialects and the perception of consonants.

5. Discussion

1) If all Jiangsu dialects have different influences on the perception of English consonants, the variance in the three groups will be significantly different. In this situation, if one dialect has an influence on the perception of one English consonant while other dialects have no influence on it, the accuracy of this group on the consonant will be significantly different from other groups.

2) If some Jiangsu dialects have different influences on the perception of English consonants, the variance between some two dialects will be not significantly different, and the variance of the rest will be significantly different. This may be because some two dialects have similar pronunciations. In this situation, if one dialect has an influence on the perception of one English consonant while another dialect does not influence the perception of this English consonant, the accuracy of the two groups on this consonant will be significantly different from each other.

3) If Jiangsu dialects have no different influence on the perception of English consonants, the variance in the three groups will not be significantly different.

6. Conclusion

This research takes the influence of dialects on the perception of English consonants as research object by adopting discrimination as an experimental method. By analyzing the accuracy and variance of the perception of target consonants, whether there is a significant difference on the perception of English consonants in different dialects will be verified. This study also invites more participants and adds more consonants that may be affected into the experiment, which can make itself more persuasive.

6.1. Implication

1) This study will fill the gap in the overall research on the influence of three major dialects in Jiangsu province on the English language learners' perception of consonants. It will also provide some evidence on the relationship between dialects and the perception of consonants, or English acquisition.

2) This study will help English language learners with dialect backgrounds, especially in Jiangsu province, have a better understanding of the perception of English consonants. After reading this study, they will pay more attention to the unconscious phonological transfer from their dialects to English.

3) This study will provide teaching key points to teachers who teach students English. They should take students' dialect background as one of the factors affecting English learning.

6.2. Limitation

The selection of English consonants in this study is based on prior literature without taking all English consonants as test objects. There may be some omissions for consonants that are difficult for dialect speakers in Jiangsu province to perceive.

Acknowledgement

First and foremost, the completion of this study is due to the hard work and contribution of our entire team. We would like to express our heartfelt thanks to the first author, Boyi Shi, the second author, Qianli Zhou, and the third author Jinfei Li.

Besides, we would especially like to thank our mentor Xia Wang for her careful guidance and support to our team. She provided us with invaluable advice and careful guidance and made enormous contributions to the successful completion of our thesis. Her patience and rigor supported us to finally complete this research.

We would also like to show our sincere gratitude to those previous scholars in related topics for their role in providing theoretical support and inspiration for our study.

Finally, we want to thank our families and friends for their support and encouragement so that we maintained a good attitude and motivation during the writing process.

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