Phonetic Transfer of Teochew Dialect to English Pronunciation Acquisition

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Abstract: The transfer of phonological features in the first language to second language pronunciation during the process of second language acquisition has long been attested. A great majority of studies analyze the negative transfer from Chinese to English, yet few focus on Chinese dialects' transfer to English. This paper aims to summarize the previous studies on Teochew phonological transfer to English acquisition, including consonant transfer, vowel transfer, and tonal transfer. Under the framework of Language Transfer Theory and Contrastive Analysis Hypotheses, research gaps and possible research directions for future studies will be put forward. This paper shows that phonetic transfer occurs in Teochew-speaking groups learning English, influenced by the dialects' consonants, vowels and likely tones. Further research should explore transfer causes across different age groups and test classroom phonetic correction methods for Teochew-speaking English learners.

Keywords: language transfer, Teochew dialect, English acquisition, phonetics

1.   Introduction

With the world experiencing deepening globalization, learning English as a second language is a necessity for Chinese people all around the country, not just in metropolitans such as Beijing, Shanghai and Guangzhou. Therefore, the focus on language transfer from Chinese to English becomes a hotspot of research to facilitate the correction of phonological mistakes. Apart from Mandarin, an official language spoken across the country, China is a country with ten major dialects and variations that are genetically related[1], but mutually unintelligible[2]. Linguistically from the perspective of intelligibility between dialects, Chinese dialects are more like 'languages'[3]. This may cause different language transfer phenomena in diverse dialect-speaking groups during the process of English acquisition.

As a subdialect of Min dialect, Teochew dialect is widely spoken in the Southeastern part of China, and Teochew dialect speakers who use this dialect frequently form the second largest population compared with other Chinese immigrants[4]. Given the importance of the Teochew dialect and the increasing demand for English learning in the relevant dialect-speaking areas, language transfer becomes a target for researchers. For teachers and English learners in the above-mentioned area, comparison studies on the Teochew dialect and English phonemes help to identify language transfer as well as solutions to it in the process of second language phonetic acquisition. From the social

aspect, studying the Teochew dialect is of great significance in that it corresponds with China's policy of dialect protection, enabling a deeper understanding of the dialect itself.

2.   Literature Review

2.1.   Negative Transfer of Chinese Dialects to English

The study of language transfer in China has profound reference significance for second language acquisition and second language teaching. Chen summarizes the overall trend of language transfer research in China based on the CNKI academic journal database in the past three decades from 1992 to 2021, focusing on research strength, research hotspots, and research frontiers[5]. The paper reveals that more and more attention has been paid to the study of language transfer in China with the range of research expanding, and the research on concept transfer is the hot spot and trend in this field. While rich experience in theoretical and empirical research has been attained in this field, relative ability in micro-field research and interdisciplinary research is lacking[5].

When it comes to phonetic transfer from Chinese dialects to English, Kong highlights the differences and similarities between the phonetic systems of the Shandong dialect and English, pointing out that some consonants in English and Mandarin initials are nearly identical, but many phonemes are absent from some Shandong dialects. Kong also reveals the impact of the Shandong dialect's phonetic characteristics on the students' English acquisition[6]. Chen conducted research on the occurrence and causes of phonetic negative transfer, as well as proposing appropriate remedies on the negative transfer of Hakka in the Gan dialect to English phonetic acquisition[7]. Ma carried out a more comprehensive comparative analysis of the phonology of the Sichuan dialect and English, examining the two phonologies' distinctions as well as the common mistakes learners make in the Sichuan dialect from two aspects: suprasegmental and segmental elements[8].

For dialects in Guangdong province, the southeast province of China, there are also a relatively large number of studies focusing on Cantonese, a trending dialect in Guangdong province and Hong Kong, but still few feature the Teochew dialect, a major dialect in the Chaoshan area. Numerous academics from Guangzhou and Hong Kong universities concentrate on the transfer of Cantonese words to English. Alice and David, for instance, compared the phonological systems of the Received Pronunciation of Cantonese and English to prepare for a systematic account of the issues and challenges Cantonese speakers face when acquiring English pronunciation. However, these years also witnessed an increasing trend of Teochew dialect studies, which will be introduced in the later chapter.

2.2.   Teochew Dialect

Among the ten major dialects in China, the Min dialect is one of the major dialects of the Chinese language distinguished mostly by phonetic characteristics[9]. Teochew, also known as Chaozhou dialect or Chaoshan dialect, is a Southern Min language spoken primarily by people in the eastern part of Guangdong province in China. The significant emigration from the Chaoshan area, including Shantou, Chaozhou, Jieyang, and Shanwei cities during the 18th to 20th centuries resulted in large Teochew-speaking communities in Thailand, Malaysia, Singapore, Indonesia, Vietnam, Cambodia, and beyond[4].

Teochew is not intelligible to either Mandarin or Cantonese speakers, with nearly 2000 years passed since Teochew and Mandarin diverged[10]. Teochew is one of the most traditional Chinese dialects according to linguists, preserving a great number of Old Chinese terms and idioms. Such uniqueness and widespread once again stress the necessity of taking Teochew as a target for research.

3.   Theoretical Framework

3.1.   Language Transfer Theory

First formed in the field of psychology in the early 20th century, the concept of "transfer" was extensively explored by Thorndike and Woodworth who conducted pioneering work on the theory of transfer of learning, particularly focusing on the idea of "identical elements." Their research examined how learning in one context could affect performance in another, emphasizing the importance of similarities between the contexts[11].

Later the term "transfer" was introduced by American linguist Robert Lado as a key concept in the field of applied linguistics and language learning. Language transfer is a process in which learners apply knowledge from their first language (L1) when learning a second language (L2), which can be positive facilitating learning, or negative causing interference or errors. Therefore, language transfer theory is applied as the theoretical framework in comparing the phonological features of different languages.

3.2.   Contrastive Analysis Hypotheses

Contrastive Analysis Hypotheses (CAH) were put forward by Robert Lado in 1957. This approach involves comparing two languages to identify similarities and differences. It was believed that by understanding these contrasts, educators could predict areas where language learners might face difficulties and therefore tailor their teaching strategies to address potential problems. Robert Lado's work, "Linguistics Across Cultures: Applied Linguistics for Language Teachers"[12], laid the foundation for both the language transfer theory and the contrastive analysis approach. In this work, Lado explained in detail how linguistic structures in a learner's native language could impact the learning of a new language, and how systematic comparisons between languages could aid in predicting and addressing language learning challenges[12].

There are two versions of Contrastive Analysis Hypotheses. The weak version of CAH uses the best linguistic knowledge present in both learners' L1 and L2 to account for observed difficulties in second language learning. The strong version of CAH claims to be predictive of the difficulties of second language learning based on contrastive analysis[13]. A higher percentage of papers prefer to adopt the weaker version of CAH whose emphasis is on the explanation of observable phonetic errors instead of on the predictive approach of difficulties faced by L2 learners.

4.   Phonetic Transfer of Teochew Dialect to English

4.1.   Teochew phonology

The nasal sound and plosive entering sound are the special characteristics of the Teochew dialect. In the Teochew dictionary, the dialects and accents in urban areas and counties are both generally studied as representative variations of the dialect. For the scholars, be it accents in a rural town or a city, the dialect is worth studying. Based on the notes by scholars in the Qing Dynasty and the materials written by Western missionaries, scholars have found that the Teochew dialect of the 19th century has a velar nasal sound. In the fieldwork, it was also found that there is a velar nasal sound in the accent of some places today. In 2013, Wu Fang comprehensively investigated more than 160 towns in Chaoshan area, and made a detailed description of the division and combination of alveolar and velar nasal sounds in various places. This research shows that while Mandarin as well as English have two nasal endings: the alveolar nasal /n/ and the velar nasal [ŋ], in Teochew dialect there is no alveolar nasal [n], only a velar nasal [ŋ][14]. Therefore, when people from the Chaoshan area speak Mandarin, they often can't distinguish between the front and back nasal sounds.

Another big difference between Teochew and Mandarin is that syllables may end with a stop: -t, -k, -p and -m, while a vowel or nasal is the only ending in Mandarin syllables[10]. Although the ending sounds of [t], [k], [p] and [m] exist in English, they are usually pronounced in English but not in Teochew.

Table 1: Consonants in Teochew[10]

	Bilabial	Alveolar	Velar	Glottal
Plosive	b [b] p[pʰ] bh[b]	d[t] t[tʰ] z[ts] c[tsʰ] r[dz]	g[k] k[kʰ] gh[g]	
Nasal	m[m]	n[n]	ng[ŋ]	
Fricative		s[s]		h[h]
Lateral		l[l]		

There are in total six basic vowels in Teochew and some of the variations have only five. [ɤ](v) is sometimes transcribed as [ɯ]. According to the acoustic diagram below indicating the position of the tongue while producing phonemes, the six vowels are shown in the figure below. It is an inverted triangle pattern, roughly balanced and symmetrical. In human language, inverted triangles are very common in vowel patterns[10].
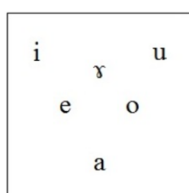

Figure 1: Vowels in Teochew[10]

The hardest part of learning Teochew for many people was the tones. Teochew has eight tones, which is difficult for non-native speakers to detect and produce. The tone of each syllable in Teochew varies based on the tone of the syllable that comes after it according to a sophisticated system of tone sandhi rules, which is also present in Mandarin to some extent[15]. Teochew, however, takes this to a completely new level by changing the contextual tone of almost every syllable. The following figure and table elaborate the way to note tones in Teochew.
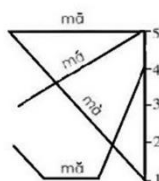

Figure 2: Tones in Mandarin[16]

Table 2: Tones in Teochew[10]

Tonal Categories	Yin Ping	Yin Shang	Yin Qu	Yin Ru	Yang Ping	Yang Shang	Yang Qu	Yang Ru
Tonal Values	33	53	213	2	55	35	11	5
Tonal Types	Mid Level	High Falling	Low Convex	Low Entering	High Level	High Rising	Low Level	High Entering
Symbols	di^1	di^2	di^3	dih^4	di^5	di^6	di^7	dih^8

4.2. Teochew Phonetic Transfer to English

4.2.1. Consonant Transfer

Phonetic transfer can be generally divided into three categories, namely consonant transfer, vowel transfer and tonal transfer. The transfer in consonants is easier to detect than that in vowels. Liu after comparing Chaoshanese students' pronunciation of English, found that many of them could not tell the differences between retroflex and lateral phonemes. They also have difficulty pronouncing fricatives, particularly labiodentals and interdentals[17]. The interference of the Chaoshan accent z[ts] in spoken English is also studied and the result also indicates a negative transfer[18]. Hu and Ye conducted an acoustic study on the negative transfer of voiceless plosive codas by Chaoshanese English as foreign language learners[19]. Liu compares the pronunciation of English consonants and the initials of the Chaozhou dialect, noting that students from Chaozhou struggle with pronouncing English consonants primarily in the labiodental, interdental, and other phonemes produced in some areas of the oral cavity because the dialect has few initial consonants, few places of pronunciation, and relatively simple pronunciation methods[20]. Other characteristics of Teochew are altering [f] with [h] and no [f] sound present in Teochew, which may cause transfer in the process of English acquisition.

4.2.2. Vowel transfer

Mistakes in vowels are harder to detect, especially for non-native English speakers, because although some of the vowels sound the same as that in English the position of articulation is different. Due to the lack of long vowels in Teochew, some of the Chaoshanese find it difficult to distinguish between short and long vowels. Liu presented experiment results on the negative transfer in English learning caused by the Chaoshan dialect, including difficulties in distinguishing between short and long vowels such as /u/ and /u:/, and the tendency for equating [æ] with [e][17]. While the vowels differ from each other, the time-consuming process of categorization and research results in no systematic studies on vowel transfer. This is a gap that needs to be filled by the following scholars.

4.2.3. Tonal transfer

Since Teochew-speaking individuals can distinguish between eight different tones, it seems that this may facilitate them in learning the intonation of English unconsciously. However, no relevant studies have looked into this and no tonal transfer phenomenon has been studied. This gap can be filled by further research and experiment.

To counteract the negative transfer, while concrete learning is still vital, teaching abstract principles has been demonstrated to aid in the development of skills across a wide range of tasks. Teachers should cultivate students' awareness of negative transfer in the English learning process and give detailed instructions on the position and way phonemes are pronounced. According to research, it is surprising that providing frequent and instant feedback does not always result in optimal training

because it enables students to identify and fix mistakes on their own. Intermittent and delayed feedback may result in better outcomes. Long-time training with listening material also helps but the relation between the time of training and performance is also tricky. Longer training may be helpful, but it can also make learners less flexible if it fails to take changes in the performance environment into account.

5.   Conclusion

In summary, phonetic transfer exists in the process of English acquisition in Teochew-speaking groups. Due to the different accents in five major Chaoshan groups and the phonetic changes throughout history, few generalizations can be made about transfer as a whole. Contrastive analysis between Teochew and Mandarin has been conducted but no systematic comparison between Teochew and English has been done yet. Also, existing studies limited their subjects to only college or university students, who may have been well-educated and influenced by Mandarin. More investigation and research should be carried out on each element that causes transfer among different age groups. Future studies can also test whether relevant training for phonetic correction in the classroom is helpful and further tailor more efficient methods for Teochew-speaking English learners.

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