International Journal of TESOL Studies (2024)
Vol. 6 (1) 46-61 https://doi.org/10.58304/ijts.20240104

Article

A Case Study of the Influences of ESL Speakers' Dialects on English Pronunciation

Kexuan Wu
University of Oklahoma, USA

Received: 13 February, 2024/Accepted: 14 April, 2024/Published: 19 April, 2024

Abstract
This case study aimed to investigate the influences of Chinese speakers' Southwestern dialects, which do not distinguish alveolar nasal /an/, /en/, /in/ and velar nasal /ang/, /eng/, /ing/ sounds, on their English pronunciation in words of these sounds. The study also explored whether Chinese speakers who spoke more standard Mandarin would have more accurate English pronunciations. The findings of the study revealed that most Chinese Southwestern dialects speakers could not perform velar nasal sounds in Chinese Mandarin, which also influenced them to perform velar nasal sounds in English. This study also found that Chinese Mandarin speakers showed more advantages in the English pronunciation of velar nasal sounds than Chinese Southwestern dialect speakers. There is a significant, positive, moderate correlation between the Mandarin Proficiency Test and IELTS Speaking Pronunciation, suggesting that Chinese speakers who achieved a higher level on the Mandarin Proficiency Test also achieved a higher level on IELTS Speaking Pronunciation overall. Furthermore, this study provides insights into researching the influence of diverse dialects on English pronunciations among English as a Second Language speakers.

Keywords
English pronunciation, Chinese dialects, alveolar nasal sounds, velar nasal sounds

1. Introduction

China has fifty-six ethnic groups, with the Han Chinese as the majority and the other 55 groups as minorities, and many of which have their own dialects (Zhou, 2003). According to Tang and Heuven (2009), The Chinese language consists of many varieties. Dialectologists have classified various Chinese dialects based on phonological features and tone, including several regional dialects within each language group. Chinese language can be divided into Mandarin and Southern branches, and the Southern branch includes Wu, Gan, Xiang, Min, Hakka, and Cantonese. The mutual unintelligibility of Chinese language characteristics demands a common language that people from different regions can communicate and understand, which is Mandarin, also called Putonghua (meaning common speech), the official spoken language in China.

Email: kwu@ou.edu

Tang and Heuven (2009) advanced the term Mutual Intelligibility as a meaningful way to argue about linguistic distance. The researchers purport that if the degree of mutual intelligibility between two languages is high, then the linguistic differences between the two languages are low. On the contrary, if the degree of mutual intelligibility between two languages is low, the linguistic differences between the two languages must be radical. Based on the characteristics of tone and phonology of Chinese dialect, Chinese dialectologists proposed various classifications of the Chinese language varieties and agreed that the Chinese language can be divided into the Mandarin branch and the Southern branch. Generally, the degree of mutual intelligibility between language varieties within the Southern branch is much lower than that language varieties' intelligibility within the Mandarin branch. Tang and Heuven (2009) stated that Chinese Southwestern language varieties belong to the Mandarin branch. However, the Southwestern region is also very mountainous, especially Yunnan Province and Guizhou Province, which are further away from the Northern Mandarin region than other regions, such as Zhongyuan, Beijing, or Northeastern regions. Although Southwestern language varieties belong to the Mandarin branch, their degree of mutual intelligibility is much lower than that of other Mandarin varieties, such as Zhongyuan Mandarin, Beijing Mandarin, or Northeastern Mandarin. Some Southwestern dialects do not distinguish between /n/ and /l/, blade-alveolars /z/, /c/, /s/ and cacuminal /zh/, /ch/, /sh/. They also have difficulty distinguishing between alveolar nasal sounds /an/, /en/, /in/ and velar nasal sounds /ang/, /eng/, /ing/.

Pronunciation has been a crucial role in effective and successful communication in output and input aspects. Although mispronunciations among foreign language learners are not uncommon, as the foreign accent they acquire is influenced by the phonetic features and intonation characteristics of their first language (L1) (Avery & Ehrlich, 1992), pronunciation has been a common concern in terms of confidence and encouragement in speaking language among second language (L2) learners (Bang, 1999). Intelligible pronunciation is one of the fundamental features of learners' capacity and ability as well as one of the most significant language instructions. Understandable pronunciation promotes learning efficiency whereas ambiguous pronunciation leads to great difficulties and challenges in language learning (Gilakjani, 2012). Chinese learners of English encounter difficulties with certain vowels, consonants, stress, and intonation. For example, they frequently mix up sounds like /aɪ/ with /æ/ and /e/. This leads to challenges for native English speakers in understanding words like "bide", "bad", and "bed" when pronounced by Chinese learners. Additionally, Chinese speakers commonly struggle with English dental fricatives such as /θ/ and /ð/ since Mandarin Chinese lacks these sounds. Thus, teachers were suggested to explain the key differences between the phonological systems of English and Chinese to students, and to create instructional materials and effective pronunciation exercises targeting these areas. (Han, 2013). Pronunciation is an essential and critical feature in speaking and communication in learning English as a Second Language (ESL), and many ESL teachers emphasize facilitating students' pronunciation in language proficiency (Rajadurai, 2001).

China is the country with the largest population in the world, and there are numerous Chinese speakers whose L1 is Mandarin and who learn English as a Second Language (ESL). However, many dialects are also spoken in China, and some dialects are similar to Mandarin syllabically but are different from Mandarin phonemically. China uses *Pinyin* as a standard Romanization System, which transcribes Mandarin Chinese characters into the Latin alphabet as the segments of morpheme of Mandarin (Godfroid et al., 2017)), thus, the study uses *Pinyin* to identify different pronunciations between Mandarin and some dialects of Chinese. The purpose of the study is to investigate whether Chinese speakers' Southwestern dialects, which do not distinguish alveolar and velar nasal in *Pinyin*, influence these speakers' English pronunciation in words of these sounds. Additionally, this study aims to investigate whether Chinese native speakers who speak more standard Mandarin (referring to the Mandarin Proficiency Test rubric), would have more accurate English pronunciation (referring to the IELTS Speaking Pronunciation rubric). Furthermore, this study intends to provide insights into future research to investigate the influence of diverse dialects of other languages on learning ESL.

2. Literature Review

2.1 The effect of first language and linguistic transfer in second language acquisition

It is widely observed that learners' L1 can influence learners' second language (L2) acquisition as L2 learning is dependent on the interaction between the previously learned L1 systems and the newly acquiring L2 system (Huang, 2010; Kim et al., 2017). According to Ortega (2013), every process of acquiring L2 requires the knowledge and experience of their L1 or other previously acquired languages, which have influences on L2 acquisition. Odlin (2006) explained that linguistic transfer is the outcome, which is caused by the differences and similarities between the formerly acquired language and the target language, and has an acceleration or inhibition effect on the learners' acquisition of another language. Corder (1973) suggested that second language acquisition is an accumulation of actions, in which L1 interference may cause negative transfer. However, L1 can also aid in L2 learning through positive transfer. Both of these language learning processes can explain the transfer among different languages. Additionally, language transfer occurs not only in words or sounds, but also in syntax and culture.

Speakers' script-reading skills in L1 can effectively influence their script-reading skills in L2, and different L1 speakers approach their L2 reading differently. Wang et al. (2003) investigated two groups of ESL college students. The first group consisted of Korean ESL learners with an alphabetic L1 background, while the second group consisted of Chinese ESL learners with a non-alphabetic L1 background. An alphabetic language system refers to a language that selects phonemes or syllables to represent spoken language, while a non-alphabetic language system refers to a language that selects words or morphemes. The study combined self-rated English proficiency in listening and script-reading, familiarity ratings of the test materials, and experimental tasks to explore phonological and spelling similarity. The study clarified the relationship between orthography to phonology in script-reading literature and found that Korean or Chinese reading skills influence English reading differently. Korean speakers approached reading phonologically in their L1 (due to their alphabetic system) and performed better in achieving phonological information in English. Meanwhile, Chinese speakers approached reading orthographically in their L1 (due to their non-alphabetic system) and performed better in gaining orthographic information in English.

Phonological awareness is defined as the ability that allows the learner to recognize the sounds of small phonological units and analyze these units (Yang et al., 2017). Chien et al. (2008) conducted a study in Taiwan to investigate the role of phonological awareness development of Chinese English language learners using six tests, such as syllable awareness, initial phoneme oddity, final phoneme oddity, medical phoneme oddity, final phoneme deletion, and initial phoneme deletion. The study showed cross-linguistic transfer from Chinese as L1 to English as L2 among phonological awareness is mainly observed at the phoneme and syllable levels. The researchers concluded that Chinese phonological awareness can predict English phonological awareness.

A large number of people who speak Chinese as their L1 are learning English as their L2 in the United States, Canada, the United Kingdom, and China. As a result, linguistic researchers were motivated to explore the linguistic dynamics and relations between Chinese and English because transfer plays a crucial role in SLA. Gittardo et al. (2017) studied 117 Chinese-English bilingual high school and college students residing in a metropolitan center in Canada. In this study, all participants have lived in Canada for over six months and they were divided into two groups according to the length of residence in Canada. The participants were tested through both English vocabulary, word formation, sentence structure, and grammar to examine the models of English and Chinese word reading. The result revealed that reading in English is affected by L1 among Chinese-speaking adolescents and young adults.

The learning of English as an L2 is facilitated for children whose first languages use an alphabetical system, such as Spanish, French, and Italian (Yang et al., 2017). Previous studies have shown that L1 can have an impact on both the phonetic and phonological aspects of L2 acquisition (Backman, 1979;

Barlow, 1998; Lepetit, 1989; Luo, 2017; Mennen, 2007; Yang & Chan, 2010; Ueyama, 2000; Willems, 1982). For instance, in English, a falling pitch is used for predicative statements, while in Mandarin, it indicates both statements and questions with different tones. Similarly, a rising pitch in English represents questions, but it can indicate statements and questions in Mandarin. English speakers learning Mandarin are more sensitive to perceiving information when the intonation and tone match.

However, not all L1 influences on L2 are negative. Research evidence on cross-linguistic transfer sheds light on the positive influence of L1 on L2 or foreign language learning. For instance, a laboratory study was designed to investigate whether native speakers of a tone language have an advantage in learning another tone language compared to learners with a non-tone language background. Participants included 6 Thai native speakers, 6 English native speakers, 6 Taiwanese native speakers, and 1 Mandarin Chinese native speaker. All participants were tested through minimal pairs (e.g., /pan/ = to share and /pàn/= to pedal) in order to contrast the low and mid-tones of Thai. The study illustrated that participants whose L1 was a tone language, such as Mandarin, were better at identifying and distinguishing between low and mid Thai tones than participants whose L1 was an intonation language, such as English (Wayland et al., 2004).

2.2 Dialects of Chinese and the influences on English pronunciation

Although L1 and L2 have a large number of differences in linguistics, lexicon, phonology, and so forth, most people acquiring an L2 develop literacy based on the development of their L1 literacy (Hudson, 2007). Many minority groups have their own dialects in China, creating problems with pronouncing some sounds in standard Mandarin. In this case, their L1 dialects significantly influence their speaking in Mandarin, which is a fact among Chinese people who speak dialects. Studies have shown that different dialects of Chinese influence English pronunciation (Zhang & Yin, 2009; Luo; 2014; Chen; 2016; Huang, 2017). English learners from Yunnan Province found it difficult to distinguish between /æ/ and /e/ in English words such as “bad” and “bed” (Zhang & Yin, 2009). In some local dialects in Jiangxi Province, people pronounce /f/ as /l/, which causes some problems with English pronunciation (Luo, 2014). English learners from Hubei Province often have trouble pronouncing the word “very”, instead /veri/, they pronounce it as /weri/ (Chen, 2016). People who speak Wenzhouness, a dialect in Fujian Province, commonly mispronounce /θ/ as /s/ and /ð/ as /z/, for instance, English learners who speak Wenzhouness say “thanks” as “sanks” (Huang, 2017). In addition, Li and Wayland (2006) found that native speakers whose dialects do not distinguish /n/ and /l/ have difficulty distinguishing these two sounds in English.

Chinese is one of the most widely spoken languages as nearly one-fourth of the population in the world speaks Chinese as a native language (Hua, 2002). There are many dialects spoken in China, such as Cantonese, Min, Wu, Hakka, and Ping. Most children whose families speak dialects in China learn to speak the local dialect and Mandarin when they are born. Children speak dialects with their parents, other family members, friends, and other local people, while Mandarin is spoken at school or only in class. Cui and Heuven (2011) stated that Chinese dialects share similar pronunciation features but are linguistically different from each other, similar to certain European languages, such as Spanish, Portuguese, and Italian, within the same phylum.

Oral language as one of the basic skills for language learners plays an important role in language learning, and pronunciation plays a foundational role in communication. For learners learning English as L2, mastering English pronunciation is one of the most important aspects to achieve high proficiency in English. However, every language has its own characteristics and rules, and based on second language acquisition theory, learners’ L1 has influences on the acquisition of L2. Even though Mandarin Chinese is the common language used in China, the varieties of Chinese dialects also influence Chinese English language learners’ process of acquiring English. Cui and Heuven (2011) found that when learners of English from the same native language background communicate with each other, their mutual

intelligibility is better compared to communication with different native language backgrounds English learners. Their study addressed the effect of L1 Chinese on L2 English production and perception. More specifically, their study confirmed Chinese English language learners' pronunciation of English vowels is different based on the learner's dialect background.

Previous studies have explored the effect of L1 and linguistic transfer on L2 and the influence of dialects of Chinese on English pronunciations. This study aims to investigate the influence of Chinese speakers' Southwestern dialects on their English pronunciation in words, and whether Chinese native speakers who achieve a higher level on the Mandarin Proficiency Test correlate with achieving a higher level on the IELTS Speaking Pronunciation. Two research questions were developed to guide this study:

1. Do Chinese Mandarin speakers have more accurate pronunciation of alveolar nasal /an/, /en/, /in/ and velar nasal /ang/, /eng/, /ing/ sounds in English than Chinese Southwestern dialects speakers?
2. Do Chinese speakers who achieve a higher level on Mandarin Proficiency Test achieve a higher level on IELTS Speaking Pronunciation?

3. The Current Study

3.1 Context the of research

This study uses interviews and audio materials within a real-life context to explore an issue (Creswell & Creswell, 2018), and a purposeful sampling method was applied in this research to recruit twenty participants who aged between 18-19 and came from the Southwestern language region and Northern Mandarin regions of China. Ten participants from the Southwestern language region were labeled as Southwest 1-10, including 4 males and 6 females. Ten participants from the Northern Mandarin region were labeled as North 1-10, including 3 males and 7 females. All participants were asked to read aloud 12 short sentences in Chinese characters (Appendix 1), 12 short sentences in English (Appendix 2), a short passage in Chinese (Appendix 3), and a short passage in English (Appendix 4). The researcher plays multiple roles in this study. Firstly, as a Chinese and English bilingual, the researcher can effectively evaluate the participants' Mandarin and English pronunciation. Secondly, the researcher, with experience in teaching ESL in China and the U.S. can adequately evaluate the participants' performance. Thirdly, the researcher received advanced education in second language acquisition, linguistics, language learning theories, and practices, making the researcher a reliable resource to evaluate the participants.

3.2 Data analysis

The provided Chinese texts were in Chinese characters only to ensure that participants' scripted-reading is based on their language background, while *Pinyin* was only included in this paper to help readers identify the testing sounds. Both Chinese and English reading materials had the alveolar nasal and velar nasal sounds matched with different vowels to allow participants multiple opportunities to pronounce these sounds, and for the researcher to analyze the data comprehensively. Short sentences in Chinese and English were used to assess participants' pronunciation of these nasal sounds, and the researcher analyzed the frequency of their performance. Short passages in Chinese and English were used to test participants' proficiency in standard Mandarin and English pronunciation accuracy. The Mandarin Proficiency Test Standards (Appendix 5) and IELTS Speaking Pronunciation rubric (Appendix 6) were employed to evaluate participants' pronunciation in Chinese and English. Additionally, the researcher analyzed the data from various perspectives, including individual and regional group performance of alveolar and velar nasal sounds in reading short sentences, and individual and group pronunciation of reading short passages.

4. Findings

The researcher analyzed the data from different perspectives. Firstly, the researcher analyzed participants' performance of alveolar nasal sounds and velar nasal sounds in reading both Chinese and English short sentences by regional group and individually. Then, the researcher analyzed participants' pronunciation performance in reading both Chinese and English short passages by regional group and individually. Analyzing the data by regional group and individually aimed to provide a more comprehensive answer to the research questions.

4.1 Chinese Southwestern dialects influence speakers' English pronunciation

To answer the first research question about whether Chinese Mandarin speakers have the more accurate pronunciation of alveolar nasal sounds /an/, /en/, /in/ and velar nasal sounds /ang/, /eng/, /ing/ in English than Chinese Southwestern dialects speakers, the researcher analyzed if participants who perform alveolar nasal and velar nasal sounds in Chinese short sentences would also perform these sounds in English short sentences. Table 1 and Table 2 show the two groups' frequencies of performances for alveolar and velar nasal sounds in Chinese and English short sentences.

Table 1

Performances in Chinese Short Sentences by Group

North	Frequencies (%)	Southwest	Frequencies (%)
/an/	20 (100%)	/an/	20 (100%)
/ang/	20 (100%)	/ang/	4 (20%)
/en/	20 (100%)	/en/	19 (95%)
/eng/	20 (100%)	/eng/	0 (0%)
/in/	20 (100%)	/in/	20(100%)
/ing/	20 (100%)	/ing/	0 (0%)

Table 2

Performances in English Short Sentences by Group

North	Frequencies (%)	Southwest	Frequencies (%)
/æn/	18(90%)	/æn/	20(100%)
/æŋ/	10(100%)	/æŋ/	2(20%)
/en/	20(100%)	/en/	20(100%)
/eŋ/	16(80%)	/eŋ/	4(20%)
/ɪn/	19(95%)	/ɪn/	19 (95%)
/ɪŋ/	30(100%)	/ɪŋ/	4(13%)

In reading Chinese short sentences, Northern participants performed 100% of alveolar nasal and velar nasal sounds, Southwestern participants performed 20% of the velar nasal sound /ang/ and performed 0% of the velar nasal sounds /eng/ and /ing/. In English short sentences, Northern participants performed 100% of velar nasal sounds /æŋ/ and /ɪŋ/, and 80% of the velar nasal sound /eŋ/. Southwestern participants could only perform 20% of the velar nasal sounds /æŋ/ and /eŋ/, 13% of the velar nasal sounds /ɪŋ/.

Moreover, according to Li and Wayland (2006), Chinese native speakers whose dialects do not distinguish /n/ and /l/ have difficulty distinguishing these two sounds in English. In this research, the researcher found that Southwest 5, 7, and 9 could not distinguish /n/ and /l/ in Chinese, and they also could not distinguish these two sounds in English:

Southwest 5: 我在整理材料。*[Wǒ zài zhěng lǐ cái liào(niào).]*
A book is not(lot) judged only on its length(nength).

Southwest 7: 我在整理材料。*[Wǒ zài zhěng lǐ cái liào(niào).]*
A book is not judged only(onny) on its length(nength).

Southwest 9: 我在整理材料。*[Wǒ zài zhěng lǐ cái liào(niào).]*
A book is not(lot) judged only on its length(nength).

Table 3 and Table 4 show the individual participants' frequencies of performance for alveolar and velar nasal sounds in Chinese and English short sentences.

Table 3
Performances in Short Sentences by Northern Participants

Participant	Frequencies in Chinese	Frequencies in English
North 1	12(100%)	10(83%)
North 2	12(100%)	10(83%)
North 3	12(100%)	12(100%)
North 4	12(100%)	12(100%)
North 5	12(100%)	10(83%)
North 6	12(100%)	12(100%)
North 7	12(100%)	11(92%)
North 9	12(100%)	12(100%)
North 8	12 (100%)	12(100%)
North 10	12(100%)	12(100%)

Table 4
Performances in Short Sentences by Southwestern Participants

Participant	Frequencies in Chinese	Frequencies in English
Southwest 1	6(50%)	6(50%)
Southwest 2	6(50%)	6(50%)
Southwest 3	6(50%)	9(75%)
Southwest 4	7(58%)	9(75%)
Southwest 5	6(50%)	7(58%)
Southwest 6	6(50%)	6(50%)
Southwest 7	8(67%)	7(58%)
Southwest 8	6(50%)	7(58%)
Southwest 9	6(50%)	7(58%)
Southwest 10	6(50%)	6(50%)

Among the Northern participants, all of them were able to perform 100% of the alveolar nasal and velar nasal sounds when reading Chinese short sentences. However, in reading English short sentences, North 1 was only able to perform 83% of the sounds due to difficulty with the velar nasal sound /eŋ/ in the word "length" and /ɪŋ/ in the word "handwriting". Similarly, North 2 also performed 83% of the sounds due to pronouncing the alveolar nasal sound /æn/ of the words "plan" and "fan" as /æŋ/ (as in "plan(g)" and "fan(g)"). North 5 had a similar performance, as she was also unable to perform the velar nasal sound /eŋ/. Among the Southwestern participants, Southwest 1, 2, 6, and 10 only performed 50% of the sounds in both Chinese and English. They had difficulty performing all of the velar nasal sounds in Chinese short sentences, and could not perform velar nasal sounds in English short sentences.

More specifically, Southwest 3 performed 50% of the sounds in Chinese short sentences as she could not produce all the velar nasal sounds. In English short sentences, she was able to perform 75% of the sounds but struggled with the velar nasal sounds /eŋ/ and /ɪŋ/ in the word "sing". Southwest 4 performed 58% of the sounds in Chinese, but he struggled with the alveolar nasal sound /en/ in the word "pén", and velar nasal sounds /eng/ and /ing/. In English short sentences, he was able to produce 75% of the sounds but struggled with the velar nasal sounds /æŋ/ and /ɪŋ/. Southwest 5 performed 50% of the sounds in Chinese short sentences but struggled with all the velar nasal sounds. In English short sentences, he performed 58% of the sounds but struggled with the velar nasal sounds /æŋ/ and /eŋ/ in the word "strength", the alveolar nasal sound /ɪn/ in the word "skin", and velar nasal sounds /ɪŋ/ in the words "King" and "sing". Southwest 7 performed 67% of the sounds in Chinese short sentences but struggled with velar nasal sounds /eng/ and /ing/. In English short sentences, she performed 58% of the sounds but struggled with the velar nasal sounds /æŋ/, /eŋ/ in the word "strength", and the velar nasal sound /ɪŋ/. Southwest 8 performed 50% of the sounds in Chinese short sentences as she could not perform any velar nasal sounds in Chinese short sentences. In English short sentences, she was able to produce 58% of the sounds but struggled with the velar nasal sounds /æŋ/, /eŋ/ and the velar nasal sound /ɪŋ/ in the words "handwriting" and "sing". Southwest 9 performed 50% of the sounds in Chinese short sentences as he could not perform any velar nasal sounds. In English short sentences, he performed 58% of the sounds but struggled with the velar nasal sounds /eŋ/ or /ɪŋ/.

4.2 Correlation between Mandarin Proficiency and IELTS Speaking Pronunciation

Table 5 and Table 6 show the individual participant's achievements on the Mandarin Proficiency Test and IELTS Speaking Pronunciation.

Table 5

Achievements on Mandarin Proficiency Test and IELTS Speaking Pronunciation (Northern)

Participant	Mandarin Proficiency Test	IELTS Speaking Pronunciation
North 1	Advanced-low	Band 7
North 2	Advanced-low	Band 6
North 3	Advanced-high	Band 6
North 4	Advanced-low	Band 7
North 5	Advanced-low	Band 7
North 6	Advanced-low	Band 7
North 7	Advanced-low	Band 6
North 8	Advanced-low	Band 7
North 9	Advanced-low	Band 7
North 10	Advanced-low	Band 5

North 1, 4, 5, 6, 8, and 9 achieved Advanced-low on the Mandarin Proficiency Test and Band 7 on the IELTS Speaking Pronunciation as they showed occasional mistakes in reading the Chinese short passage, but the tone was natural. In reading the English short passage, they showed occasional lapses but were easy to understand. North 2 and 6 achieved Advanced-low on the Mandarin Proficiency Test and Band 6 on the IELTS Speaking Pronunciation as they showed occasional mistakes in reading the Chinese short passage, and some mispronunciation of a few words, but they could be generally understood in reading the English short passage. North 3 achieved Advanced-high on the Mandarin Proficiency Test and Band 6 on the IELTS Speaking Pronunciation as their phonetic standards, words, and grammar were correct in reading the Chinese short passage, but they showed a few mispronunciations and mistakes in sounds and words, which could generally be understood in reading the English short passage. North 10 achieved Advanced-low on the Mandarin Proficiency Test and Band 5 on IELTS Speaking Pronunciation because he showed occasional mistakes in reading the Chinese short passage, and frequent lapses and mispronunciations but could generally be understood in reading the English short passage.

Table 6

Achievements on Mandarin Proficiency Test and IELTS Speaking Pronunciation. (Southwestern)

Participant	Mandarin Proficiency Test	IELTS Speaking Pronunciation
Southwest 1	Intermediate-high	Band 7
Southwest 2	Intermediate-high	Band 5
Southwest 3	Intermediate-high	Band 7
Southwest 4	Intermediate-high	Band 7
Southwest 5	Intermediate-low	Band 5
Southwest 6	Intermediate-low	Band 6
Southwest 7	Intermediate-high	Band 4
Southwest 8	Intermediate-high	Band 6
Southwest 9	Foundation-high	Band 4
Southwest 10	Intermediate-high	Band 5

Southwest 1, 3, and 4 achieved Intermediate-high on the Mandarin Proficiency Test and Band 7 on IELTS Speaking Pronunciation as the participants showed a few mistakes, could not differentiate alveolar nasal and velar nasal sounds in reading Chinese short sentences, and showed occasional lapses and a few mistakes in reading English short passage. Southwest 2 and 10 achieved Intermediate-high on the Mandarin Proficiency Test and Band 5 on IELTS Speaking Pronunciation, as participants could not differentiate alveolar nasal and velar nasal sounds and mispronounced a few words in reading the Chinese short passage and showed mispronunciation of some words and sounds and frequent lapses in English reading. Southwest 5 achieved Intermediate-low on the Mandarin Proficiency Test and Band 5 on IELTS Speaking Pronunciation, as the participant could not differentiate alveolar nasal and velar nasal sounds and side nasal sounds in reading the Chinese short passage, and showed mispronunciation of some words and sounds and frequent lapses in English reading. Southwest 6 achieved Intermediate-low on the Mandarin Proficiency Test and Band 6 on IELTS Speaking Pronunciation, as the participant could not differentiate flat tongue sounds, alveolar nasal and velar nasal sounds, and side nasal sounds in reading the Chinese short passage, and showed mispronunciation of a few words and sounds but could be generally understood throughout. Southwest 7 achieved Intermediate-high on the Mandarin Proficiency Test and Band 4 on IELTS Speaking Pronunciation as the participant could not differentiate a few alveolar nasal and velar nasal sounds and flat tongue sounds in reading in the Chinese short passage, and showed a limited range of pronunciation and caused difficulty for the listener to understand in reading

English short passage. Southwest 8 achieved Intermediate-high on the Mandarin Proficiency Test and Band 6 on IELTS Speaking Pronunciation, as the participant could not differentiate a few alveolar nasal and velar nasal sounds and had a few mistakes in reading the Chinese short passage. The participant showed some effective use of features, but had mispronunciation of a few words that reduced clarity in reading the English short passage. Southwest 9 achieved Foundation-high on the Mandarin Proficiency Test and Band 4 on IELTS Speaking Pronunciation as the participant showed more errors and mistakes in words and sounds and dialect tone was obvious in reading the Chinese short passage, and in English short passage, the participant used a limited range of pronunciation features and showed frequent mispronunciations in sounds.

To answer the second research question about whether Chinese speakers who achieve a higher level on Mandarin Proficiency Test can achieve a higher level on IELTS Speaking Pronunciation, the researcher analyzed if participants who scored higher levels on the Chinese short passage would also score higher levels on the English short passage. There are six levels in total for the Mandarin Proficiency Test Standards, from the highest level to the lowest level: Advanced-high, Advanced-low, Intermediate-high, Intermediate-low, Foundation-high, and Foundation-low. There are seven bands from IELTS Speaking Pronunciation, from the highest band to the lowest band: Band 9 to Band 3. As participants' Mandarin proficiency ranges from Advanced-high to Foundation-high, five scores were assigned: Advanced-high as 5, Advanced-low as 4, Intermediate-high as 3, Intermediate-low as 2, and Foundation-high as 1. Five scores were also assigned for IELTS Speaking Pronunciation: IELTS 7 as 5, IELTS 6 as 4, IELTS 5 as 3, IELTS 4 as 2, and IELTS 3 as 1. Chinese Mandarin speakers show more advantages in English pronunciation than Chinese Southwestern dialect speakers, as Northern participants achieved a mean of 4.2 and Southwestern participants achieved a mean of 2.6 on the Mandarin Proficiency Test. Northern participants achieved a mean of 4.5 and Southwestern participants achieved a mean of 3.6 on the IELTS Speaking Pronunciation. Besides, results showed a significant, positive, moderate correlation between the Mandarin Proficiency Test and IELTS Speaking Pronunciation, $r(20) = .52$, $p < .002$.

5. Discussion

Learners' L2 acquisition depends on the interaction between their L1 systems and the newly acquiring L2 system (Huang, 2010; Kim et al., 2017), and learner's L1 influences L2 acquisition on both phonetic level and phonological level (Backman, 1979; Barlow, 1998; Lepetit, 1989; Luo, 2017; Mennen, 2007; Yang & Chan, 2010; Ueyama, 2000; Willems, 1982). Based on the data analysis by regional groups, the data indicated that Chinese Southwestern dialects influence English pronunciation in words containing velar nasal sounds. In reading Chinese short sentences, Northern participants performed all alveolar and velar nasal sounds, while Southwestern participants could only perform alveolar nasal sounds. Besides, Southwestern participants could only perform 20% of the velar nasal sounds with /a/ vowel, none of them performed velar nasal sounds with /e/ vowel or /i/ vowel. In reading English short sentences, Northern participants performed 100% of the velar nasal sounds with /æ/ vowel and /ɪ/ vowel, and 80% of the velar nasal sounds with /e/ vowel. However, Southwestern participants only performed 20% of velar nasal sounds with /æ/ vowel, 20% of velar nasal sounds with /e/ vowel, and 13% of velar nasal sounds with /ɪ/ vowel.

Similarly, based on the data analysis by individuals, Northern participants performed 100% of the alveolar nasal and velar nasal sounds in Chinese short sentences and performed 83% - 100% of alveolar and velar nasal sounds in English short sentences. Whereas, Southwestern participants performed 50% - 67% of alveolar nasal and velar nasal sounds in Chinese short sentences and 50% -75% of alveolar and velar nasal sounds in English short sentences. As Southwestern participants' dialects have influences on their pronunciation in English, the finding suggests that the majority of Southwestern participants could not perform velar nasal sounds in Chinese, nor could they perform velar nasal sounds in English. In addition, Li and Wayland (2006) found that Chinese speakers whose dialects do not differentiate /

n/ and /l/ also have difficulty differentiating between these two sounds in English. In this study, some Southwestern participants could not distinguish /n/ and /l/ in Chinese, they also could not distinguish /n/ and /l/ in reading English.

The dialects of Chinese speakers learning English as a foreign language have been found to influence their English pronunciation in previous studies (Zhang & Yin, 2009; Luo, 2014; Chen, 2016; Huang, 2017). Additionally, the degree of mutual intelligibility between two languages is negatively correlated with linguistic differences between the two languages (Tang & Heuven, 2009). Compared to Chinese southwestern dialects, Mandarin Chinese and English have higher mutual intelligibility as the southwestern dialects do not differentiate between alveolar and velar nasal sounds.

The study's findings indicate that Northern participants who speak Mandarin have more advantages in English pronunciation than Southwestern participants who speak Southwestern dialects, as the results showed a significant, positive, moderate correlation between Mandarin Proficiency Test and IELTS Speaking Pronunciation, $r(20)= .52$, $p< .002$, which also suggest that Chinese speakers who achieve a higher level on Mandarin Proficiency Test achieve a higher level on IELTS Speaking Pronunciation overall.

6. Conclusion and Implication

China is home to a large number of ethnic groups, many of which have their own languages. In the southwestern region of China, several dialects do not differentiate between side nasal sounds /n/ and /l/, and some dialects also do not distinguish between flat tongue sounds /z/, /c/, /s/ and /zh/, /ch/, /sh/. Additionally, some dialects do not differentiate between alveolar nasal and velar nasal sounds /an/, /en/, /in/ and /ang/, /eng/, /ing/. It is commonly observed that L1 influences the acquisition of L2, and the differences and similarities between previously acquired language and target language can lead to linguistic transfer. Although a large number of people in China speak Mandarin Chinese, there are still many minority groups who speak dialects. Studies have shown that the pronunciation of English vowels by Chinese learners varies depending on their linguistic background. Therefore, this study was designed to investigate the influence of the Chinese Southwestern dialects on English pronunciation.

This study found that the majority of Chinese Southwestern dialect speakers struggle with performing velar nasal sounds in both Chinese Mandarin and English due to the lack of these sounds in their dialects. The study also confirmed the findings of Li and Wayland's (2006) study that speakers of Chinese Southwestern dialects, whose dialects do not distinguish between /n/ and /l/ in Mandarin, have difficulty distinguishing between these two sounds in English. Furthermore, the study revealed that speakers from Northern China who speak Mandarin have an advantage in performing velar nasal sounds in English compared to speakers from Southwest China and suggested that Chinese speakers who achieve a higher level on Mandarin Proficiency Test achieve a higher level on IELTS Speaking Pronunciation overall. However, the sample size in this study is relatively small. Further studies could expand the number of participants to increase the credibility and generalizability of the research.

Furthermore, future studies could investigate the influence of other Chinese dialects, such as Cantonese, Wu, Min, etc., on English pronunciation. It would be interesting to explore whether dialects that do not distinguish between flat tongue sounds, such as /z/, /zh/, /c/, /ch/, and /s/, /sh/, affect speakers' English pronunciation of these sounds. Additionally, future studies could investigate the influences of diverse dialects of other languages, such as Latin-American Spanish and European Spanish, Canadian French and European French, on speakers' English pronunciation or ESL learning.

Ethical Statement

The study followed the research guidelines and ethical standards and was approved by Institutional Review Board of the university as the requirement to conduct human subjects research. Students' oral

consent to participate in the research was obtained by recording the consent. To protect participants' privacy and represent their backgrounds and experiences accurately, anonymous identifiers were used during the description process. All the recordings were kept in a safe folder with a password protection.

Appendixes

Appendix 1 Short sentences in Chinese contains alveolar nasal and velar nasal sounds.

an	我们一起吃饭吧。[Wǒ men yī qǐ chī **fàn** ba.] 你们不必为我担心。[Nǐ men bù bì wèi wǒ **dān** xīn.]
ang	今天的海浪很大。[Jīn tiān dì hǎi **làng** hěn dà.] 他把车驶入了小巷。[Tā bǎ chē shǐ rù le xiǎo **xiàng.]**
en	这本书太陈旧了。[Zhè běn shū tài **chén** jiù le.] 石头打破了你的花盆。[Shí tou dǎ pò le nǐ de huā **pén.**]
eng	祝你生日快乐！ [Zhù nǐ **shēng** rì kuài lè!] 我在整理材料。[Wǒ zài **zhěng** lǐ cái liào.]
in	信誉就是一切。[**Xìn** yù jiù shì yī qiè.] 这就是失败的原因。[Zhè jiù shì shī bài de yuan **yīn.]**
ing	他只是一个平凡的人。[Tā zhǐ shì yī gè **píng** fán de rén.] 这是一个幸福的时代。[Zhè shì yī gè **xìng** fú de shí dài.]

Appendix 2 Short sentences in English contains alveolar nasal and velar nasal sounds.

/æn/	This is my study **plan**. If it's hot, turn on the **fan**.
/æŋ/	**Hang** the picture on the wall.
/ən/	I also like this **wooden** board. There was a **sudden** flash.
/eŋ/	A book is not judged only on its **length**. He used all his **strength**.
/ɪn/	She has beautiful **skin**. I believe it is a **sin**.
/ɪŋ/	He has good **handwriting.** The **King** trusts his people. We **sing** to please her.

Appendix 3 Short passage in Chinese from Mandarin Proficient test

Yī wèi fǎngměi zhōngguó nǚzuòjiā, zài niǔyuē yùdào yíwèi mài huā de lǎo tàitai. Lǎo tàitai
一 位 访 美 中 国 女作家，在纽 约 遇到 一位 卖 花 的老 太太。老 太太

chuānzhuó pòjiù, shēntǐ xūruò, dàn liǎnshàng de shénqíng què shì nàyàng xiánghé xīngfèn.
穿 着 破旧，身 体虚弱，但 脸 上 的 神 情 却 是那 样 祥 和 兴 奋。

Nǚzuòjiā tiāole yī duǒ huā shuō: “Kàn qǐlái, nǐ hěn gāoxìng.” Lǎo tàitai miàndài wéixiào
女 作家 挑了一 朵 花说：“ 看 起来，你很 高 兴。”老 太太 面 带 微 笑

de shuō: “Shì de, yīqiè dōu zhème měihǎo, wǒ wèishénme bù gāoxìng ne? “Duì fánnǎo, nǐ
地 说：“是 的，一切 都 这 么 美 好，我 为 什 么 不 高 兴 呢？” “对 烦恼，你

dào zhēn néng kàn dé kāi. Nǚzuòjiā yòu shuōle yījù. Méi liào dào, lǎo tàitai de huídá gèng lìng
到 真 能 看 得开。”女作家 又 说了一句。没 料 到，老 太太的 回答 更 令

nǚzuòjiā dàchīyījīng: “Yēsū zài xīngqíwǔ bèi dīng shàng shízìjià shí, shì quánshìjiè zuì
女 作 家 大吃一惊：“耶稣 在 星 期五 被 钉 上 十字架时，是 全 世界 最

zāogāo de yītiān, kě sān tiān hòu jiùshì fùhuó jié. Suǒyǐ, dāng wǒ yùdào bùxìng de shíhòu,
糟 糕 的一天，可三 天 后 就是复活节。所以，当 我遇到 不幸 的时 候，

jiù huì děngdài sān tiān, zhèyàng yīqiè jiù huīfù zhèngchángle.” “Děngdài sāntiān”, duōme
就 会 等 待三 天，这 样 一切就 恢复 正 常 了。” “等 待 三 天”，多么

fù yú zhélǐ de huàyǔ, duōme lèguān de shēnghuó fāngshì. Tā bǎ fánnǎo hé tòngkǔ pāo xià,
富 于 哲理的 话语，多 么乐 观 的 生 活 方式。它把 烦 恼 和 痛 苦 抛 下，

quánlì qù shōuhuò kuàilè.
全 力去 收 获 快乐。

Appendix 4 Mandarin Proficiency Test Standards

Advance-1	When reading and talking freely, the phonetic standards, words and grammar are correct, the tone is natural, and the expression is smooth.
Advanced-2	When reading and talking freely, the phonetic standards, words and grammar are correct, the tone is natural, and the expression is smooth. Occasionally there are words and mistakes.
Intermediate-1	When reading and talking freely, the rhythm is standard, the tone is natural, and the expression is smooth. There are some mistakes in a few difficult sounds (flat tongue, alveolar nasal and velar nasal sounds, side nasal sounds, etc.) Words and grammar are rarely mistaken.
Intermediate-2	When reading and talking freely, some of the individual tones and the pronunciation of the consonants and vowels are not accurate. There are more mistakes in difficult sounds (flat tongue sound, alveolar nasal and velar nasal sounds, side nasal sounds, fu-hu, z-zh-j, i-ü are not differentiated, etc.). The dialect tone is not obvious. There are situations where dialect words and dialect grammars are used.
Foundation-1	When reading and talking freely, there are more errors in consonants and vowels, and the mistakes of difficult sounds are out of the usual range. The tone adjustment is not accurate. The dialect tone is obvious. There are mistakes in words and grammar.
Foudation-2	When reading and talking freely, there are plenty errors in consonants and vowels. The dialect feature is prominent and dialect tone is obvious. There are many mistakes in words and grammar. Listeners’ who are not from the same region may not understand a part of the conversation.

Appendix 5 Short passage in English

"Saturday morning was come, and all the summer world was bright and fresh, and brimming with life. There was a song in every heart; and if the heart was young, the music issued at the lips. There was cheer in every face and a spring in every step. The locust-trees were in bloom, and the fragrance of the blossoms filled the air. Cardiff Hill, beyond the village and above, it was green with vegetation, and it lay just far enough away to seem a Delectable Land, dreamy, reposeful, and inviting." –Mark Twain, *The Adventures of Tom Sawyer*

Appendix 6 IELTS: Speaking Band Description – Pronunciation

Band	Pronunciation
9	• Use a full range of pronunciation feature with precision and subtlety • Sustains flexible use of features throughout • Is effortless to understand
8	• Uses a wide range of pronunciation features • Sustains flexible use of features, with only occasional lapses • Is easy to understand throughout; L1 accent has minimal effect on intelligibility
7	• Shows all the positive features of Band 6 and some, but not all, of the positive features of Band 8
6	• Uses a range of pronunciation features with mixed control • Shows some effective use of feature but this is not sustained • Can generally be understood throughout, though mispronunciation of individual words or sounds reduces clarity at times
5	• Shows all the positive feature of Band 4 and some, but not all, of the positive features of Band 6
4	• Uses a limited range of pronunciation features • Attempts to control features but lapses are frequent • Mispronunciations are frequent and causes some difficulty for the listener
3	• Speech is often unintelligible

References

Avery, P. & Ehrlich, S. (1992). *Teaching American English pronunciation*. Oxford University Press.

Backman, N. (1979). Intonation errors in second language pronunciation of eight Spanish speaking adults learning English. *Interlanguage Studies Bulletin*, *4*(2), 239–266.

Bang, Y. J. (1999). Reaction of EFL students to oral error correction. *Journal of Pan Pacific Association of Applied Linguistics, 3,* 39-51.

Barlow, J. S. (1998). *Intonation and second language acquisition: A study of the acquisition of English intonation by speakers of other languages* [Unpublished doctoral dissertation]. University of Hull.

Chen, S. (2016). Negative transfer of Enshi dialect in English pronunciation and its countermeasures. *International Journal of Language and Linguistics, 3*(2), 149-156.

Chien, C. N., Kao, L. H., & Wei, L. (2008). The role of phonological awareness development in young Chinese EFL learners. *Language Awareness, 17*(4), 271–288.

Corder, S.P. (1973). *Introducing applied linguistics*. Penguin Education.

Creswell, J. W., & Creswell J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publications, Inc.

Cui, R., Heuven, V., Lee, W-S, & Zee, E. (2011, August 17). *Mutual intelligibility of English vowels by Chinese dialect speakers* [Regular Session]. Proceedings of the 17th International Congress of Phonetic Sciences, Hong Kong.

Gilakjani, A. P. (2012). The significance of pronunciation in English language teaching. *English Language Teaching Journal, 5*(4), 96-107.

Gittardo, A., Koh, P. W., Chen, X., & Jia, F. (2017). Models of English and Chinese word reading for adolescent Chinese-English Bilinguals. *Reading and Writing, 30(7), 1377-1406.*

Godfroid, A., Lin, C., & Ryu, C. (2017). Hearing and seeing tone through color: An efficacy study of web-based, multimodal Chinese tone perception training. *Language Learning*, *67*(4), 819-857.

Han, F. (2013). Pronunciation problems of Chinese learners of English. *Ortesol Journal*, 30, 26-30.

Hua, Z. (2002). Phonological development in specific contexts: Studies of Chinese-speaking children. *Multilingual Matters,* Vol.3

Huang, L. (2010). The potential influence of L1 (Chinese) on L2 (English) communication. *ELT Journal, 64*(2), 155-164.

Huang, L. (2017). *The negative transfer of Chinese dialects on English pronunciation: Case study of Wenzhounese* [Unpublished Master's Thesis]. University of Wisconsin-Platteville.

Hudson, T. (2007). *Teaching second language reading.* Oxford University Press.

Kim, S. Y., Liu, L., & Cao, F. (2017). How does first language (L1) influence second language (L2) reading in the brain? Evidence from Korean-English and Chinese-English bilinguals. *Brain and Language,* 171, 1-13.

Lepetit, D. (1989). Cross-linguistic influence in intonation: French/Japanese and French/English. *Language Learning, 39*(3), 397–413.

Li, B., & Wayland, R. (2006). Training Chinese dialect listeners to perceive English /n/ and /l/. *The Journal of the Acoustical Society of America, 119*(5), 3424.

Luo, J. (2014). A study of mother tongue interference in Pronunciation of college English learning in China. *Theory and Practice in Language Studies, 4*(8), 1702-1706.

Luo, S. (2017) The effect of pitch interplay on English speaking learners of Mandarin. *Journal of Chinese as a Second Language, 52*(1), 28-54.

Mennen, I. (2007). Phonological and phonetic influences in non-native intonation. In J. Trouvain & U. Gut (Eds.), *Non-native prosody: Phonetic description and teaching practice* (pp. 53–76). Mouton de Gruyter.

Odlin, T. (2006). *Language Transfer: Cross-linguistic influence in language learning.* Cambridge University Press.

Ortega, L. (2013). *Understanding second language acquisition.* Routledge Press.

Rajadurai, J. (2001, July). An investigation of the effectiveness of teaching pronunciation to Malaysian TESL students. *Forum, 39*(3), 10-15.

Tang, C. & Heuven, V. J. (2009). Mutual intelligibility of Chinese dialects experimentally tested. *Lingua, 119*(5), 709-732.

Ueyama, M. (2000). *Prosodic transfer: An acoustic study of L2 English vs. L2 Japanese* [Unpublished doctoral dissertation]. University of California Los Angeles.

Wang, M., Koda, K., & Perfetti, C. A. (2003). Alphabetic and nonalphabetic L1 effects in English word identification: A comparison of Korean and Chinese English L2 learners. *Cognition*, 87, 129–149.

Wayland, R. P. & Gion, S. G. (2004). Training English and Chinese listeners to perceive Thai tones: A preliminary report. *Language Learning, 54,* 681-712.

Willems, N. (1982). *English intonation from a Dutch point of view.* Walter de Gruyter.

Yang, C., & Chan, M. K. (2010). The perception of Mandarin Chinese tones and intonation by American Learners. *Journal of Chinese Language Teachers Association, 45*(1), 7-36.

Yang, M., Cooc, N., & Sheng, L. (2017). An investigation of cross-linguistic transfer between Chinese and English: A meta-analysis. *Asian-Pacific Journal of Second and Foreign Language Education, 2*(1), 1-21.

Zhang, F., & Yin, P. (2009). A study of pronunciation problem of English learners in China. *Asian Social Science, 5*(6)*, 141-146.*

Zhou, M. (2003). *Multilingualism in China: The politics of writing reforms for minority languages 1949–2002.* Mouton de Gruyter.

Kexuan Wu is a Ph.D. candidate in Instructional Leadership and Academic Curriculum, focusing on World Languages Education, at the University of Oklahoma. She has experience in teaching English as a second language and teaching Chinese as a Foreign Language in K-16 settings in the United States. Her research interests include second language acquisition, multicultural education, curriculum and instructional design, and teaching and learning with technology.