

Foreign Learning Environment Reduces Negative Transfer in Pronunciation: An Analysis of the Oral Output of Chinese University EFL Learners

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Abstract. Negative interlingual transfer is a crucial topic in the field of linguistics, which makes the theory of second language acquisition complete. Language transfer refers to transfer of language features between or within languages, in which interlingual transfer is the one focuses on the transfer between two languages. The study explores the typical types of negative interlingual transfer in pronunciation of Chinese university EFL learners and factors affecting the degree of negative interlingual transfer in pronunciation in their L2 learning process. To achieve this purpose, the article adopts error analysis (EA) to scrutinize the errors collected by semi-structured interviews. The participants are 20 Chinese university EFL learners whose L1 is Chinese. Ten of them are from Chinese domestic universities, while the other ten come from Sino-foreign university in China or studying abroad. The result is that: typical errors are divided into segmental errors including mispronouncing vowels, adding a vowel between consonant clusters, wrongly emphasizing and extending ending consonants and replacing consonants in English with similar Chinese phonemes, and suprasegmental mistakes, encompassing stress transfer, too flat or too exaggerated intonation and lack of liaison. As for the contributing factors of negative interlingual transfer, the article contends that learning environment is a significant factor. Foreign learning environment can lead to fewer errors and reduce negative interlingual transfer.

Keywords: Negative Transfer; Pronunciation; Second Language Acquisition.

1. Introduction

Negative interlingual transfer is a crucial topic in the field of linguistics, which has been the central topic in second language acquisition and applied linguistics for almost 100 years [1]. Ellis agrees that it is language transfer that makes the theory of second language acquisition complete [2]. Language transfer stems from a psychological concept, which means new knowledge will be influenced by original knowledge [3]. Specific to linguistics, it refers to the transfer of language features between or within languages [4]. The umbrella term language transfer includes two subtypes: intralingual transfer and interlingual transfer [5].

Intralingual transfer means the transfer within one language, usually within a learned target language, or more precisely, it refers to that language learners use a limited part of acquired knowledge in target language to infer other knowledge in that language [5]. As for interlingual transfer, it means applying some of the acquired language knowledge to another language, usually target language [3]. Interlingual transfer is further divided into positive interlingual transfer and negative interlingual transfer. Positive interlingual transfer happens when the linguistic elements share some similarities in both languages [4]. It means that acquired language has a positive impact on target language and produces correct outcome in target language [1, 4]. The other is negative transfer, which occurs while the linguistic elements are different in the two languages [4]. It is about the negative impact caused by acquired language to target language, or in other words, the outcome of the transfer breaks the linguistics laws in target language [1, 4]. The research focuses on the negative interlingual transfer caused by L1 Chinese to English learning, which means the negative impact posed by mother language Chinese to English. It is noticeable that the negative interlingual transfer is inevitable. As Dechert and Raupach claim that as long as there are some distinctives between L1 and L2, negative transfer will happen [6]. It is owing to that “in a developing L2 system, the target units are in direct competition with the native ones because they both represent alternative

ways of construing the same reality.” [7]. Moreover, compared with L1 system, which is complete and tied to one’s own innate worldview, L2 system is segmental [8, 9]. Therefore, L2 learners tend to construct their interlanguage relying more on L1 system because of their “accessibility and degree of automaticity attained in L1” [10]. Pronunciation is the category that is greatly influenced by interlingual negative transfer. Pronunciation itself is one of the most crucial parts in basic elements in language learning, among pronunciation, vocabulary and grammar. It contributes to the memorization of vocabulary, the composition of sentence with grammar and the meaning making process, and it is also the foundation of the linguistic competence [11]. Therefore, the noticeable negative transfer in pronunciation is worth analyzing.

In China, the learning of English pronunciation faces up with some difficulties. Regarding the learning environment, majority of Chinese students learn English through translation assisted by L1 without access to natural English language environment [3]. Moreover, instructors usually pay more attention to vocabulary and grammar, ignoring pronunciation, leading to the pervasive phenomenon of “dumb English” which cause obstacles to communication . Based on these problems, Chinese scholars conduct some research to scrutinize into this field, in order to find solutions. Although they attach importance to this field with more contemporary theories and effective methodologies, they still leave some research gap. As for the methodology, they tend to use corpus to generate data rather than analyzing individual instances in detail [11]. Regarding research design, they focus on designed pronunciation tests rather than natural language production [12]. In terms of content, they concentrate on segmental elements more, ignoring suprasegmental parts [11]. Therefore, this research intends to fill in the gap by using error analysis to study natural language instances collected during a semi-structured interview to analyze both segment and suprasegment elements. Scrutinizing into it can help teachers to adjust their pedagogical practice and assist students to rethink their learning methods. In order to explore the topic, two research questions are raised. They are:

(1) What are the typical types of negative interlingual transfer in pronunciation of Chinese university EFL learners?

(2) What are the factors affecting the degree of negative interlingual transfer in pronunciation in the L2 learning process of Chinese university EFL learners?

In what follows, this article will firstly illustrate the details of data, the methodology named error analysis (EA) and procedure adopted, followed by a thorough analysis of the errors with instances of errors. Analyzing L2 output using EA is beneficial because it can emphasize the significance of focusing on error because errors can bring feedback [13]. Moreover, EA indicates the developing status of L2 learners’ interlanguage systems, such as how much the systems are influenced by L1 or L2 during the learning process, which is in accordance with the research aim in the study [13, 14]. It provides evidence for how learners learn a certain language, or more precisely, the methods and procedures in learning a foreign language [14, 15]. Furthermore, because EA can display information mentioned above, it assists to remediate teachers’ pedagogical methods and helps student to reflect their learning process [13]. Afterwards, in order to answer the second research question, a quantitative analysis is conducted, before entering the discussion and conclusion section where the result of the essay will be positioned in the field and a brief summary will be presented.

2. Methodology

2.1 Method for Analysis: Error Analysis (EA)

Error analysis is the first methodology invented to study second language acquisition, which refers to analyzing the errors in the interlanguage system constructed by L2 learners [13]. This methodology is based on universal grammar and cognitive linguistics [5]. As Corder contends, there are five steps in the procedure of EA: collecting error samples, discovering errors, describing errors, explaining errors and evaluating errors [14]. Moreover, in order to present the errors in intonation, an assisting software named WASP is adopted to generate the graph of intonation.

2.2 Data Description

The study mainly collects spoken English of EFL university students whose native language is Chinese. The data is collected by using a semi-structured online interview with 5 questions in the form resembling IELTS speaking test. There are totally 20 participants, 10 of them are from Chinese domestic universities, and the other ten are from Sino-foreign universities in China or having the experience of studying abroad. Their proficiency in English is similar, leveling at 5.5 in IELTS speaking test or 6th level in Chinese domestic English proficiency test.

2.3 Analyzing Procedure

For research question 1, error analysis will be adopted. The analyzing procedure for question 1 follows the first four of five steps in EA framework mentioned above:

(1) Collecting error samples by using a semi-structured online interview in English. The participants also respond in English without preparing the questions before and checking referencing resources. Therefore, real-time errors can be collected.

(2) After collecting the error samples, the errors are discovered manually according to received pronunciation (RP), or in other words, every point that is different from the accent of standard English will be discovered as errors.

(3) As for describing errors, the essay will firstly categorize the errors into segmental and supra-segmental errors, and then divided them into more detailed subtypes, and list several errors in each subtype. Moreover, the article will contrast the wrong version with the standard one and depicts the errors in detail.

(4) The fourth step is explaining errors, which is the most crucial part in analysis of research question 1. Specific reasons for the production of the errors caused by negative interlingual transfer from their L1 will be presents by comparing Chinese and English.

For research question 2, in fact, it functions as the last step in EA: evaluating errors. The analysis for this question evaluates the errors by pointing out what is the contributing factor that leads to interlingual transfer. To answer this research question, a quantitative analysis will be adopted. In the analysis, the error rate of the pronunciation (The errors counted includes both segmental and supra-segmental errors) in the oral production containing 50 continuous words of each participant will be calculated manually. Then, the error rate of students from Chinese domestic universities and that of students from Sino-foreign universities or studying abroad will be presented in a table and be compared to identify if language learning environment is one of the contributing factors to negative interlingual transfer.

3. Results

3.1 Segmental Errors

3.1.1 Having Difficulty in Distinguishing Vowels

The errors are mainly divided into three subtypes: having trouble in distinguishing long and short vowels; finding it hard to distinguishing monophthongs and diphthongs, mistaking certain vowels with others.

Participants find it challenging to distinguish two pairs of long and short vowels: /u:/ and /ʊ/; /i:/ and /ɪ/. For the first pair, some participants pronounce good (in RP /ɡʊd/) as /ɡu:d/, turning short vowel /ʊ/ to long vowel /u:/ with higher tongue position and tighter lips. For the second pair, several participants speak cities extremely tight as /'si:ti:z/, while the corresponding version in RP is /'sɪtɪz/. This is a typical phenomenon results from negative language transfer from L1. In Chinese, there is not a categorization of long and short vowels, while there are only single, compound or nasal vowels [16]. Such phenomenon that certain linguistics features exist in one language while lacks in another language is termed as zero contrast [15]. Because long and short vowels do not exist in these

participants L1 and form the zero contrast to students, they have trouble in distinguishing the two types.

They also have trouble in distinguishing monophthongs and diphthongs, especially /e/ and /ei/. They pronounce paint as /pent/ rather than /peɪnt/, emphasizing the first element /e/ in the diphthong without sliding to the position of /ɪ/ to fully articulate the diphthong. This is also related to negative transfer from Chinese. According to Huang and Li, Chinese has antecedent compound vowels including *ai*, *ei*, *au*, *ou*. *ei* is in accordance with /ei/ in English phonetic system, but there are some slight differences [16]. The articulating requirement of such kind of compound vowels in Chinese is that the first vowel should be louder, longer and clearer than the second one, which leads to the disappearance of the second vowel in the articulation of English words these participants [16].

The last typical deviance in vowel articulation is that they mispronounce some vowels to others, such as /aɪ/ and /æ/. They articulate ipad (/ˈaɪ.pæd/) as /ˈæ.pæd/ and writing (/ˈraɪtɪŋ/) as /ˈræɪtɪŋ/. Their articulating position is fronter than the right version. As mentioned in the above, *ai* is one of the antecedent compound vowels in Chinese phonetic system. When EFL learners whose L1 is Chinese encounter the phoneme /aɪ/ in English words, they tend to recall the resembling one in Chinese, *ai*. According to the articulating habits of *ai*, *a* is usually emphasized with longer, louder and clearer voice [16]. Therefore, it can be inferred that the /aɪ/ phoneme in English is equivalent to *a* in L2 learners interlanguage system. In Chinese, *a* is in accordance with two different phonemes in English phonetic system, which are /æ/ and /ɑː/. Compared with /ɑː/ that has a low back position harder to reach, /æ/ is easier to pronounce. Therefore, these participants may use /æ/ to replace /aɪ/ in English words. The process indicates the negative transfer phenomenon from Chinese to English.

3.1.2 Errors in Consonant Clusters

Errors in pronouncing consonant clusters are also a kind of frequently occurring errors. Consonant clusters mean that two or two more consonants appear continuously in the same syllable. Such consonant clusters usually appear in the beginning or end of each word [12]. The typical error is that they add a vowel, usually /ə/ between the consonants in the cluster, such as pronouncing free as /fəri:/, slow as /sələʊ/. This is because of the difference between Chinese and English syllable patterns. Chinese does not have an individual consonant that has the function to close the syllable while English has. More precisely, according to Zhang (2008), Chinese pattern is vowel, consonant-vowel (V/CV) while English pattern is vowel, vowel-consonant or consonant-vowel-consonant (VVC/CVC). Therefore, the negative transfer of Chinese compels participants to add vowels to form Chinese-like syllables. This error makes these L2 learners' English sounds like a mix of Chinese pronunciation pattern and English phoneme sounds, leading to the production of Chinglish, which is far from native English.

3.1.3 The Extension and Emphasis of the Ending Consonants

Another representative mistake is the extension and emphasis of consonants in the end of the word. They pronounce some as /sʌmu:/, like as /laɪkɜ:/, eat as /i:tɜ:/ and famous as /ˈfeɪməsi:/ . They add a long vowel in the end of the word to form a new syllable. This also results from negative transfer from Chinese. The reason can be interpreted in two ways. The first possibility is that they do not get used to letting a consonant to close the word and syllable, therefore, they add a vowel to form a new syllable ending with a vowel. The other interpretation is that some syllables in Chinese are allowed to be extended, such as *si*, which is similar to the last syllable constructed by these participants in the word famous [12]. They transfer the *si* to /s/ and reckon it can also be extended. Therefore, the mistake occurs and it provides barricades in oral communication.

3.1.4 Replacing Consonants in English with Chinese Similar Sounds

Replacing English consonants with Chinese similar sounds is also a noticeable and prevalent error. Participants produce school as /sku:/ because there is a phoneme *gu* whose pronunciation is similar to that of chool (/ku:l/). They articulate think as /sɪŋk/ because in Chinese *s* is similar to *th* /θ/ in sound but having different articulation position. They also pronounce slow as *slou*, owing to that *ou* in Chinese phonetic system is similar to əʊ in sounds. Such similarity refers to that they are similar in

sounds but they have completely different articulating positions. Therefore, such direct negative transfer from L1 is the cause for the errors.

3.2 Suprasegmental Errors

3.2.1 Stress and Intonation

Stress and intonation are two of the main components in suprasegmental phonetics [3]. These two are also the points that Chinese EFL learners ignore to acquire. Therefore, negative transfer from L1 easily occupy these field and lead to non-native pronunciation. It can be detected from the result that participants articulate disadvantage as /'disəd,vɑ:ntɪdʒ/, changing the primary stress in the third syllable to the first one. They also pronounce because as /'bɪkəz/, turning the stress in the second syllable to the first one. Moreover, they articulate media as /mi:'diə/, moving the stress from the first syllable to the second one.

Regarding intonation, there are still mass of mistakes. In order to be presented clearly, graphs generated from the software WASP will be presented. The first sentence that one of the participants produce is “em.....Because I think these can relax my em.....”.

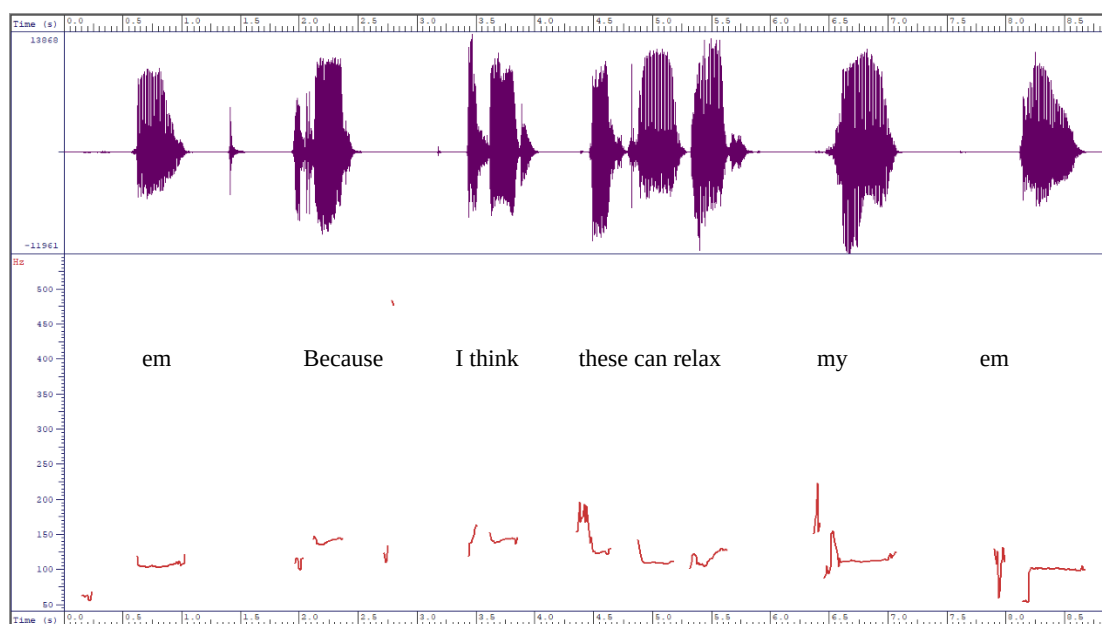


Fig. 1 The WASP Graph for a Flat Sentence

It is detectable that, the red line indicating intonation is generally keeping static around 125 Hz. Such a flat intonation is hard to be found in the oral production of a native speaker, whose production is usually full of rise and fall of natural intonation.

The second sentence is “I just want to live in a peaceful and silence small town”. In this sentence, the essay focuses on the intonation of the word peaceful and compare it with RP pronunciation. The graphs for participant’s sentence and the standard pronunciation from RP are presented below.

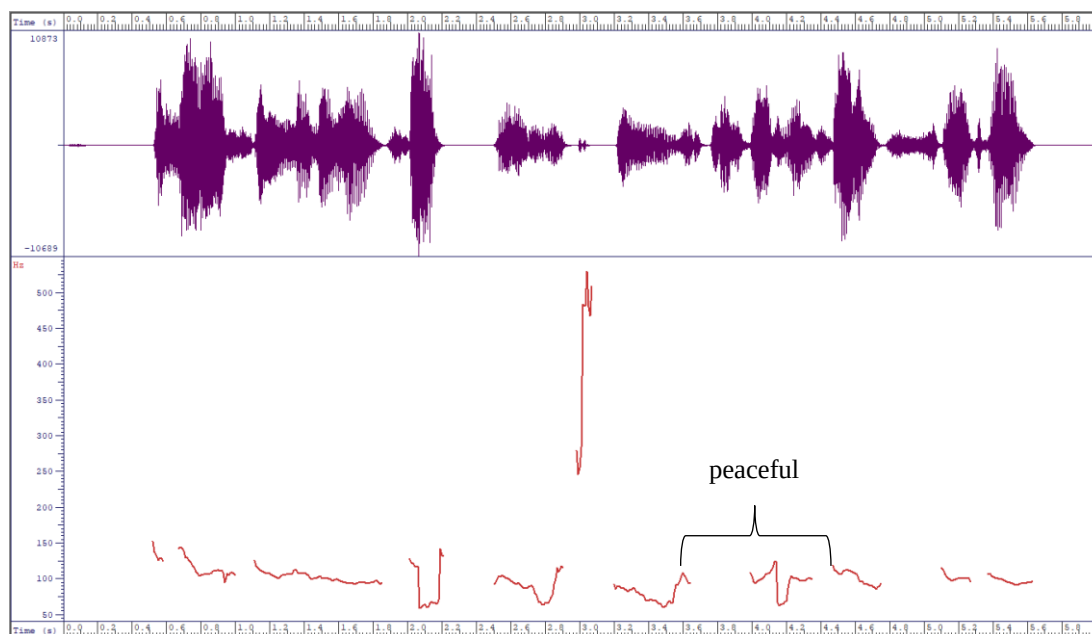


Fig. 2 The WASP Graph of Peaceful by Participants

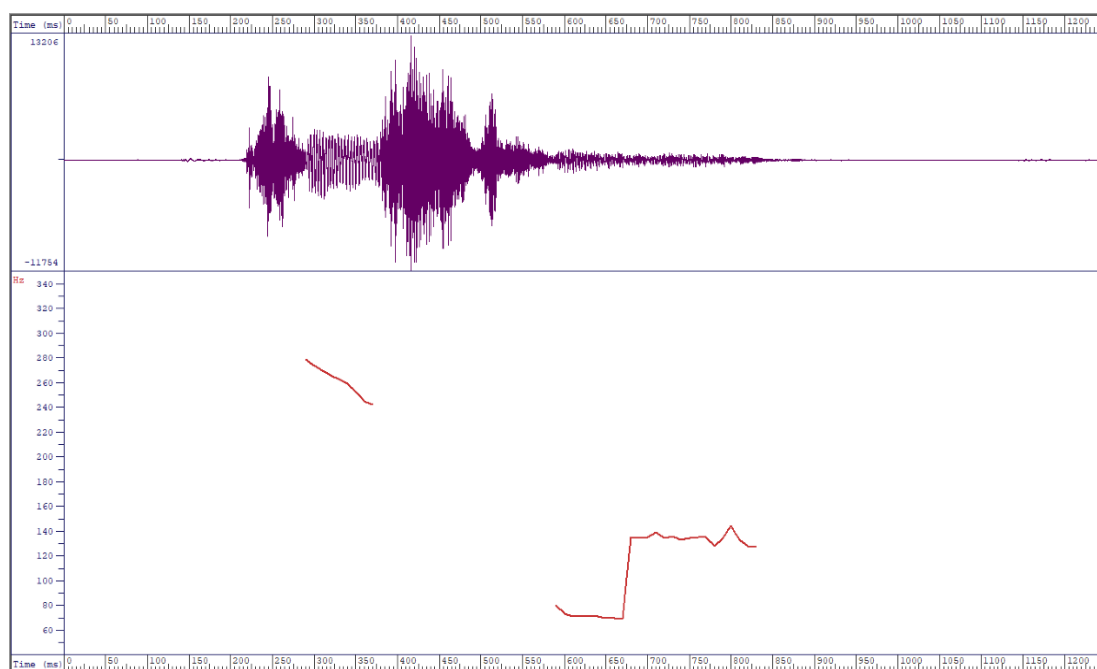


Fig. 3 The WASP Graph for RP Peaceful

It is noteworthy that participant version of peaceful is exaggerated rise-fall tone, while RP version is flatter with fall and level tone. Here, the participant version is too strange and deliberate, far from native and natural.

Next is the last example. The sentence produced is “first of all, the advantages of it is that you can get some new information from social media”.

In Figure 4, it is strange to see that the first half part of the sentence is in a continuous rising intonation, which is seldom encountered in native speakers’ daily conversation.

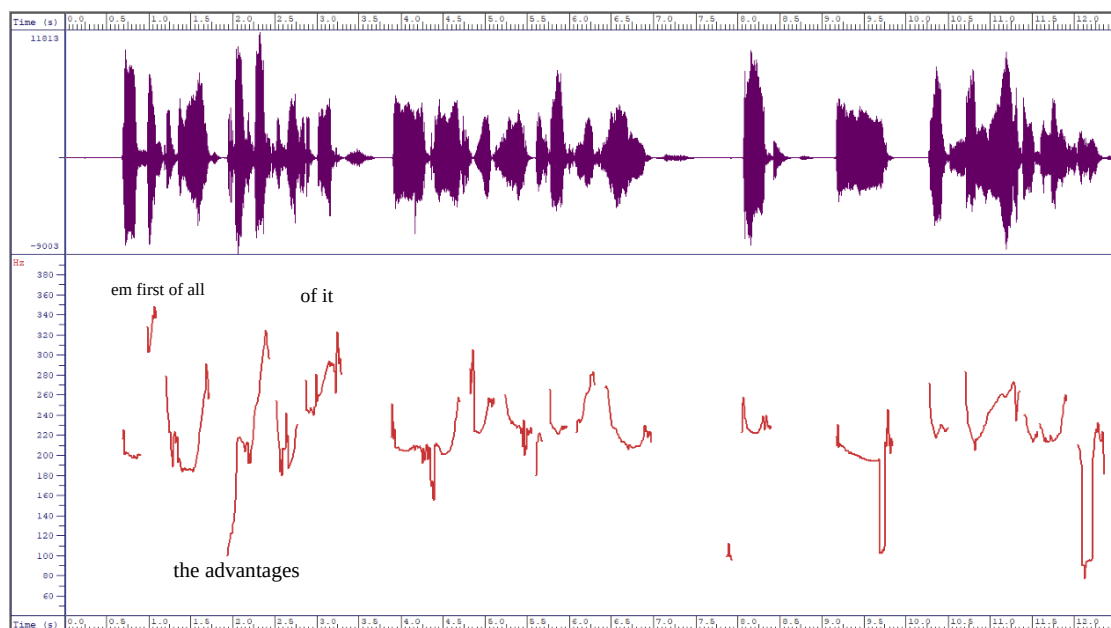


Fig. 4 The WASP Graph for Continuous Rising intonation

This strange stress and intonation also result from negative transfer. Through the comparison between Chinese and English, it can be detected that Chinese is a tonal language with four tones “ping, shang, qu and ru”, while English is a typical intonation language [3]. In other words, Chinese focuses more on the collocation of tones. On the contrary, English pays more attention to stressed and unstressed syllables and intonation [3]. Therefore, Chinese student seldom concentrate on acquiring and imitating stress and intonation in English because they are not the crucial part in their mother language, which leads to high error rate and strange production.

3.2.2 Liaison

Liaison is another point that participants always ignore. If the former word ends with a consonant and the latter word starts with a vowel in English, Liaison will occur [3]. However, Chinese students get accustomed to articulating characteristics and words clearly and separately. In the sentence they produce that “life pace is not very fast”, “pace” and “is” should be put together. However, the participant separates the two words overtly. Native speakers tend to produce the sentence “I remember that I was in elementary school” with liaison between that and I. However, the EFL Chinese participant articulates each of the two words individually. Moreover, the participant pronounces the sentence “we were asked to made a work of art” with no liaison between made and a, and the participant also emphasize the consonant in the end of the word made. Such problematic production is caused by negative interlingual transfer from their L1. Compared with English, Chinese is considered as a trinity of form, sound and meaning, which has the property of nonlinear structure [3]. It means that Chinese focuses on the individuality rather than the sequence of words. However, English is a polysyllabic and linear language, which relies on syllable combination and sequence to form sentences [3]. Therefore, the individuality of Chinese words has an influence on participants articulating habits, which leads to their unwillingness to form liaison in English.

3.3 One of the Prominent Contributing Factors: Language Learning Environment

Generally, the error rate of FS is far less than that of DS. The highest rate in FS group is just 12%, while that of DS group is 44%, higher than that of FS group. The lowest rate in FS group is 4%, while that of DS is 10%, higher than that of FS group. Overall, the error rate of FS group is below 15%. By contrast, that of DS group is above 15%. In terms of average rate, FS group is 8%, while DS group is 22.2%, which is higher than FS group. Therefore, it can evince that the error rate of FS is lower than that of DS. In other words, it means that foreign learning environment reduces negative interlingual transfer from L1.

Table 1. The Error Rate of the Randomly Chosen Continuous 50 Words Produced by Different Groups of Students

	DS	FS
1	44%	6%
2	12%	8%
3	16%	4%
4	10%	12%
5	20%	4%
6	32%	6%
7	16%	12%
8	34%	6%
9	20%	12%
10	18%	10%
average	22.2%	8%

*DS: domestic school students**FS: students from Sino-foreign universities or studying abroad*

4. Discussion

This part will position the research in the field to find some similarities and differences. As for the similarities, Zhang finds that Chinese students tend to add a vowel between consonant clusters in the beginning of a word [15]. Liang also discovers that Chinese participants have difficulty in pronouncing consonants cluster correctly. She also uncovers the phenomenon of extension of the ending phoneme such as /s/ in Chinese EFL students' pronunciation of English words, which is in accordance with this research. Moreover, the research supports her finding of using similar sounds with different articulating position to replace sounds in English by specifying this point to consonants and adding more examples [12]. In Song and Zhou's article, they also find stress transfer phenomenon in Chinese EFL learners' English oral production [11]. Furthermore, Guo and Lin contend that Chinese students' intonation is not idiomatic and liaison is an error point in their English production [3]. Jaiprasong points out that stress problem is a kind of interlingual errors results from negative transfer [17]. Regarding the contributing factors of these errors caused by negative transfer, Peng claims that learning environment is a crucial factor. It is explained that in a foreign learning environment, L2 learners can get access to target language frequently and are compelled to use target language because of the requirement of daily conversation, so that their mode of thinking is gradually similar to native thinking schema. It means that they can relate linguistic concepts and real word items directly in target language system without referring to their L1. Such a learning and thinking method can reduce negative transfer [18]. Guo and Lin agree with her and propose that abundant learning opportunities and native language environment are significant to students, in which they can accept idiomatic and high quality input [3].

In terms of differences, according to Al-Rubaat and Alshammari, there are some additional findings of interlingual errors caused by negative transfer in Saudi EFL learners, they are: mispronouncing multi-syllabic words, mispronouncing unfamiliar sounds that can not be matched with certain similar sounds in mother language and having difficulty in distinguishing voiced and voiceless phoneme. These are not typical errors in this study. That is because: 1) differences in method: the study uses semi-interview and recording with error analysis to scrutinize into the errors, while Al-Rubaat and Alshammari's research adopts pronunciation sensitivity response experience and interview with mixed methods. 2) The research participants: the study focuses on Chinese EFL learners from universities whose L1 is Chinese, while Al-Rubaat and Alshammari's research concentrates on Saudi EFL university students [19]. Different mother languages may influence the result. Another research also based on Saudi students conducted by Alzinaidi and Latif uncovers /ʒ/, /ŋ/, /t/ /p/ and /tʃ/ is the most frequently made mistakes. However, in this research, it is discovered

that participants seldom make mistakes in individual consonants. This is because the study uses error analysis to analyze errors in semi-structures interview, while Alzinaidi and Latif's study adopts 4-section productive pronunciation test to collect data.

5. Conclusion

This research uses error analysis to scrutinize Chinese EFL students' errors in English oral production and find some typical segmental and suprasegmental mistakes. Moreover, this research also contends foreign language learning environment and reduces negative transfer from L1. The research's findings can be concluded as follows. As for typical errors, it is divided into segmental errors and suprasegmental errors. Regarding segmental errors, it is discovered that participants have trouble in distinguishing long and short vowels, monophthongs and diphthongs. They also mistaken some vowels with other vowels. They also make some mistakes in consonant clusters pronunciation. They always add a vowel between consonants to make it adhere to the Chinese syllable pattern. They also tend to emphasize and extend the ending phoneme in certain words. Moreover, they also replace some consonants in English with similar sounds in Chinese. Regarding suprasegmental errors, they include stress transfer, too flat or too exaggerated intonation and lack of liaison. This article also elaborates the contributing factors to negative interlingual transfer. It is found that the environment factor is one of the most crucial factors influencing negative transfer. More precisely, foreign environment can reduce negative transfer in pronunciation. Therefore, it is further recommended that both teachers and students should attach importance to negative interlingual transfer in pronunciation. Teachers should detect negative transfer phenomenon, correct the mistakes caused by language transfer appropriately and adjust their teaching strategies based on students' errors. As for students, they should realize how influential their mother language is and try to avoid some negative transfer through introspection on their learning methods.

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