Comparative Study on the Supre-segmental Phonemes between English and Sichuan Dialect

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ABSTRACT

Supra-segmental phonemes, the prosodic features of a language, including stress, pitch, intonation, rhythm and juncture, play a very important role in distinguishing meaning in English. This paper analyzes the supra-segmental phoneme differences between English and Sichuan Dialect from the following four aspects: word stress, intonation, rhythm and junture. We are convinced that if language teachers in China have some knowledge of the transfer theory and if they know clearly the similarities and differences of the supra-segmental phonemes between English and their mother tongue, it would be much easier for them to know the language focuses and difficulties for the learners and their teaching would be more effective.

Keywords: supra-segmental phoneme; English; Sichuan dialect; comparison; stress; intonation; rhythm; juncture

1. INTRODUCTION

Phonemes are composed of segmental phonemes and supra-segmental phonemes. Segmental phonemes are linear diachronic phonemes, phonetic units segmented according to the order of the linear combination of phonemes. To put it simpler, segmental phonemes are vowels and consonants. Supra-segmental phonemes are nonlinear synchronic phonemes, which may appear at the same time with the segmental phonemes in the flow of speech, or attached on a segmental phoneme. Supra-segmental phonemes include stress, pitch, liaison, etc. (He Shanfen, 1989).

Supra-segmental phoneme is one of the most important factors in distinguishing meanings in languages. Due to the influence of Sichuan dialect, many students in Sichuan tend to speak English without noticing the striking features in the continuous speech such as word stress, sentence stress, liaison, loss of explosion, elision and intonation. The monotonous tones and pitches result in their non-fluency in the communication. Based on the theory of contrast analysis and error analysis, we analyzed the college students" supra-segmental phoneme errors in their pronunciation and their common errors are usually as

follow: (1) They often misplace word stress; (2) They neglect the differences of vowel sound quality in stressed and non-stressed syllables; (3) They utter each word very clearly with same stress, and vowels, no matter in stressed syllables or unstressed syllables, are usually articulated completely; (4) They expend same time on each word in the strong-weak-strong-weak patterns; (5) They usually add a slight /ŋ/ before a syllable with an initial vowel; (6) They are used to uttering each syllable at the same pitch, and make a sudden rise or fall at the last syllable; (6) They tend to read or speak English with the same intonation, and mostly, the falling intonation (Chuandong Ma, Lunhua Tan, 2013).

In this paper, we will analyse the similarities and differences of the supra-segmental phonemes of English and Sichuan dialect. We are convinced that if language teachers have some knowledge of the transfer theory and if they know clearly the similarities and differences of their mother tongue and English, it would be much easier for them to know the teaching focuses and difficulties for the learners and their teaching would be more effective.

2. COMPARISON ON THEIR WORD STRESS PATTERNS

Stress is a very important part of the phonetic structure in English, and it has also the function of distinguishing meanings or part of speech in the words or phrases composed of the same phonemes. Intonation and rhythm are based on stress, which are very important ways of expressing meanings in English. Chines is a tone language and stress does not play so important a part as it does in English, but it also has the function of distinguishing meanings. The basic characteristics of English and Chinese stress are the same, they both rely on the four factors: the sound intensity, duration, pitch and timbre to play a role in distinguishing meanings. But in English, pitch is the most important factor, while timbre is the least important. In Chinese, the most important factor is duration, and intensity is the least. As for their functions, stress can distinguish compound nouns from phrases both in English and Chinese, but stress does not distinguish part of speech of words in Chinese. Judging from their word stress patterns, English is much more complicated than those in Chinese. (Xi Xiaoming, 1990) In this paper, we will mainly discuss on the different features of the word stress patterns of English and Sichuan dialect.

2. 1. The features of the word stress patterns in English

(1). The word stress patterns in English are free and complicated. English linguist A.C. Gimson once defined English word stress as follow: The accentual pattern of English words is fixed, in the sense that the main stress always falls on a particular syllable of any given words, but free, in the sense that the main stress is not tied to any particular situation in the chain of syllables constituting a word, as it is in some languages. The stress may fall on the first, second or third, sometimes on the fourth syllable (A.C. Gimson, 1972, p. 222). He summarized the word accentual patterns of English words with two to seven or eight syllables, and there are totally thirty-five different patterns (A.C. Gimson, 1972, p. 228-230).

(2). Words in English are usually polysyllabic. Many words have more than two syllables, and some words even have six or seven or even more syllables, for example, revolutionary, unreliability, internationalization. The stress may have three levels: primary stress, secondary stress and unstress, and the places of word stress are various, on the first, second, third or even fourth syllable, very complicated.

(3). The stress in English is closely related with tones, and the pitch of tones is reflected by stress, while the change of tones can also reflect the stressed syllable. The stress of every word in English is fixed, but in the continuous speech, word stress may shift according to the need of rhythm.

(4). The stress is also closely related with the quality of vowels. Generally speaking, the quality of vowels is complete only in the stressed syllables; in the unstressed syllables, vowels are often weakened to / ɪ /, / ə /, / u /. If the stress of a word is misplaced, the vowel would be mispronounced (Xu Tianfu, 1985).

(5). Stress distinguishes compound nouns from noun phrases. For example:
ˌblackbird --- ˌblack ˌbird, ˌgreenhouse --- ˌgreen ˌhouse

(6). Stress distinguishes part of speech and meanings. In English, there are quite a few words with same spelling can both function as verbs or nouns. For most verbs, the stress falls on the second syllable, while for the nouns, it falls on the first.

2. 2. The features of the word stress patterns in Sichuan dialect

(1). The word stress patterns in Sichuan dialect are usually fixed and simple.
For most disyllabic words and phrases，word stress always falls on the first syllable. The second syllable is less stressed, and the first syllable is read stronger and longer than the second. The pattern is: Strong - Middle. For example:

▽学生，▽衣服，▽但是，▽而且，▽果然, ▽快些 , ▽漂亮， ▽洋气，▽劳动，▽学习

For most words or phrases with three syllables, word stress always falls on the first syllable, the second and third syllables are read weaker and shorter. The pattern is: Strong - Middle - Middle.
For example:

▽电视机， ▽复印机， ▽李教授， ▽王老师， ▽桃花节， ▽牡丹花

For most of the names of persons or places with three syllables, the first syllable is always stressed and lengthened, while for the names of persons with two syllables, the second syllable is lengthened and stressed (Liao Qing, 2005).
For example:

Strong – Middle – Middle: ▽李晓霞，▽刘凌峰，▽凤凰山，▽火车站，▽邮电所
Middle – Strong: 王 ▽芳，刘 ▽刚，陆 ▽林，张 ▽建

For most words or phrases with four syllables, word stress falls on the first and third syllables. The pattern is: Strong - Middle - Strong - Middle. For example:

▽七嘴 ▽八舌，▽乱七 ▽八糟，▽铺天 ▽盖地，▽横冲 ▽直闯，▽鸟语 ▽花香，
▽香格 ▽里拉

For most verb phrases with three syllables, word stress always falls on the second syllable, and the first and third syllables are read weaker and shorter. The pattern is: Middle – Strong– Middle. For example:

打 ▽电脑，洗 ▽衣服，剪 ▽指甲，盖 ▽房子，逛 ▽商场

For words with more than four syllables, word stress usually falls on the first syllable and the following ones are less stressed. The pattern is like this: Strong – Middle – Middle – Middle … Examples:

▽澳大利亚， ▽加利福尼▽亚， ▽美索▽不达米亚，▽布宜诺斯艾利▽斯.

(2). Words in Sichuan dialect are usually disyllabic, trisyllabic, or quadrisyllable, only some foreign words have more than four syllables. The stress only have two levels: strong and middle, there are few unstressed syllables or toneless words in Sichuan dialect (Yuan Jiahua, 1983).

(3). The tone pitch of the stressed and lengthened syllable will change, usually higher than its original one. But not like that in English, word stress will not shift even in the continuous speech. The stressed syllable is always lengthened, which is a very unique phenomenon in Chinese dialects.

(4). In the continuous speech, the syllables before and after the stressed syllable are usually read short and fast, but the quality of vowels are still complete.

(5). Word stress distinguish meanings. In Sichuan dialect, some words or phrases may have the same pronunciation but different meanings, only word stress helps to distinguish their meanings. For example:

▽晚点 （我晚点来。 I will come a little later.）
晚 ▽点 (火车晚点了。 The train is delayed.)
▽佣人 （servant）
用 ▽人 (choose a person for a job.)
▽大意 （careless）
大 ▽意 (main points)

From the analysis above, we can see that in both English and Sichuan dialect, word stress can distinguish compound nouns from noun phrases and word stress can distinguish meanings. But, the word stress patterns of English are much more complicated than those in Sichuan dialect, and the places of stress are free compared with those in Sichuan dialect. In English, it is pitch and intensity that highlight the stressed syllable, while in Sichuan dialect, it is duration (The stressed syllable is read much longer than the other ones.), a very unique feature of Sichuan dialect.

The weakness of vowels in unstressed syllables are very common in English, while in Sichuan dialect, there are hardly unstressed syllables and vowels in non-stressed syllables are still uttered completely.

For students in Sichuan, before learning English, they have already learned the sound system of their mother tongue, so they tend to stress each word when they speak Sichuan dialect. Due to the fact that the accentual patterns in Sichuan dialect are comparatively fixed and simpler than those in English, it is common for them to misplace word stress and sometimes even mispronounce English words.

2. 3. Comparison between Tone Language and Intonation language

A Chinese syllable is composed of initial consonant, vowel and tone. Tone plays a very important role in distinguishing meanings in Chinese. For a syllable with the same letters, if the tone is different, the syllable has completely different meanings. For example, for syllable "ma" in standard Chinese: mā 妈 (mother), má 麻 (fibre, or hemp), mǎ 马 (horse), mà 骂 (scold). Tone is so important in distinguishing word meanings in Chinese that modern phoneticians define Chinese as *Tone Language* (Gui Cankun, 1985).

There are five tones in Sichuan dialect: yin ping 阴平 (high level), yáng píng 阳平 (low falling), shǎng sheng 上声 (high falling), qù shēng 去声 (low rising) and rú shēng 入声 (middle level, or high level). In the 150 places investigated in Sichuan in 1960 by the working team of dialect investigation of Sichuan University, only 48 places have rú shēng (middle level, or high level). Judging from the actual tone pitch of the same word class in different dialects, there is little differences in their yīn píng, while in most dialects, their yáng píng, shǎng shēng and rú shēng are nearly the same, but their qù shēng are somewhat different. In most dialects, their tone pitches are as follow:

yīn píng: [55]、[44]、[45]；
yáng píng: [211、[31]，and in a few dialects: [52]、[41] 、[42]；
shǎng shēng: [42]、[53]、[52]、[51]，and in some dialects: [35]、[34]；
qù shēng: [13]、[14]、[24] or [214]、[324]，and in some dialects：[ll]、[22]；
rú shēng: [33]、[55]，and in some dialects: [24]、[13]、[34]

Judging from the tone patterns, there are following four types: high level, low falling, high falling, low rising and falling rising. (The Sound System of Sichuan Dialect, 1960)

Different from the syllables in Chinese, not every syllable of English word has fixed tone, and the different pitch of English words does not change the meaning. For example, for English word "book", whatever tone we use to read it, its meaning does not change. Of course, there is also pitch variation in English, but such variation (It is generally called intonation.) does not fall on every syllable as that in Chinese, but on the whole sentence like a wave, indicating the attitutes or emotions of the speakers. In English, there is no fixed tone on every syllable but there are intonations for every sentences, and intonations play a very important role in expressing emotions and feelings, so linguists call English (and other languages with the similar structure) *Intonation Language* (Gui Cankun, 1985).

The rises and falls in pitch level, or patterns of intonation in English, have two main functions: Intonation changes are the most efficient means of rendering prominent for a listener those parts of an utterance on which the speaker wishes to concentrate attention; pitch change is especially significant as a cue for signalling the word or words carrying primary accent. In addition, intonation is used as a means for distinguishing different types of sentence. For example, the same sentence of words may, with a falling intonation, be interpreted as a statement or with a rising intonation, as a question. Moreover, a listener derives from a speaker"s intonation information as to the latter"s emotional attitude or personality (A.C. Gimson, 1972, p. 266).

Intonations in English are very complicated. In addition to the function of providing a means of accentuation, they may also serve to distinguish sentence types and indicate the emotional attitude of the speaker (A.C. Gimson, 1972, p. 267). But basically, there are four intonations in English: rising, falling, rising-falling, falling-rising. Generally speaking, rising intonation is used in such sentences as general questions , imperative sentences or declarative

sentences expressing doubts. Falling intonation is used in declarative sentences, imperative sentences, exclamatary sentences and special questions. Rising-falling intonation is used in alternative questions, listing things or the first part of compound sentences, such as adverbiul clauses or the main part of a sentence with an objective clause. Falling-rising intonation is used in tag questions

As a tone language, intonation does not play so important a part in Chinese as it does in English, but it can not be neglected that intonation does exist in Chinese. As for the intonation in Chinese, Chinese linguist Yuen Ren Chao made a vivid discription in his book A Grammar of Chinese Spoken Language (1968), "… to compare syllabic tone and sentence intonation with small ripples riding on large waves. The actual result is an arithmetical sum of the two kinds of waves. Where two pluses concur, the result will be more plus; when a plus meets a minus, the algebraic addition will be an arithmetical subtraction." (Yuan Ren Chao, 2011, p.64). For example, in sentence "我姓张，他姓王。Wo Xing Zhang, Ta Xing Wang. „My name is Zhang, and his name is Wang.) ", in Sichuan dialect, the first part of the sentence should be in rising intonation, while the tone pitch of Zhang is yin ping, [55], high level, then Zhang should be said higher than its original tone; the tone pitch of Wang is yang ping, [21], low falling, as it is at the end of the sentence and falling tone should be used, then Wang is said lower than its original tone. However, in sentence" 我姓王，他姓张。Wo Xing Wang, Ta Xing Zhang.„My name is Wang, his name is Zhang.", the tone for Wang should be raised up even if its tone is falling, while for Zhang, the tone is lowered down even if its tone is rising.

Judging from the thirteen intonations summarized by Yuen Ren Zhao, which are not only fit for the official language, and almost all the dialects in China, all the basic patterns of intonation in English can find their corresponding types in Chinese, although "It is never safe to assume that that any given type of intonation in one language will have the same function in another languages." (Yuen Ren Chao, 2011, p. 65). The intonations in Sichuan dialect usually affect the last syllable of a sentence, and the syllables preceding it are connected one by one with its definite word tones, which is clearly quite different from those in English. The changes of tone pitch in English, no matter what kind they are : falling, rising, rising-falling, or falling-rising, are represented by the the nuclear syllable, the last stressed syllable, in stead of the last syllable. When speaking the falling intonation, the pitch begins to fall from the highest to the lowest from the last stressed syllable and if there are still some unstressed syllables after the nulcear syllable, they are all at the lowest pitch; while when speaking rising intonation, the pitch also begins to rise from the last stressed syllable and if there are unstressed syllables following the stressed one, the pitch goes higher. (Xu Tianfu, etc., 1985).

2. 4. Comparasion on their Rhythms

Rhythm in English is stress-timed, "the rhythmic beats of an utterance occur at fairy equal intervals of time. As a result of this, the speed at which the unstressed syllables are uttered --- and the length of each --- will depend upon the number occurring between the strong beats. All the unaccented syllables occurring between two strong beats may not, however, be uttered with equal rapidity: those following the strong beat of a rhythmic group tend to occupy slightly more time than those which precede the strong beat." (A.C. Gimson, p. 261). That is to say, no matter how many unstressed syllabes there are between two stressed syllables, the time spent on each rythmic group is rughly the same. The more the unstressed syllabes there are, the faster each unstressed syllable is read. For example,

(1) I want to go. (. · . ·)
(2) I want you to go there. (. · . . · .)
(3) I want you and him to go there. (. · . . . . · .)
(4) I wanted you and him to go there. (. · . . . . . · .)
(Note: "·" :stressed syllable; "**.**" :unstressed syllable.)

In the four sentences, it is quite clear that sentence (4) has nine syllables, much more than sentence (1), (2) and (3) with four, six and eight syllables, but all of them have only two stressed syllables，then one should read the four sentences at roughly equal time. To reach the goal, the unstressed syllables between the stressed syllables "wanted" and "go" in sentence (4) must be read fast, weak and vague, while "wanted" and "go" should be uttered long and strong.

Chinese is syllable-timed. The lengh of time of uttering a sentence depends on the number of syllables in stead of the number of stressed syllables. In other words, the more the syllables there are, the longer the time is needed. In addition, toneless words in Sichuan dialect do not play so important a role as they do in Putonghua or some other dialects in China, which can distinguish meanings. For example, in Beijing dialect, liàn xí 练习 is a noun if they both have tones, while liàn xi 练习 is a verb if xi is toneless or with a neutral tone.

In Sichuan dialect, toneless words do not distinguish meaning. Listeners have to distinguish meanings of such words or phrases from the context. Even chinese modal particles and conjunctions are stressed (Yuan Jiahua, 1983). In Chengdu dialect, one of the most important representatives of Sichuan dialect, neutral tone is not apparent. In spoken Chengdu dialect, there are stressed and middle-stressed syllables for the purpose of expressing different meanings. The morphological affixes are usually middle stressed. modal particles are usually middle stressed (Li Rong, 1998). Therefore, each syllable in one sentence should be read strong and clear at roughly the same lengh of time. For the four sentences above, in Chinese they should be read with completely different length of time.

(1) 我想去。
(2) 我想你去那儿。
(3) 我想你和他去那儿
(4) 我本来是想你和他去那儿。

From sentence (1) to (4), the time needed is longer and longer.

3. COMPARASION ON THEIR JUNCTURES

Juncture is a very important supra-phoneme in languages. It refers to the way words are connected in the continuous speech or the way marking the boundaries of words. In spoken English, there are many ways to connect the words in a sentence, such as word linking (or liaison):

1. To linking the final cosonant of one word with the initial vowel following it:
   Look   at   it. Run away.

2. Linking two words in one sentence with a glide, such as *j* and *w*:
   Do (*w*) it. Here we (*j*) are.

3. Linking two words in one sentence with a slight *r*:
   There (*r*) is a tree in front of the house.

4. To make smooth transitions when words are separated by more than two consonants.
   Nex(t) door.   Wen(t) there.

5. To change the pronunciation of some final and initial consonants. E.g:
   d + y → [dʒ]   Did you like it? t + y → [tʃ]   Don't you?

   Linking is very common in English, but in Chinese, it is rare. Judging from the hearing, syllables in Chinese are separated from one to another, while syllables in English are connected with each other in one way or another. Some people compare Chinese to the staccato in music, then English is the legato (Zhao Shikai, 1979). English sounds smooth and fluent, while Chinese sounds

   Most of the Chinese syllables begin with an initial, usually a consoant, for example, *t* in 他 *ta*，*h* in 好 hao. "A small number of syllables: such as 安 *an* and 啊 *a*, do not begin with a consonant. They are said to begin with the initial zero (or the "zero initial")." (Yuen Ren Chao, 2011, p. 47). The nitial zero, "…in the majority-type pronunciation, does have a slight consonantal – type obstruction in the form of a frictionless velar or uvular voiced continuant, [γ] or [ʁ], which is the reason why in 棉袄 *mian'ao*„wadded jacket" the *n* does not link with *ao,* as one would link English *ran out*."

   "A (large) minority of speakers use a glottal stop or a pure vocalic beginning for all words with a zero initial. A small minority of speakers begin such words with a consonantal *ng-* ." (Yuen Ren Chao, 2011, p. 48). Only interjections such as 啊 *a* ! and particles such as 啊 *a* and 呕 *ou* , which have true vocalic beginnings and do not resist linking. In these cases, the ending consonant *n* will be joined with the beginning vowel, while the ending *ng* will be followed by a velar consonant [ŋ]. Examples:

1. 多好看啊(哪)！ *duo hao kan **na*** !
2. 心慌啊！ *xin huang [**ŋ**] a* !

If the final word ends in vowels, then a semi-vowel *w* or *y* is added:

3. 买不买啊 （呀）？ *Mai bu mai **ya***?
4. 好不好啊 （哇）？ *hao bu hao **wa***?

   Syllables in most of the dialects in China follow the same rules mentioned above and there is no exception in Sichuan dialect.

4. CONCLUSION

   From the comparative analysis above, we can see the great differences of English and Sichuan dialect on their word stress patterns, intonations, rhythms and junctures, so it is not difficult to explain why students in Sichuan dialect area have some many problems in their English pronunciation even if they have learned English for over six years (In China, most

students begin to learn English from middle school). We suggest that teachers in dialect areas in China should be clearly aware of the similarities and differences of the supra-segmental phonemes between English and their dialects, so as to know the language focuses and difficulties for the learners in order to make their teaching more effective.

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