Prosodic Features of the Chinese EFL Learners as They Express New Information

------With EFL Learners from Jinan Dialect

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Abstract

The present study investigates the prosodic features of Jinan EFL learners as they express new vs. given information in terms of accent distribution, phrase segmentation and intonation pattern. According to the present study, under the influence of Jinan dialect, the learners produced errors in the accent position, especially within the multi-syllabic words. Compared with the native speakers, they usually read a sentence with more pauses. Furthermore, they tended to use high tone (H*) or falling tone (H*L) to realize the pitch accent, while the native speakers tended to use low tone (L*) or low-rising (L*H) in a simple declarative sentence.

Index Terms: Jinan dialect, prosodic features, accent distribution, phrase segmentation, intonation pattern

1. Introduction

Speech is the medium of a language, and to master the correct pronunciation and intonation is regarded as one of the basic necessary abilities of each English learner. The latest research shows that the prosody has a great impact on the understanding and communication skills of the English learners. Therefore, we should improve the understanding of the English prosodic characteristics, and shift the focus of the phonetic teaching to the English prosodic features.

The English prosody is also known as the super quality ingredient of the speech, including "stress", "rhythm" and "intonation" etc. The prosody can best reflect the pronunciation features of the English, so it is called the soul of the English phonetics. In the preface of *Clear Speech*, the American linguist Gilbert once said, "The students thought that they could improve their phonetic level as long as they carefully practice the pronunciation of each phoneme, but actually to master the rhythm (stress and intonation) is more important than to merely practice the pronunciation of a single phoneme"[1].

In the current research of the English prosody, Lin [2] stressed on the relevance between the English prosody acquisition of Chinese students and gender. It follows that female students only have a small advantage in prosody; there are no obvious differences between male and female students in other aspects (pause, liaison and the frequency of using rising or falling tone) except stress. However, both male and female students show significant differences in prosody compared with the native speakers. Chen [3] examined the details of the prosody, which included the rhythm classification of stress reiteration in Chinese EFL learners' reading, tonality and English intonation features etc. Wang [4] investigated the prosodic differences on English negative imperative sentences between native American speakers and Chinese EFL learners. Ji [5] examined Chinese EFL learners' intonation pattern of *yes-no* questions on the basis of AM theory, and she also finds there exist great differences between them.

However, in the previous studies of prosody, few of the researches consider the influence of dialect. Due to the ignorance of the differences on the phonological system, the learners in the dialect area will unconsciously set the phonological rules of the dialect to the phonological system of the English under the influence of the dialects. Although they referred to the given and new information, few of them compared the differences between them while being expressed. Based on these observations, this paper, taking the simple declarative sentence read by Jinan (JN) students as an example, tries to find out the prosodic features in the expression of new information vs. given information in terms of accent distribution, phrase segmentation and intonation pattern.

Shandong is a coastal province adjacent to the East China Sea and where the Yellow River empties into it respectively. As for the Shandong (SD) dialect, it belongs to the Guan dialect and exhibits both universal and specific feature in the Guan dialect region. JN is the capital city of SD province, located in western SD, being the center of the Economic Zone around the Bohai Sea. Apparently, it has a strong influence in SD. According to Qian [6], JN dialect belongs to the four tone region. Compared with Standard Mandarin and other dialects, it has its own characteristics. Trying to analyze the types of errors of the English learners in JN not only helps students to improve the oral and listening English level to enhance the communication skills, but also offers reference to scholars.

2. Methodology

2.1. Materials

The recording materials adopted for this paper consist of twenty sentences. All of them are simple declarative sentences with the same pattern. The main structure is "I say/said ___ five/ten times." The underlined part is the placement of the target word which is also the 'new information' bearing unit and the left part in the sentence are the old information bearing unit. A total of twenty words (see Table 1) are put on the line. Before recording, the speakers were notified about this specific point. The following table lists the words

employed in the experiment, they contain different syllable numbers and stress positions.

Table1. *The words involved in the experiment*

Syllable number	Words	Position of stressed syllable
1	white	first
2	money	first
	morning	first
3	hospital	first
	January	first
	video	first
	apartment	second
	department	second
	experience	second
	tomorrow	second
	afternoon	third
	Japanese	third
	overnight	third
	Vietnamese	third
4	elevator	first
	supermarket	first
	available	second
	California	third
	misunderstand	third
	information	third

2.2. Subjects

The subjects are divided into two groups: six English native speakers (NS) and eight EFL learners of JN dialect (see Table 2). To make the final result more convincing and representative, all the eight students come from SDUST and their English learning proficiency level rank top in the class.

Table2. *The subjects*

	NS	JN EFL learners	
		Non-English majors	English majors
Number	6	2	6
Gender	3M 3F	2F	4M 2F

The recording was carried out in the quiet room. The equipment adopted in the experiment is laptop computer with microphone Sennheiser PC166. The sampling frequency was at 16000 Hz, the sampling rate at 16 digits, and the sound track set to mono.

2.3. Data extraction and processing

This paper tries to rule out the influence of factors as sex and individual differences, so as to get the whole pitch performances of the JN students and the native speakers. Specific process is as follows:

(i) Toe phonemes and words of each sound file with the automatic procedure, and the labeling software is Praat. Altogether, there are seven tiers for each sound file: *orthographic tier* (transcription of the spoken words), phone tier (transcription of the phonemes), *break index tier* (transcription of intermediate and intonational phrases), *prominence tier* (location of prominent syllables), *phonetic tier* (detailed transcription of the variation of pitch), *phonological tier* (formal linguistic representations of speakers' intonational phrase) and the *comment tier* (alternative transcriptions and notes) [7] (e.g. Figure 1); (ii) The syllabic boundaries were modified by hand to ensure the accuracy of the data; (iii) To extract the pitch value of each sentence using the specific Praat script by which can extract ten F_0 pitch points with regular space form each vowel syllable; (iv) After processing the data with the normalization method, we get the mean value of the JN students and the native speakers by using the software SPSS13.0. Based on the value, we can draw the pitch contours, respectively. The following figure shows the labeling sample in the present study:

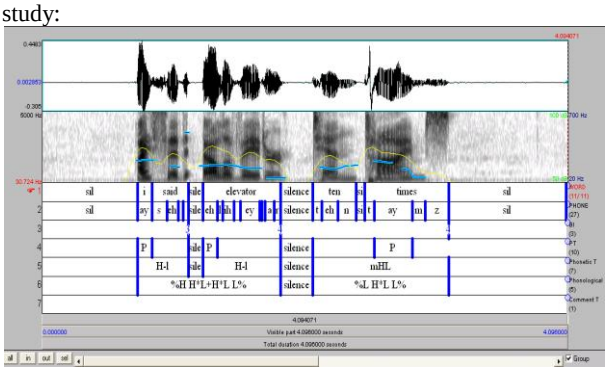

Figure1. *An annotated utterance "I said elevator ten times."*

3. Prosodic analysis

3.1. Accent distribution

In this part, it mainly examines the production error of the JN speakers in accent distribution within the new information bearing word. This research goal is approached through the comparisons of the F_0 means of JN and native speakers.

The word stress refers to the prominence of one syllable (or more than one syllable) compared with the other syllables in the word [8]. In the following figures, the X-axis describes the material read by the speakers, and the Y-axis shows the mean value of the pitch after normalization processing; set 1 stands for the JN students, and set 2 stands for the native speakers.

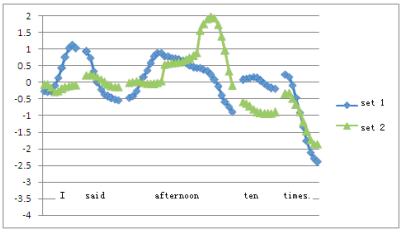

Figure2. F_0 means of "*I said afternoon ten times*".

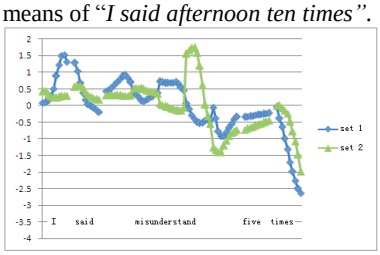

Figure3. F_0 means of "*I said misunderstand five times*".

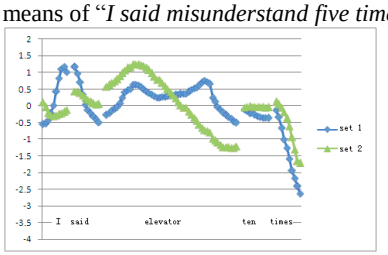

Figure4. F_0 means of "*I said elevator ten times*".

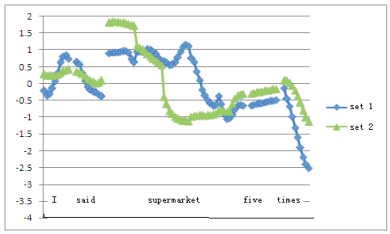

Figure5. F_0 means of "*I said supermarket five times"*.

3.1.1. Ambiguity of the multisyllabic words' pitch accent position

By comparing all the pictures, it can be found that: in the same context, JN students have great differences from the native English speakers on the pitch contour in the four-syllabic words whose, specifically, first syllable is stressed and the three-syllabic words whose last syllable is stressed. Specifically speaking, in Figures 4 and 5, JN students' starting point of the first syllable of "supermarket" and "elevator" is not as high as the native speakers'. As the first syllable of the two words is the first stressed syllable, the highest pitch point should be there. However, the JN students failed to make it. In addition, JN students' pitch change of "elevator" is more complex than the native speakers'. Besides, in Figures 2 and 3, JN students' pitch starting points of the first syllable of "afternoon" and "misunderstand" are generally higher than the native speakers', but the prominent position of the pitch's change is in front of the native speakers'. "The English word stress is not only one part of the phonetic structure…but also the basis of the rhythm and intonation in the speech. Thus, it is an important means for the phonetic expression." [9].Through Fry's research, we can find that the dominance of the word stress is embodied in four acoustic features. By the sequence of their importance, they are: pitch, length, intensity and sound quality [10]. Although the word stress is not totally determined by pitch, yet it is also influenced by the other three acoustic features, we can say that the pitch is still convincing on behalf of the dominance of the word stress. Therefore, we can say that JN students do not grasp well as for some English words, especially the word stress position of the multi-syllabic words.

3.1.2. False stress of the personal pronouns

After analyzing the statistics of the prominent words as they read, we find that the "I" stress (prominent) rate of the JN students (58.8 %) is far more than that of the native speakers (NS) (19.2 %) (see Table 3).

In the material of our experiment, "I" is the given information. It is not the focus of the sentences in the aspect of the semantics, or the most necessary part for the speaker to convey to the listener, and thus not being the most important or prominent information. In other words, it is not appropriate for the JN students to stress the personal pronouns in such a relatively distinct way. As we know, "I" is a function word in English while a content word in Chinese. By the influence of the negative transfer of Chinese, they made this mistake.

Table 3. *The statistic data of the prominent words*

Prominence	JN	Percent in all	NS	Percent in all
I	94	58.8%	23	19.2%
say/said	37	23.1%	43	35.8%
W	146	91.3%	109	90.8%
five/ten	17	10.6%	27	22.5%
times	127	79.4%	92	76.7%

The stress of English words, as pointed out in Merriam-Webster Dictionary, is nothing but an issue of personal habits, which is quite hard to find any reliable rules to follow. Mastering the stress of English words is of no ease but demands us to carefully observe and memorize the phenomena in the long-term linguistic practice and shape it as a habit [11]. As an important means of conveying new information, we should make clear the accent position and say it accurately in a sentence.

3.2. Phrase segmentation

This part is employed to investigate the phrase segmentation produced by both JN and native speakers. Rhythm refers to the pattern of the stressed syllable and unstressed syllable in the speech [12]. Chinese sentences are like a string of beads, although they are tied in a line, there are still clear intervals between them; while the English words are just like a stream of water, although the ripple has ups and downs, it is smooth and seamless [13]. In this experiment, we use the IViE prosodic annotation system to label, which has been introduced above. Based on the statistics of the specific segmentation models of the sentences, we obtained the differences between the JN students and the NS (as shown in Figure 6). It should be noted that, in order to facilitate the presentation of the experimental results and combine it with the actual situation, we divided this simple declarative sentence pattern into three parts: "I say / said", "W" and "five / ten times". The pauses between them are marked with "0", "3" and "4". In the prosodic annotation, "0" represents no obvious pause here; "3" represents the intermediate phrase boundaries; and "4" represents the intonational phrase boundaries.

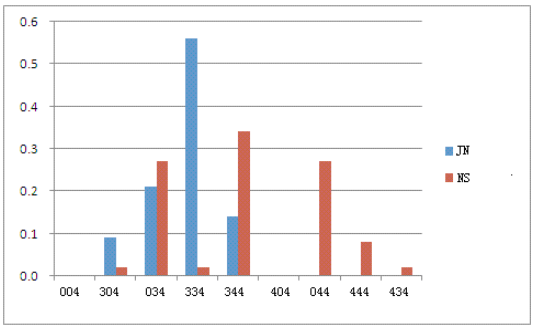

Figure6. *The phrase segmentation patterns of the speakers*.

The above figure shows that: there exists great differences between the native speakers and the JN students in the selection of pauses during the production of the sentence. The "334" type accounts for a large proportion (56.3%), and the "344" type also occupies a certain proportion (13.8%). In comparison, "034" (26.7%), "344" (34.2%) and "044" (26.7%) are the main types of the native speakers' segmentation models of the sentence. Associating with the actual pronunciation, we find "344" is similar to "044" in the native speakers' pronunciation. In other words, the pause between "I say/said" and "W" is shorter in the "344" and "044" types. According to this, we may see that: JN students prefer to divide this sentence pattern into 3 parts, while the native speakers mostly do it into two parts. Evidently, it is more reasonable to read it in two parts on the syntactic level: the fist part mainly introduces the new words or phrases, and the latter part shows another independent meaning. However, the division between "I say/said" and "W", causing more pauses, increases the hearers' burden and hardly effectively emphasizes the semantic meaning of the sentence, so that the focus of the information is hard to get.

3.3. Intonation pattern

Intonation refers to the model of the pitch contour changes in the oral English [14]. And, in this part, it mainly deals with the intonation pattern produced by JN speakers through which the error pattern of JN can be further analyzed.

3.3.1. The change of the pitch contour at the beginning of the sentence is remarkable

If the "H" intonation and "L" intonation are adopted to describe the change, the pitch contours of the results manifest an "LHL" changing tendency when JN students read the first two words in the sentence, while the pitch contours of the native English speakers do not show noticeable changes which seem flat. By the above analysis of accent distribution and phrase segmentation, it comes to the fact that the JN students tend to read the first two words as an intermediate phrase (%L H*L…), meanwhile, the problem of stressing the personal pronouns also exists. However, this part is given information which does not have the necessity to highlight, so this kind of ups and downs may distract the listeners' attention and is unfavorable to their grasping of the new information in the sentence. By contrast, the pitch contours of the native English speakers seem to be more reasonable in cooperating with the ensemble to highlight the new information of the sentence. This part forms the intonational boundary (%L …). In this way, the new information can be salient.

3.3.2. The heave of the middle part is not obvious, the prominence is not conspicuous

Obviously, the middle part of the sentences read by JN students is the place where the new information is. On the one hand, the starting points of the pitch contours of the most words are not as high as the native speakers' and the drop points are not as low as the native speakers'. So the outstanding strength of the new information is not as strong as the native speakers'. On the other hand, through the previous analysis we have found that multisyllabic words' stress position errors of the JN students which make this part of words' pitch contour becomes more complicated, and the places that should be highlighted are not conspicuous. From Figures 2 to 5, we can see that the native speakers' pitch contours are simpler than the JN students'. In this case, though their pitch accents have no big differences (see Table 4), the new information is not so prominent as the native speakers'.

Table 4 *Statistics of the pitch accents of the prominent middle*

Pitch accent	H*L	L*HL	L*H	L*	H*H	H*	H*LH	Total
JN	60	60	17	6	0	2	2	147
NS	52	50	1	0	0	2	8	113

3.3.3. The pitch contour changes in the end of the sentences are not so obvious

Similarly, from the results of the experiment, as to most of the JN students, "HL" pitch trend appears in the last two words of a sentence; however, as to the native speakers, the "LHL" trend emerges. According to Table 3, we have already found that listeners label the word "times" as the prominent word. Nonetheless, the information that should be emphasized is "five/ten" on the basis of the meaning of the sentence. It is obvious that the native speakers make the word "five/ten" prominent applying low tone (L*) or low-rising tone (L*H) here, while JN students tended to use high tone (H*) or falling tone (H*L) in a simple declarative sentence. We may say, because of the negative transfer from their dialect, JN students failed to have the stress fall on the syllables that carry new information, and their intonation pattern is unavoidably different from the native speakers.

4. Conclusions

This research investigates the prosodic features of the JN EFL students as they express the new vs. old information in the simple declarative sentences. We made a comparison between the Chinese students and the native English speakers in the expression of information mainly from three aspects: accent distribution, phrase segmentation and intonation pattern. It has found that there are specific differences in the pitch contours between them, and this finding can inspire the prosodic teaching and benefit second language learning under the influence of their dialects. Since we have already known that prosody has much influence on the understanding and communication ability of the EFL learners, we should gradually pay attention to the prosodic study from the easy to the difficult, from the simple to the complex, and from a single sentence to a complicated discourse. Obviously, we still have much to do to improve in this area.

5. Acknowledgements

This search is financially supported by Innovation Program of Chinese Academy of Social Sciences(AESOP—Corpus and Phonetic Study of English Learners from Chinese Dialect Regions), Chinese Social Sciences Foundation for Youth 'Phonetic Characteristics and Phonological Expression of Chinese Discourse' (No.10CYY036), CASS Youth Foundation 'Level of Accents in Standard Chinese'.

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[This paper was published in Speech Prosody 2012]