Revelation to English Phonetics Teaching Based on PAM

REVELATION DE L'ENSEIGNEMENT DE LA PHONETIQUE ANGLAISE BASE SUR PAM

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Abstract
Both Perceptual Assimilation Model and Speech Learning Model are concerned with the speech perception in the domain of second language acquisition. The influence of L1 experience on L2 speech perception has been well-researched from the segmental perspective and the conclusion of PAM and SLM have been proved. Based on these two models, this paper provides the assumption that L2 perception might be similar at both the segmental and suprasegmental level. PAM and SLM are available to the research on stress, tone and rhythm. Combined with teaching practice, some revelations to English phonetics teaching have been probed.

Key words: Language experience; Speech perception; Suprasegmental

Résumé
Les deux modèle de l'assimilation perceptive et le modèle d'apprentissage discours sont préoccupés par la perception de la parole dans le domaine de l'acquisition en langue seconde. L'influence de l'expérience sur la perception du langage L1 L2 a été bien étudié du point de vue segmentaire et la conclusion de l'APM et le SLM ont été prouvés. Sur la base de ces deux modèles, ce document fournit l'hypothèse que la perception L2 pourrait être semblable à la fois au niveau segmentaire et suprasegmental. PAM et le SLM sont disponibles à la recherche sur le stress, le ton et le rythme. Combiné avec la pratique d'enseignement, des révélations à la phonétique anglaise enseignement ont été sondées.

INTRODUCTION

In the domain of second language (L2) acquisition, a great deal of research which is based on the Perceptual Assimilation Model indicates that phonetic perception of a second language learner is effected by the first language. First language (L1) experiences limit the phonetic perception and production as well (Li Rong-bao, 2007). Most of the research focuses on segmental structures, namely, phonetic perception of consonants and vowels such as the empirical study on the vowel perception of Chinese students by Sun Yu-hong (2009). Some of the research is concerned with the phonetic perception of mandarin monolinguals and dialect speakers with mandarin as their second language. (Li Rong-bao, 2007). Influence of L1 on L2 speech perception at the suprasegmetal level is also involved, and the comparative study of tone perception between intonation language and tone language is the main focus (Zhang Jia-xiu, 2007).

Based on the most influential models such as Best`s Perceptual Assimilation Model and Flege`s Speech Learning Model, present study probes that these two models can be extended to the phonetic perception at the suprasegmetal level and analyze the influence of language experiences of the speakers who take Chinese as the first language on English phonetic acquisition. Stress, intonation and rhythm are specifically discussed in the paper.

PERCEPTUAL ASSIMILATION MODE (PAM)

Perceptual Assimilation Mode originates from the research of Children's speech perception. Both Phonemic mechanism which focuses on the influence of environment on speech perception and General Auditory mechanism which focuses on the innate mechanism take the monolingual speakers. Werker and Tees (1984) made the research extended. Cross-language study and the influence of language experiences on speech perception became the new topics. Based on the experimental study of the inhaled sound perception in African Zulu which have English speakers (both adults and children) as the subjects participants, Best suggested Perceptual Assimilation Model (Zhang Jia-xiu, 2010).

Perceptual Assimilation Mode is the theory which is concerned with category perception. It claims that language experiences influence the formation and production of speech perception. Nonnative speech will be reconstructed during the process of L2 acquisition. Listeners who have become familiar with the phonological system of a specific language tend to perceptually assimilate unfamiliar nonnative contrasts to their own phonological categories based on the degree of similarity to their native phonological system.

According to the degree of similarity to their native phonological system, assimilation can exist in different forms: (1) Nonnative contrasts may be similar to two corresponding native categories in the native phonology. Each nonnative sound is assimilated separately to a different category. (2) The nonnative contrasts may be equally assimilated to a single native category. Two nonnative sounds fall into the same native category. It is the most difficult one. (3) The sounds of nonnative language fall outside the native phonological space: therefore, they are heard as non-speech sounds. Learners are easy to acquire.

Research on both vowel and consonant contrast prove that it is easier to distinguish the "dissimilar" speech sound of nonnative speech than the familiar ones (Wen Baoying, 2009). PAM can be applied to nonnative contrasts perception at the suprasegmetal level.

Flege's Speech Learning Model was assumed in the basic of PAM. According to SLM, L2 sounds can be classified in to identical, similar and new by L2 learners based on their native phonological system. This prediction shares the same idea with PAM. SLM is a typical system which is not only interested in the interaction between LI and L2, but also the relationship between perception and production. A lot of researches have been made which were concerned about the domain of "cross-language". It is the extension of "Transfer".

A lot of supportive evidence could be found in the experimental study undertaken by So proved that it is plausible to extend PAM to the suprasegmetal level (Zhang Jia-xiu, 2010). These studies were concerned with the Chinese Mandarin speech acquisition of native speakers of tone language.

English and Chinese have different phonological and phonetic system. Chinese experience will tailor the phonological acquisition of EFL learners. The influence can be embodied the suprasegmetal level such as stress and intonation.

ENGLISH ACQUISITION INFLUENCED BY CHINESE EXPERIENCE AT THE SUPRASEGMETAL LEVEL

The differences of word stress between Chinese and English are very obvious. The influence Chinese word stress experience exerts on English word stress acquisition make the wrong word stress production possible. Allan James indicated that native language structure influences on the phonological system more greatly than other aspects during the process of L2 acquisition. A totally new mode of listening and articulation will be involved in the phonological acquisition. It is more difficult to change and adjust these physiological linguistic performances than cognitive linguistic performances (Gao Yuan, 2002).

Word stress is an important phonetic feature at the suprasegmetal level. It plays an important role in grammar, discourse comprehension and rhythm of English. Word stress in English refers to the syllable which has higher pitch, longer length and stronger intensity comparing with other syllables in a word (Roach 2003). According to the pitch, intensity and length of the syllable, stress can be classified into primary stress, secondary stress and unstress. For example, conver`sation (con-ver-sa-tion), "sa"(primary stress), "con"(secondary stress), "ver"and "tion"(unstress). Most English words are polysyllabic words and the distribution of stresses is very free.

It is tone that distinguishes meanings of Chinese words. Most Chinese words are characterized by two syllables.

Primary stress and secondary stress in Chinese words are not as clear as English words. Several experimental studies were made to testify Chao`s view on Chinese words, namely, the latter character within a Chinese word seems stronger than the former one (Yang Cai-mei, 2008).

A Study on Chinese College Students Word Stress Misplacement indicates that the occurrences of misplacement of word stress are always in polysyllabic words and stress shift on the second syllable contains a large share (Gao Lin & Deng Yao-chen, 2009). The second syllable or the latter syllable is always stressed in Chinese. According to PAM, Chinese learners are influenced by the experiences, as a result of this, the word stress is always misplaced on the second syllable.

According to PAM, new sounds can be acquired while old and similar sounds are very difficult to learn. It is

easier for L2 learners to make mistakes during the process of speech acquisition. Influenced by Chinese words which are featured as the latter character is stronger than the former one, EFL always shift the word stress to the second syllable of an English word.

Table 1
Description of Words Stress Misplacement in Sound Recording

English word Syllable division	Stressed syllable	Chinese words Tones of character	Stress shift
`hos.pi.tal	1	医院（● ●）（yī yuàn）	hos`pital 2
`In.te.res.ting	1	有趣（● ●）（yǒu qù）	in`teresting 2
`ex.ce.llent	1	优秀（● ●）（yōu xiù）	ex`cellent 2
`per.fect	1	优秀（● ●）（yōu xiù）	per`fect 2
`in.dus.try	1	工业（● ●）（gōng yè）	in`dustry 2
`com.for.table	1	舒服（● ●）（shū fù）	com`fortable 2
`re.la.tive	1	关系（● ●）（guān xì）	rela`tive 2
`di.li.gent	1	努力（● ●）（nǔ lì）	di`ligent 2
`po.pu.lar	1	大众（● ●）（dà zhòng）	po`pular 2
`wa.te.rfall	1	瀑布（● ●）（pùbù）	water`fall 2
`prin.ci.ple	1	纪律（● ●）（jì lǜ）	prin`ciple 2

According to SLM, L2 learners will achieve the speech perception depending on phonological category of their native language. The assimilation-dissimilation law in PAM indicates that the higher the speech sounds in different languages assimilated the lower accuracy the L2 learners acquire. Cross-language speech interference caused by cognitive bias between different languages brings about the mistakes in speech perception and production.

Stress, tone, intonation and rhythm are the concentrated expressions of metric difference between English and Chinese. Intonation and tone which are suprasegmetal features of language influence semanteme greater than segment, and therefore native language experience at suprasegmetal level influence L2 more serious than segment does. According to Best (1995), there are 4 tones in Chinese. Differences among these tones are a bit subtle and few acoustic feature can be subdivided (Chen Mo, 2010). English emphasizes the influence of intonation on semanteme and ignores the influence of tone, so that more difficulties will be increased in English acquisition for Chinese learners.

Languages differ in many aspects, speakers of different languages perceive and experience the world differently. Tone is categorically perceived by native speakers of tone language and psychophysically processed by speakers of non-tone language. Native speakers of tone-language put more stress on tone and ignore stress. Native speakers of intonation language are sensitive to stress but insensitive to tone (Wang Chao-ming, 2009).

Chinese belongs to tone language which is having lexically significant, contrastive, but relative pitch on each syllable. level tone(平), falling-rising tone (上) falling tone (去) and entering tone (入) are the four tones in classical Chinese phonetics. For example, "打" (dǎ) means beat when it is pronounced in"打架"; "打" (dá) means dozen when it is pronounced in "一打". As Xiong Wen-hua（1997）points out "intonation is the variation of pitch of voice in connected speech (at suprasegmetal level)", intonation of Chinese appears at the end of a sentence based on the slight adjustment of tone of the last Chinese character mainly.

English belongs to intonation language which is having both word stress and sentence stress. Meaning of a sentence is illustrated by both word stress and sentence stress. English and Chinese has different rhythm pattern. Chinese rhythm attaches importance to collocation of tone. English rhythm is mainly caused by stress and unstressed syllables, strong and weak forms of words, stressed words and unstressed words in sentences. Rhythm in English speech is based on stress. Stress-timed rhythm refers to the time from each stressed syllable to the next will tend to be the same. Usually, notional words are in strong form and function words are weakened. For example,

I `told you that you should have `finished it `yesterday.

According to English rhythm, "told" "fi" "yes" should be produced at equal interval of time, and other syllables should be weakened. Influenced by Chinese experience, Chinese learners focus more on tone than intonation, and

ignore the alternation of strong forms and weak forms of words. Every word and syllable is produced at equal strength and articulation. Excessive use of level-tone and falling-tone are obvious in intonation.

Native language influences L2 speech acquisition. PAM points out that the new sounds can be acquired while old and similar sounds are very difficult or almost impossible to learn at a native-like level. The newer the speech sounds are the easier acquisition will be had. Rhythm pattern and intonation are concerned with "old" categories so that Chinese learners have great difficulties to acquire.

Quality and quantity of L2 input plays a very important role during the process of speech acquisition and many revelations to English phonetics teaching can be got from it. Abundant and standard L2 input will enhance the sensibility of L2 tone perception.

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