



# Chinese learners' acquisition of English word stress and factors affecting stress assignment

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## ABSTRACT

This study explores Chinese ESL learners' acquisition of English word stress and compares the factors affecting their stress assignment with Guion et al.'s (2003) findings of three factors (syllable structure, lexical class, and phonologically similar words) affecting English speakers' stress placement. Twenty Hong Kong advanced learners produced and perceived 40 real words and 40 pseudowords of varying syllable structures in noun and verb sentence frames. They also indicated words they considered to be phonologically similar to the pseudoword. The results show that the participants performed well in the tasks with real words, but there were asymmetrical abilities in the tasks involving pseudowords. Regarding the factors affecting the stress assignment, different from the findings by Guion et al., stress assignment was not significantly influenced by syllable structure or the stress patterns of phonologically similar real words. Only lexical class had an effect on main stress assignment.

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## 1. Introduction

English was established as the official language of Hong Kong as early as the colonial period (Setter, Chan, & Wong, 2010). Hong Kong's government has been trying to remove the English language from its prevailing position since the handover from the British government by imposing a new language policy called 'Biliteracy and Trilingualism' (Li, 2009, p. 72) to drive a balanced development of English, Mandarin, and Cantonese. However, English remains the gateway to higher education as well as to a better job and social position. Both parents and students believe that attending English medium schools will bring more opportunities for employment and further studies. Most elite secondary school students choose to be taught partly or entirely in English, even though they still expose themselves to the Chinese language outside of the classroom. Given the special status of English in Hong Kong, it would be interesting to investigate whether it is possible that differing patterns of stress assignment may exist for Chinese speakers immersed in both their native language and in English (i.e., Hong Kong), and native English speakers immersed in the English language environment only (i.e., the United States (U.S.)).

Guion, Clark, Harada, and Wayl (2003) found that three factors affect English speakers' stress placement on bi-syllabic non-words: syllable structure (e.g., heavy syllable, vowel length), lexical class (noun vs. verb counterparts), and stress patterns of phonologically similar words. In this study, the influence of syllabic structure, lexical stress, and the stress patterns of known phonologically similar words on native Hong Kong Chinese speakers' acquisition of English stress patterns was investigated. Whether the factors Guion et al. (2003) found to affect the stress assignment differ significantly between L1 Chinese in Hong Kong and L1 English speakers was also examined.

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The research questions were raised as follows:

1. What is the relationship between Hong Kong ESL learners' perception and production of English word stress patterns?
2. What are the factors affecting Hong Kong ESL learners' stress assignment for English pseudowords?

## 2. Review of the literature

According to [Roach \(2009\)](#), English word stress is highly complex because stress patterns for English syllabic structures and word affixes are unpredictable, although a few generalizations can be made (e.g., [Chomsky & Halle, 1968](#); [Fudge, 1984](#)). [Cruttenden \(2008\)](#) also pointed out that attempts to formulate the rules of English lexical stress are “bedeviled by the existence of large numbers of exceptions to almost any rule,” implying that we cannot declare any absolute rules for the English stress system (2008, p. 238). As a result, many theorists and practitioners have suggested that students can learn the stress of individual words as part of the acquisition process for each new lexical item ([Howard, 2010](#)). Therefore, it is fundamentally difficult for learners to deal with the placement of lexical stress in English.

[Guion et al. \(2003\)](#) investigated possible influences on the acquisition of English stress patterns and found that three factors affect English speakers' stress placement on bi-syllabic non-words: syllabic structure, lexical class, and stress patterns of phonologically similar words. Later, Guion and her colleagues (e.g., [Guion, 2005](#); [Guion, Harada, & Clark, 2004](#)) conducted a series of experiments to validate their findings by testing learners of English as a second language (ESL) from different language backgrounds (e.g., Spanish and Korean speakers). Within their findings, all three factors were shown to significantly influence stress assignment patterns on non-words among native and nonnative English speakers. However, syllabic structure played a reduced role for late Spanish–English bilinguals. Furthermore, both syllabic structure and lexical class played a reduced role for late Korean–English bilinguals, while stress patterns of phonologically similar known words were good predictors of word stress for both late bilingual groups.

Several studies have suggested that ESL learners from a non-stressed language background, such as Chinese and Japanese speakers, often experience difficulties in English lexical stress acquisition and may not ever possess a knowledge base of English word stress in the same way as native speakers ([Archibald, 1997](#); [Peperkamp & Dupoux, 2002](#)). [Archibald \(1997\)](#) conducted a research study on the acquisition of English stress by speakers of non-stressed languages, including Chinese and Japanese speakers. His research indicated that neither syllabic structure nor grammatical category significantly affect Chinese English speakers' acquisition of English stress assignment. “They seemed to be treating stress as a purely lexical phenomenon—something that has to be memorized as part of the phonological representation of a word” ([Archibald, 1997](#), p. 175).

This notion was reinforced by [Wayland, Landfair, Li, and Guion \(2006\)](#), who investigated the influence of syllabic structure, lexical class, and the stress patterns of known words on the acquisition of the English stress system in 10 native Thai speakers. The results suggested that syllables containing long vowels were more likely to be assigned stress than syllables containing short vowels and that nouns received initial stress more often than verbs. Thai participants' patterns of stress assignment on non-words were significantly influenced by the stress patterns of phonologically similar real words.

As the aforementioned studies by Guion and her colleagues were mostly conducted in English-speaking countries with English-rich environments, the participants' exposure to English was quite likely to have helped these bilinguals to internalize stress rules via the clues of syllabic structure, lexical class, and stress patterns of phonologically similar words. It is therefore doubtful that these results can be applied to those who are learning English word stress in second or foreign language environments such as China.

The pronunciation problems of Chinese speakers in Hong Kong are quite prominent and distinctive, and they have captured the attention of linguists within the second language learning circle. Various segmental problems such as initial and final consonant cluster deletion or simplification and the merging of /n/ and /l/ are frequently reported. Chinese and English represent two contrasting prosodic types: tonal languages and stressed languages. English has a system of culminate word stress, but Chinese, a tonal language, has no system of word stress; rather, it has a system of four distinctive tones in which pitch is used to distinguish individual lexical items. As a result, ESL learners in China experience considerable difficulties in correctly perceiving and producing English stress.

[Archibald \(1997\)](#) and [Wayland et al. \(2006\)](#) also suggested that the stress patterns of phonologically similar words contribute significantly to Chinese and Thai speakers' stress placement, and they minimized the roles of syllabic structure and grammatical category in English word stress assignment. Their proposed explanation of lexical stress assignment attempted to use the idea of an analogy, developed from Skousen's Analogical Modeling of Language ([Skousen, 1989](#)) to explain how speakers determine linguistic behaviors such as stress placement based on the relevant examples stored in their minds. An analogy is a mechanism that can extend the knowledge of lexical phonology to novel forms. As an attempt to study phonology in terms of analogy, [Bybee \(1999, 2001\)](#) provided sound support for the analogy hypothesis proposed by [Archibald \(1997\)](#). Bybee suggested that phonology and the lexicon are inextricably linked. This serves as the basis of a likely analogical effect; in other words, Bybee claimed that speakers store phonological patterns like stress lexically in their mental lexicon. Phonologically similar items are interrelated and interconnected, and if stored together, can help speakers quickly process and search for the analogs.

Based on the previous literature, it seems that students can apply analogies as a strategy to deal with the unpredictable English stress in novel words. The ability to generalize is part of linguistic competence, which means that ESL learners can

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