

A Study on Stress Misplacement in English Polysyllabic Words by Chinese EFL Learners: A Perspective of Perception and Production

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doi:10.63593/JLCS.2026.06.04

Abstract

In phonological acquisition, word stress is one of the most important suprasegmental features, and stress misplacement has an impact on the clarity of phonological expressions and the accuracy of language acquisition. Therefore, studies on stress misplacement in perception and production of English words by Chinese EFL learners is of great significance for improving English teaching. Among these studies, stress misplacement in the perception and production of English polysyllabic word stress is particularly significant. In this study, 39 non-English major sophomores participated in experiments on the perception and production of word stress. The tendency of stress misplacement in the perception and production of English polysyllabic words was examined by the author, along with the connection between the two processes.

The results showed that stress misplacement was affected by the number of syllables and parts of speech. The frequency of stress misplacement increased with the increase of the number of syllables in the word, and the frequency of stress misplacement was highest in nouns, followed by verbs and adjectives. The Pearson correlation coefficient of 0.796 ($p=0.01$, $p<0.05$) indicated a significantly positive correlation between stress misplacement in perception and production. The frequency of stress misplacement was higher than that during production, suggesting that there was an imbalance between perception and production. This study suggests that more attention should be paid to the teaching of stress perception, and that perception practice should be combined with production practice.

Keywords: polysyllabic words, stress misplacement, stress perception, stress production

1. Introduction

English is stress-timed, characterized by the regular alternation of stressed and unstressed syllables at roughly isochronous intervals, whereas Chinese is syllable-timed, with each syllable assigned approximately equal duration. This typological divergence poses a persistent

challenge for Chinese EFL learners in both the perception and production of English word stress. Stress misplacement, defined as the phonological displacement of lexical stress from its canonical position (Gao, 2006), is frequently observed in these learners' speech and listening comprehension, potentially leading to lexical ambiguity and communication breakdown.

Word stress is not merely a prosodic ornament; it underpins the rhythmic framework of English and interacts closely with intonation to encode semantic and pragmatic nuances. Misplacement disrupts the stress-timing rhythm, fragments the speech stream, and may alter lexical meaning or speaker stance, thereby increasing the interlocutors' processing load. Accurate stress acquisition thus remains a central concern in L2 phonology and pronunciation pedagogy.

The present study addresses this issue by investigating stress misplacement in the perception and production of English polysyllabic words among non-English major undergraduates. Its significance is twofold. Theoretically, it seeks to delineate error patterns across modalities and to examine the perception-production relationship, an empirical question thus far underexplored in the Chinese EFL context. Pedagogically, the findings are intended to inform classroom practice: perceptual training, such as focused listening, can enhance sensitivity to stress cues, whereas production drills can strengthen articulatory accuracy. Crucially, the study advocates an integrated approach combining both modalities, augmented by immediate corrective feedback, enabling learners to self-monitor and gradually internalize canonical stress patterns.

The primary objectives of the present study are to characterize the predominant error patterns in both perception and production, to identify potential cognitive and phonological sources of these errors, and to determine the correlation between perceptual and productive accuracy, thereby informing the design of targeted instructional interventions. Through bridging the perception-production divide, this research intends to offer theoretical contributions to L2 prosodic representation and practical guidelines for pronunciation pedagogy, ultimately facilitating more effective stress acquisition among Chinese learners of English.

2. Literature Review

Stress misplacement in the perception of English word stress has received considerable attention in both second language acquisition research and phonetics. A substantial body of literature has investigated how non-native English speakers, particularly those without an English major background, perceive and produce lexical stress, with a focus on identifying misplacement patterns and their contributing factors. One line

of inquiry has established that linguistic experience significantly shapes stress perception. Wayland and Guion (2004), in their empirical study, demonstrated that while adults exhibit greater overall sensitivity to language speech than newborns, they encounter heightened difficulty in perceiving phonetic features absent from their native phonological inventory. Their findings further indicated that linguistic experience functions as a critical determinant in the processing of suprasegmental features.

In addition to linguistic experience, learners' language background has been identified as a key factor influencing stress perception and a common source of misplacement. Yu and Andrus (2010) examined whether the language background of non-native English learners affects their acquisition process and confirmed its impact on word stress perception. The divergence in stress patterns across languages arises in part from differences in native phonological systems; speakers habituated to a particular stress pattern tend to project that pattern onto a foreign language during perceptual processing. This phenomenon reflects negative transfer from the first language, which may lead to systematic misrecognition of stress positions in varied linguistic contexts.

Further extending this line of research, Altmann (2006) conducted an integrated study incorporating both perception and production experiments. He found that learners whose native language exhibits predictable stress patterns experienced greater difficulty in identifying stress positions in the perceptual modality, yet performed relatively better in production. This apparent asymmetry was attributed to their reliance on familiar first-language patterns, which impeded accurate discrimination of L2 stress placement; concurrently, the same first-language knowledge facilitated production through positive transfer, enabling learners to project native stress patterns onto L2 output, even when such patterns deviated from target-like norms. To enhance the robustness of empirical findings, subsequent studies have incorporated cross-linguistic participant groups. Archibald (1997) compared the acquisition of English word stress by native Chinese and Japanese speakers, revealing that Chinese participants faced greater difficulty in stress perception than their Japanese counterparts. Notably, neither group attained native-like competence in stress placement,

underscoring the persistent challenge posed by cross-linguistic prosodic distance.

With respect to the production of English word stress, research has emphasized the interplay of multiple factors, including first-language interference, L2 proficiency level, and instructional support. Gao (2021) defined stress misplacement as the incorrect repositioning of primary stress within a word, characterizing it as a form of interlanguage variation. A consistent finding across numerous studies is the prevalence of stress misplacement among Chinese EFL learners. Gao (2006) examined stress acquisition patterns in this population and observed a strong tendency toward erroneous placement in polysyllabic words, with the second syllable emerging as the most frequent locus of error. This difficulty was attributed to the absence of lexical stress in Chinese, a syllable-timed language, which renders Chinese learners largely unfamiliar with the stress patterns of English, particularly in polysyllabic items where stress assignment is phonologically crucial. Limited exposure to authentic input and insufficient practice with multi-syllabic vocabulary further compound this challenge. In a subsequent study, Gao and Deng (2009) confirmed that stress misplacement is pervasive even among Chinese non-English majors. Similarly, Luo and Zhang (2006) documented the considerable difficulties Chinese EFL learners encounter in acquiring word stress and called for increased instructional time devoted to stress pattern training, arguing that enhanced stress competence not only facilitates accurate pronunciation but also supports vocabulary acquisition and communicative clarity.

Beyond the Chinese EFL context, stress misplacement has also been documented in other language varieties. Schaetzel and Low (2009) conducted a series of production experiments and reported that stress misplacement constitutes a prevalent concern in Singapore English, with measurable consequences for intelligibility. Schaetzel (2010) subsequently investigated whether Singapore English exhibits distinct stress placement patterns and confirmed that such patterns arise from a convergence of linguistic influences across multiple languages, resulting in a hybrid stress system that permits code-switching but simultaneously engenders misplacement, as speakers transfer first-language stress rules into English, occasionally impeding successful communication.

Several scholars have further contributed to the classification of misplacement types. Gao and Wang (2009) identified three primary categories of word stress misplacement in the COLSEC corpus, analyzed from morphological and phonetic perspectives, with distinctions based on word form, lexical characteristics, and phonemic structure. Concurrently, other researchers have explored factors affecting stress production. Guion (2003) found that both syllable structure and lexical category influence stress placement. Xu and Zeng (2015), through empirical investigation, observed that the frequency of stress misplacement decreases as learners' proficiency increases, attributing this improvement to a more precise grasp of phonological rules accompanying advanced proficiency. More recently, Li and Grigos (2018) demonstrated that stress position interacts with intonational and rhythmic properties in L2 production, further underscoring the complexity of stress acquisition.

The limitations evident in the existing literature underscore the need for further targeted research on stress misplacement among Chinese EFL learners. First, the majority of prior studies have examined perception and production in isolation, with few adopting an integrated framework that simultaneously addresses both modalities. A combined perceptual-productive approach would afford a more comprehensive understanding of how Chinese learners acquire English word stress. Second, many researchers have included both disyllabic and polysyllabic words in their experimental materials without differentiation, despite the fact that stress misplacement is more pronounced in polysyllabic items. Focusing specifically on polysyllabic words would yield more refined insights into the distinct challenges posed by complex stress patterns. Third, while some scholars have selected trisyllabic, four-syllable, and five-syllable words as experimental stimuli without regard to grammatical category, Gao (2021) emphasised that part of speech constitutes a significant factor in stress placement, with nouns exhibiting the highest incidence of misplacement among Chinese EFL learners, followed by adjectives and verbs. Accordingly, future research should incorporate part of speech as a criterion in material selection, enabling a more nuanced examination of how word category modulates stress misplacement and enriching the pedagogical implications drawn

from empirical findings.

3. Research Methodology

3.1 Research Questions

The present study aims to address the following three questions:

- (1) What is the tendency of stress misplacement in stress perception of English polysyllabic words by Chinese EFL learners?
- (2) What is the tendency of stress misplacement in stress production of English polysyllabic words by Chinese EFL learners?
- (3) Is there any relationship between perception and production of stress misplacement by Chinese EFL learners?

3.2 Participants

A total of 39 non-English major sophomore students participated in the experiments. Their ages ranged from 19 to 21 years, with an average age of 19.2 years. These participants had commenced English learning between the ages of 6 and 8 and had received no formal pronunciation instruction prior to the study. None of the participants had taken the College English Test Band 4, and their pronunciation levels, particularly with respect to stress acquisition, were considered comparable.

3.3 Materials

For the perception experiment, 24 words were selected from *New Century College English: An integrated English course book 3*. The selection was based on syllable count, with six disyllabic words, six trisyllabic words, six four-syllable words, and six five-syllable words included in the stimulus set. The inclusion of trisyllabic, four-syllable, and five-syllable words was motivated by the study's focus on English polysyllabic items, where stress misplacement is most prevalent. The six disyllabic words served as interference items to preserve the precision of experimental results and minimize random variation. Moreover, selecting all materials from the same source helped standardize the interference level across participants and reduce potential confounding variables.

Within each syllable category, words of three grammatical categories were represented: two nouns, two verbs, and two adjectives per group. This distribution was intended to enable a comprehensive evaluation across different parts of speech. The selection of nouns, verbs, and adjectives was informed by the literature

reviewed above, in which several scholars have identified part of speech as a significant factor affecting stress misplacement among Chinese EFL learners, with these three categories exhibiting relatively higher frequencies of error. Representative items included evidence (n.), opponent (n.), intimate (v.), separate (v.), enduring (adj.), and wonderful (adj.), which collectively required participants to demonstrate their knowledge of stress placement in English pronunciation.

For the production experiment, the same set of 24 words was employed. The use of identical materials across the two experiments was intended to facilitate an examination of the correlation between perceptual accuracy and production performance, thereby offering insights into the interrelated nature of these two modalities in the acquisition of English word stress among Chinese EFL learners.

3.4 Data Collection and Analysis

The perception experiment was conducted as the first phase. Participants engaged in a structured listening task designed to assess their ability to perceive word stress patterns accurately. They were provided with audio recordings of the research materials and were instructed to focus on identifying the stressed syllable in each word. For each item, participants circled the syllable they perceived as carrying primary stress. Each word was played twice to ensure that participants had sufficient opportunity to listen attentively and make informed judgments. This procedure enhanced the reliability of the test results and provided a standardized framework for evaluating participants' perceptual accuracy.

The production experiment was administered seven days after the perception experiment. This interval was intended to minimize potential memory biases while providing an assessment of participants' proficiency in stress production. In this phase, participants were asked to read the same set of 24 words used in the perception experiment, with a brief opportunity to skim the word list prior to reading. Their readings were recorded using EV Recording in a quiet classroom setting to reduce external noise interference and ensure recording clarity, thereby enabling precise evaluation of stress production without distortion. The audio files were subsequently exported in MP3 format for statistical analysis.

In the final phase, the test papers containing

participants' perceptual responses and the recorded production data were processed to evaluate stress placement accuracy and to identify instances of misplacement. The author summarized the general tendencies of stress misplacement across both modalities. Additionally, several participants who exhibited a higher frequency of stress misplacement in the two experiments were selected for brief interviews, as their error patterns were considered representative. These interviews aimed to explore the reasons underlying their misplacement and their subjective perception of stress position. By identifying and categorizing instances of stress misplacement, this study contributes to a better understanding of the

challenges inherent in English word stress acquisition and offers practical implications for improving stress pattern instruction.

4. Results and Discussion

4.1 Stress Misplacement in Perception of English Polysyllabic Words

In the perception experiment, participants were required to identify and mark the positions of stress within the 24 English words by referencing the audio recordings. The analysis focused on how the accuracy of identifying the stress positions as the experimental instructions required, by the non-English major students. The results of frequency of stress misplacement in stress perception were presented in Table 1.

Table 1. Results of Stress Misplacement in the Perception Experiment

Word (Part of Speech)	Number Syllable	Frequency of Misplacement	Correct Position	Stress Position of Misplacement
attendance(n.)	3	3	Second	Third
promotion(n.)	3	12	Second	First
qualify(v.)	3	14	First	Second
penetrate(v.)	3	12	First	Second
productive(a.)	3	4	Second	First
prominent(a.)	3	13	First	Second
inspiration(n.)	4	20	Third	First
transformation(n.)	4	21	Third	Second
romanticize(v.)	4	21	Second	Fourth
intimidate(v.)	4	12	Second	First/Third
intransigent(a.)	4	13	Second	First
equivalent(a.)	4	9	Second	First
anthropologist(n.)	5	23	Third	Second
terminology(n.)	5	19	Third	First/Second
individualize(v.)	5	27	Third	Second/Fifth
intellectualize(v.)	5	26	Third	Second/Fifth
metropolitan(a.)	5	23	Third	First/Fifth
sophisticated(a.)	5	19	Second	First/Fourth

Table 1 presented the distribution of stress misplacement observed in the perception experiment. Among the 39 participants, a total of 291 instances of stress misplacement were recorded. The word *individualize* yielded the highest frequency, with 27 occurrences, followed closely by *intellectualize* with 26. The words *anthropologist* and *metropolitan* each registered 23

misplacements. Other items with notable error frequencies, reaching 20 or more, included *inspiration*, *transformation*, and *romanticize*. At the lower end, *attendance* exhibited the fewest misplacements, with only three instances. These results indicate that stress misplacement becomes more frequent as syllable count increases, a pattern consistent with Gao (2021), who observed

that stress placement in English polysyllabic words is relatively unfixed and broadly distributed. The phonological divergence between Chinese and English presents substantial difficulty for Chinese EFL learners in determining stress positions, particularly when confronting polysyllabic items, where misplacement is more prone to occur.

With respect to trisyllabic words, *promotion*, *prominent*, *penetrate*, and *qualify* displayed relatively higher error frequencies. Notably, the correct stress for *prominent*, *penetrate*, and *qualify* falls on the first syllable, yet participants frequently misplaced it to the second syllable. This tendency toward second-syllable misplacement aligns with Gao and Wang (2009), who examined stress errors in the COLSEC corpus and reported a notable prevalence of stress misplacement on the second syllable, particularly in nouns and adjectives. In contrast, *promotion* bears correct stress on the second syllable, but some participants erroneously placed it on the first syllable during perception. The words *attendance* and *productive*, both correctly stressed on the second syllable, showed lower misplacement frequencies, with errors tending to shift to the first and third syllables, respectively.

Among four-syllable words, stress misplacement occurred frequently in *romanticize*, *transformation*, and *inspiration*. The appropriate stress positions for *qualify* and *penetrate* are on the third syllable, yet participants showed a tendency to misplace stress to the first and second syllables, respectively. For *intimidate*, *inspiration*, *equivalent*, and *intransigent*, stress was commonly misplaced to the first syllable. This finding echoes the observation of Jangjamras (2011), who similarly reported that Thai learners of English tended to identify the initial syllable as the stressed position. Furthermore, a comparison between

trisyllabic and four-syllable words reveals that misplacement occurs more frequently and exhibits greater positional variability in four-syllable items, suggesting that increased syllable complexity heightens perceptual difficulty.

In terms of five-syllable words, the frequency of stress misplacement was substantially higher, ranging from 19 to 27 occurrences per word, compared with trisyllabic and four-syllable items. For *individualize*, *terminology*, *intellectualize*, *anthropologist*, and *metropolitan*, the correct stress position uniformly falls on the third syllable; nevertheless, participants produced diverse error patterns. For instance, the stress of *individualize* was commonly shifted from the third to the second or fifth syllable, while *terminology* tended to be misplaced to the first or second syllable. Participants often erred by placing the stress of *intellectualize* on the second or fifth syllable, that of *anthropologist* on the second syllable, and that of *metropolitan* on the first or fifth syllable. In addition, the stress of *sophisticated* was frequently shifted to the first or fourth syllable. The analysis of stress misplacement across these five-syllable items demonstrates that misplacement is highly prevalent and that error types are diverse, indicating that the number of syllables exerts a notable influence on misplacement patterns. This observation corroborates Gao (2021), who pinpointed that syllable count affects stress misplacement and noted that frequency decreases when word length exceeds eight letters. The frequent occurrence of errors in longer words underscores the complexity of English phonological rules and the particular challenges they pose for Chinese EFL learners. Such variability highlights the importance of identifying and addressing stress misplacement to facilitate effective communication in English-speaking contexts.

Table 2. Tendency of Stress Misplacement in the Perception Experiment

Word	Correct Position of Word Stress	Misplace to S1	Misplace to S2	Misplace to S3	Misplace to S4	Misplace to S5
Attendance	Second	0	0	3		
Promotion	Second	12	0	0		
Qualify	First	0	14	0		
Penetrate	First	0	12	0		
Productive	Second	4	0	0		
Prominent	First	0	13	0		

Inspiration	Third	18	2	0	0	
Transformation	Third	0	20	0	1	
Romanticize	Second	0	0	2	19	
Intimidate	Second	9	0	3	0	
Intransigent	Second	11	0	0	2	
Equivalent	Second	8	0	0	1	
Anthropologist	Third	0	21	0	2	0
Terminology	Third	5	14	0	0	0
Individualize	Third	0	20	0	0	7
Intellectualize	Third	0	20	0	0	6
Metropolitan	Third	15	0	0	0	8
Sophisticated	Second	14	0	0	5	0
Total		96	136	8	30	21

Table 2 further reveals the patterns of stress misplacement in the perception experiment. A prominent tendency observed among Chinese EFL learners is the misplacement of stress onto the second syllable. Conversely, when a word carries correct stress on the second syllable, learners frequently shift it to the first. This bidirectional pattern aligns with the findings of Gao and Wang (2009) and Gao and Deng (2009). The prevalence of second-syllable misplacement may be attributed to the rhythmic properties of English, where main stress frequently falls on the second syllable, prompting learners to adopt this position as a default. The presence of diphthongs and syllable-final consonant clusters further reinforces this tendency. The opposite pattern reflects what has been termed the “Initial Stress Preference”, a phenomenon whereby learners place primary stress on the initial syllable of polysyllabic words, likely due to its perceptual salience within the English phonological system.

The results also demonstrate that as syllable count increases, the frequency of stress misplacement rises accordingly, and the range of error positions becomes more diverse. This observation supports the conclusion that syllable number constitutes a significant factor affecting stress perception. Gao (2006) reported a similar finding, noting that syllable count influences stress placement. This is explicable in terms of English stress rules: in monosyllabic and disyllabic words, stress tends to fall on the first syllable, whereas in polysyllabic words, stress placement varies according to syllable structure. As the number of syllables expands, the potential stress positions multiply, thereby increasing the

likelihood of misplacement.

Part of speech emerges as another influential factor in perceptual stress misplacement. This observation is consistent with Guion *et al.* (2003), who emphasized the role of lexical class in English stress acquisition. The present data indicate that nouns and verbs exhibit relatively higher error frequencies, whereas adjectives show the lowest. This hierarchy corroborates Gao (2021), who found that Chinese EFL learners were largely unaware of the relationship between morphological structure and primary stress position, with misplacement most pronounced in nouns, followed by verbs and adjectives. The greater complexity of syllable structure in nouns and verbs, together with context-dependent stress variation, poses particular difficulty for learners. Adjectives, by contrast, display more predictable stress patterns, facilitating more accurate placement.

Finally, the perception experiment reveals that the frequency of stress misplacement increases with syllable count, with nouns and verbs consistently outperforming adjectives in error rates. This pattern, also documented by Gao and Wang (2009), indicates that both syllable number and grammatical category jointly influence stress perception. In trisyllabic words, misplacement predominantly occurs on adjacent syllables, for instance, from the first to the second. In four-syllable words, errors extend to syllables one or two positions apart. The greatest diversity of misplacement patterns emerges in five-syllable words, where erroneous stress assignments are observed on multiple non-adjacent syllables,

underscoring the heightened perceptual challenge posed by longer, phonologically more complex items.

4.2 Stress Misplacement in Production of English Polysyllabic Words

In the production experiment, participants were instructed to read the identical material utilized in the perception phase. The production task

enabled the author to assess stress misplacement by analyzing the recordings of participants. It was conducted to investigate how Chinese EFL learners produce word stresses, particularly in relation to the number of syllables and the lexical classes of words. The results of frequency of stress misplacement in stress production are presented in Table 3.

Table 3. Results of Stress Misplacement in the Production Experiment

Word (Part of Speech)	Number Syllable	Frequency of Misplacement	Correct Position	Stress Position of Misplacement
attendance(n.)	3	2	Second	Third
promotion(n.)	3	0		
qualify(v.)	3	0		
penetrate(v.)	3	4	First	Third
productive(a.)	3	2	Second	First
prominent(a.)	3	5	First	Second
inspiration(n.)	4	10	Third	First
transformation(n.)	4	11	Third	Second/First
romanticize(v.)	4	12	Second	Fourth
intimidate(v.)	4	13	Second	First/Third
intransigent(a.)	4	13	Second	First/Fourth
equivalent(a.)	4	3	Second	First/Fourth
anthropologist(n.)	5	20	Third	Second/Fifth
terminology(n.)	5	19	Third	First/Second
individualize(v.)	5	20	Third	Second/Fifth
intellectualize(v.)	5	22	Third	Second/Fifth
metropolitan(a.)	5	20	Third	First/Fifth
sophisticated(a.)	5	23	Second	First/Fourth

In Table 3, 39 participants encountered a total of 199 instances of stress misplacement while producing word stress. It demonstrates that the frequency of stress misplacement in production experiment is relatively lower than that in perception experiment. Researchers such as Flege (1995) got a similar result, which suggested that non-native speakers may perform better in terms of stress production, but there were some challenges in terms of stress perception.

The data suggests that participants have encountered difficulties in accurately placing stress on words *sophisticated*, *intellectualize*, *anthropologist*, *individualize* and *metropolitan*. Meanwhile, the words *promotion*, *qualify*,

attendance, *productive* and *equivalent* show the lower frequency of stress misplacement in production experiment. The rate of stress misplacement in the production experiment is consistent with the findings of the perception experiment, suggesting a consistent pattern in the perception and production of stress. This result had been founded in the study of Cutler and Otake (1999), which explored the relationship between speech perception and production, including the perception of stress and the role of production in language processing. This similarity between perception and production processes suggested there existed some underlying relationships between the two processes.

Among the trisyllabic words, the frequency of stress misplacement in all words is relatively low, but several participants tend to misplace the stress from the first syllable to the second syllable more frequently when producing the word *prominent* and from the first syllable to the third syllable when producing the word *penetrate*, which is similar to the result of the perception experiment.

In terms of four-syllable words, participants tend to misplace the correct stress position of

romanticize from the second syllable to the fourth syllable when producing it. The stress of the word *transformation* and *inspiration*, is misplaced from the third syllable to the second or first, and first syllable, respectively. But the frequency of stress misplacement when producing the word *equivalent* is quietly low than other four-syllable words, only occurring four times. According to the table, the frequency of stress misplacement in five-syllable words greatly increases. The frequency of stress misplacement in *sophisticated* and *anthropologist* accounts for a high proportion.

Table 4. Tendency of Stress Misplacement in the Production Experiment

Word	Correct Position of Word Stress	Misplace to S1	Misplace to S2	Misplace to S3	Misplace to S4	Misplace to S5
Attendance	Second	0	0	2		
Promotion	Second	0	0	0		
Qualify	First	0	0	0		
Penetrate	First	0	1	3		
Productive	Second	2	0	0		
Prominent	First	0	5	0		
Inspiration	Third	10	0	0	0	
Transformation	Third	2	9	0	0	
Romanticize	Second	0	0	2	10	
Intimidate	Second	9	0	4	0	
Intransigent	Second	12	0	0	1	
Equivalent	Second	2	0	0	1	
Anthropologist	Third	0	16	0	0	4
Terminology	Third	7	12	0	0	0
Individualize	Third	0	17	0	0	3
Intellectualize	Third	0	14	0	0	8
Metropolitan	Third	16	0	0	0	4
Sophisticated	Second	20	0	0	3	0
Total		80	74	11	15	19

Through analyzing Table 4, the tendency of stress misplacement is generally the same with that in the perception experiment. But the data collected in the production experiment indicates that the tendency of misplacing word stress to the initial syllable is more salient, which is in concordance with Maria's study (2008). The reason for this tendency is that the position of stress is crucial for differentiating word meanings in production. As a result of the impact of language acquisition, individuals may erroneously place word stress

on the initial syllable during word production, as it aligns more closely with their language learning background. Additionally, accentuating the first syllable may serve to lessen cognitive burden, given that the initial syllable marks the onset of a word and is typically more easily retained in memory. Therefore, placing the stress on the initial syllable is easier to achieve during production. It can be concluded that the number of syllable and the parts of speech are also significant factors which affect the stress

misplacement in the production of English word stress by Chinese EFL learners. Similar to the perception experiment, as the number of syllables increases, the frequency of stress misplacement also increases. The results of the perception experiment diverge in that while various parts of speech play a role in the misplacement of stress during the production process, verbs exhibit the most frequent occurrences of stress misplacement, with nouns and adjectives following closely behind. In the perception experiment, the frequency of stress misplacement in nouns has higher frequency of occurrence, with the less occurrence in verbs and adjectives.

4.3 Relationship Between Stress Misplacement in Perception and Production

Since the tendency of stress misplacement and influencing factors in perception and production were generally similar, it implied a certain connection between them. This connection indicated that the two processes involved similar language processing mechanism. This result was in agreement with Chen (2015), who explored Motor Theory and concluded that the mechanism of speech perception is closely related to that of speech production, that is, speech perception and production share one motor model.

Initially, there exists a commonality in the language processing mechanisms involved in stress perception and production, as stress misplacement in both processes is impacted by factors such as syllable count and grammatical category. The tendencies of stress misplacement exhibited in these two processes are substantially similar. For instance, when perceiving word

stress, participants tended to misplace the stress of *individualize* from the correct third syllable to the second and fifth syllable. Then in production, they identically misplaced the stress to the second and fifth syllable. Meanwhile, stress misplacement during production stands at 199, which is lower than the corresponding figure of 291 observed in perception. This suggests that Chinese EFL learners exhibit a superior proficiency in oral expression compared to stress perception. These learners demonstrate proficiency in accurately producing stress patterns when mimicking and rehearsing English vocabulary, yet encounter challenges in accurately discerning stress placement when listening to others speak passively. These learners may be better at improving their pronunciation skills through imitation and practice, and have difficulty accurately perceiving stress during passive listening. This finding was consistent with the research of Altmann (2006), which pointed out that stress perception and production shared common language processing mechanisms, but they differed somewhat in terms of executive control. Perception focused more on comprehension and recognition, while production required more executive control and motor coordination.

To display the relationship between stress misplacement in perception and production more intuitively, the author used SPSS to conduct scatter diagram analysis on the scores of each word in the perception and production experiments. Figure 1 showed that there was a positive correlation between stress misplacement in perception and production.

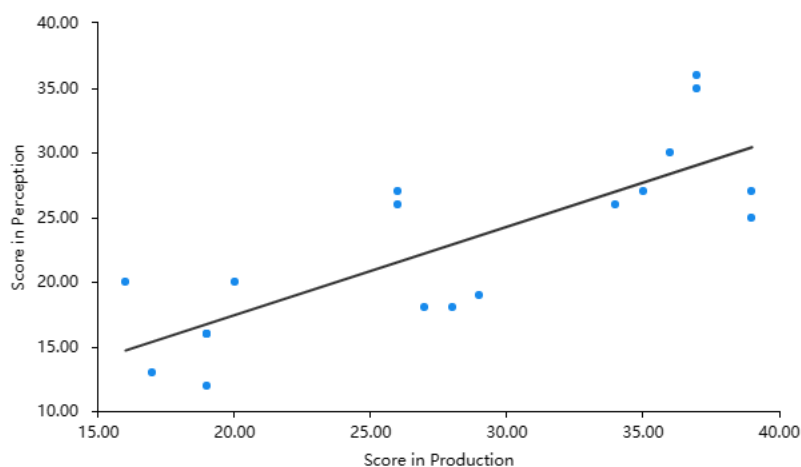


Figure 1. Scatter Diagram of Score in Perception and Production

Then the author conducted correlation analysis to

further explore the correlation, and used Pearson

correlation coefficient to represent the strength of the correlation. The detailed examination revealed a correlation coefficient of 0.796 between scores in perception and production. This result demonstrated a significant positive correlation ($p=0.01$, $p < .05$) between stress misplacement in perception and production.

In addition, this study showed that the frequency of stress misplacement in perception of polysyllabic words was higher than that in production. This is because the teachers typically adopt the traditional teaching method when teaching vocabulary, such as recitation and repetition to instruct students to fully grasp the spelling and pronunciation of words. However, this teaching method overlooks the acquisition of syllables and stresses in words. Even if Chinese EFL learners acquire word stress in this language environment, this acquisition is achieved through stress markers and phonetic symbols. If prompts for stress markers are not provided to these learners and only complete words are given, they are still unable to accurately identify the appropriate stress placement. In this situation, teachers usually use recording machines or personally lead the reading of words, through which learners can use their learning experience to produce stress positions with relatively high accuracy in production process. Therefore, the frequency of stress misplacement generated by participants when perceiving word stress is higher than when producing it.

Moreover, through interviews with some participants, the author found that when conducting perception experiment, they were able to make judgments of stress position of trisyllabic or four-syllable words more accurately according to the recordings. But when judging the stress position of five-syllable words, they were affected by the secondary stress and the length of the words, and could not accurately judge stress positions, thus the misplacement of the stresses occurred. During the production experiment, certain participants noted a decreased focus on stress position when articulating words, with their primary method for determining stress position being the emulation of the teacher or the listening materials. This also provides some insights into stress teaching. Teachers should adopt diverse teaching methods when teaching stress, instead of just adopting the traditional teaching method of repetition and imitation. In the process of

teaching, teachers can provide learners with plenty of listening materials to improve the ability of stress perception, and can help students accurately grasp the pronunciation rules and techniques of stress through systematic phonological training. Additionally, they can design a variety of forms of exercises such as combining speaking, listening and reading exercises.

5. Conclusion

5.1 Major Findings of the Research

This study investigated the tendency of stress misplacement in the perception and production of English polysyllabic words by Chinese EFL learners, as well as the relationship between the two processes. Based on the two experiments and subsequent data analysis, the major findings are summarized as follows. First, the perception experiment revealed that Chinese EFL learners experienced considerable difficulty in accurately identifying the correct stress position of English polysyllabic words. The frequency of perceptual misplacement was influenced by both syllable count and part of speech: misplacement increased with the number of syllables, occurred more frequently in nouns and verbs, and was least frequent in adjectives. A prominent tendency observed in perception was the misplacement of stress onto the second syllable; conversely, when words carried correct stress on the second syllable, learners frequently shifted it to the first. Second, the production experiment yielded generally similar patterns. The frequency of stress misplacement in production was likewise affected by syllable number and grammatical category. However, a notable difference emerged: in production, stress misplacement occurred most frequently in verbs, followed by nouns, with adjectives again showing the lowest error rates, and the initial stress preference was more pronounced than in perception. Third, the mechanism underlying word stress perception was found to be related to that of production, as the error tendencies and influencing factors were broadly comparable across the two modalities. A Pearson correlation coefficient of 0.796 ($p = 0.01$, $p < .05$) indicated a significantly positive correlation between perceptual and productive stress misplacement.

5.2 Implications of the Research

The findings demonstrate that Chinese EFL learners encounter challenges in both perceiving and producing stress in polysyllabic English

words, while exhibiting relatively better proficiency in production than in perception. These results carry several pedagogical implications. First, given that conventional teaching approaches tend to prioritize segmental instruction, additional classroom time should be allocated to suprasegmental features, among which stress constitutes a foundational element. It is advisable to incorporate stress assessment as a regular component of evaluating learners' mastery of pronunciation. Second, teachers should diversify practice activities by combining listening and speaking exercises to simultaneously enhance learners' perceptual and productive abilities. Such practice should ideally be conducted in contexts that approximate authentic communicative situations, enabling learners to acquire stress patterns and pronunciation that more closely resemble the target language. Third, teachers are encouraged to provide systematic instruction in phonetic and phonological knowledge, thereby equipping learners with a comprehensive understanding of English stress rules and enabling them to identify the underlying causes of their misplacement and develop personalized strategies for improvement.

5.3 Limitations and Suggestions for Future Research

Despite its contributions, the present study has certain limitations that should be acknowledged. One limitation concerns the experimental materials: the interference items consisted of only six disyllabic words, and future studies could incorporate monosyllabic or hexasyllabic words to enrich the stimulus set. Another limitation relates to the interval between the two experiments, which was relatively short. It cannot be guaranteed that participants had fully eliminated the influence of the perception experiment when they undertook the production task, potentially introducing a confounding effect on the results.

The findings suggest that comparable processing mechanisms may underlie stress misplacement in perception and production, as evidenced by the similar error tendencies and influencing factors observed in both modalities. Future research could further investigate these shared mechanisms and explore their pedagogical implications more comprehensively. In addition, the present study focused exclusively on non-English majors; subsequent research could examine stress misplacement patterns among English majors and compare the two

populations, thereby illuminating the relationship between language proficiency and stress acquisition.

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