

This dissertation investigated phonetic manifestations of the foot rhythm in English produced by native speakers of Japanese (hereafter 'Japanese English'). It especially focused on isochrony in the foot rhythm, whose physical realisation has not been demonstrated by previous studies. To investigate the developmental changes in Japanese English rhythm, the read speech of *the North Wind and the Sun* in the *J-AESOP* corpus was analysed for realisations of lexical stress (the rhythmic beat of English foot rhythm), epenthetic vowels (an estimated phonetic obstacle to the isochronous foot rhythm) and foot durations. The subjects in the corpus were divided into *advanced* and *beginner* groups according to the scores rated by 12 nonnative as well as 4 native speakers of English. This contrasts with most previous studies which relied on so-called *native speaker norms* in evaluating nonnative English speech, despite that the majority of English speakers today are nonnatives. Indeed, the scores showed high inter-rater consistency regardless of the raters' first language.

The phonetic analyses first investigated realisations of lexical stress in Japanese English. Based on the previous studies of English phonology and acoustic-phonetic analyses of Japanese English prosody, the duration and intensity were compared between vowels with and without lexical stress and in relation to the proficiency groups. The result showed greater durational reductions of lexically unstressed vowels in more proficient speech, i.e. the duration of lexically unstressed vowels was statistically smaller in the native English than in the advanced Japanese English, and smaller in the advanced Japanese English than in the beginner Japanese English. The unstressed vowels also had statistically smaller intensities in more proficient speech. In contrast, no statistical difference was observed in durations and intensities of lexically stressed vowels.

The dissertation also investigated the frequency of vowel epenthesis in Japanese English and actual realisations of the epenthetic vowels. The result of the statistical analysis of the frequency was consistent with the result of a previous study so that the advanced learner group of Japanese English had statistically less frequent epenthesis than the beginner learner group. On the other hand, durations of the epenthetic vowels were not statistically different between the advanced and beginner groups, suggesting no difference in the degree of influence of epenthetic vowels on the foot rhythm depending on the speaker's proficiency. In addition, the duration of epenthetic vowels was statistically smaller than that of lexically unstressed vowels for both proficiency groups, which implies the limited influence of epenthetic vowels on the durations of Japanese English foot.

The analyses of foot durations suggested that the foot rhythm is indeed more isochronous in native English than Japanese English speech. There was also a developmental change so that the advanced learner group manifested more isochronous rhythm than the beginner group. In addition, there were smaller proportional increases in foot durations in relation to the number of foot-internal syllables in more proficient speech, which also implies realisations of more isochronous feet by more proficient speakers. On the other hand, the results of the analyses of compensatory shortening of foot-internal syllables were rather difficult

to interpret. In addition, the current study investigated the relative effects of lexical stress contrasts and vowel epenthesis on Japanese English foot durations. The result showed different contributions of the factors in the beginner and advanced Japanese English speech.

The final part of the dissertation will discuss the factors in native and Japanese English speeches that contribute to their isochrony. It will also discuss the implications of the results of the current study for teaching English rhythms to nonnative speakers. Overall, the results indicate the importance of the durational reduction of lexically unstressed vowels in manifestations of isochronous foot rhythm. It is hoped that future research will investigate the relative effect of instructing manifestations of foot rhythm and lexical stress contrast on the acquisition of more isochronous rhythm in nonnative English.