

## TEMPO EFFECTS ON THE DURATION OF JAPANESE VOWELS AND CONSONANTS

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This paper attempts to observe how speech tempos influence the durational relationship between consonants and vowels in Japanese.

Subjects

Three speakers read a list of bisyllabic words in carrier phrases with three different speech tempos: slow, natural and fast. We measured the duration of the phrases, the test words, the voice onset time (VOT) of the initial stops, the first and second vowels, and the medial stop closure duration or frication duration. At the slow tempo, the lengthening ratio for each item was almost the same as that for the whole phrase. At the fast tempo, however, the timing structure was altered: accented first vowels were less reduced, but at the same time VOT was more reduced. In general, when comparing different combinations, it was found that when medial consonant duration was less reduced, the second vowel was more reduced, or reduced to the same extent as in other combinations, and when medial consonant duration was more reduced, or reduced to the same extent as other consonants, the second vowel was less reduced. Thus a fixed reduction ratio was kept for word duration and other parts of the phrase.

Conclusion

The present study supported the results of my previous paper (Homma, 1978a) which showed that in Japanese, given a certain number of moras, closure duration, VOT and vowel duration work together to obtain fixed word duration. VOT in Japanese has smaller values both for voicing lag and voicing lead than in other languages (Lisker and Abramson, 1964; Homma, 1978b). At the fast tempo, VOT was reduced more than other parts of the utterance. This may imply that VOT is not so important a cue to separate Japanese voiced and voiceless stops as in English (Port, 1977).

References

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