

Comparison of lexical access speed between Japanese and English speakers

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Introduction

- We often perceive foreign languages to be faster than our L1 [1].
- In my previous study I showed that word familiarity is a major contributing factor of higher English rate perceived by Japanese speakers [2].
- However, English speakers also perceived sentences composed of less familiar words to be faster than those composed of more familiar words [2].
- Then it is still unknown why Japanese speakers perceive English as faster than English speakers.
- Studies have shown that low-frequency (or less familiar) lexical items are accessed more slowly [3].
- If there is a significant difference in lexical access speed between Japanese and English speakers, the slower access to lexical items, rather than word familiarity, could be a stronger reason why perceived rate of English is higher for Japanese speakers than English speakers.

Participants

The participants were: -

- 35 Japanese learners of English, whose English level was lower intermediate.
- 25 Australian English speakers.

Stimuli

- The stimuli were composed of 66 English words spoken with a BBC accent.
- They included 37 more familiar words and 29 less familiar words based on the English word list in the order of familiarity to Japanese speakers [4].

Procedures

- The stimuli were randomly presented to the participants over headphones.
- They were asked to repeat the word they heard as soon as possible.
- The elapsed time between the presentation of the stimulus token and the onset of the participant's vocal response was measured by using SV-1 and SuperLab software (Cedrus, Phoenix, Arizona).

Results

Table 1 shows the results.

- An independent-sample t-test indicated that the reaction time to more familiar words was significantly larger for Japanese speakers ($M=961$, $SD=308.9$) than English speakers ($M=651$, $SD=160.0$), $t(1943)=27.05$, $p<0.001$.
- It also indicated that the reaction time to less familiar words was significantly larger for Japanese speakers ($M=1329$, $SD=474.0$) than English speakers ($M=734$, $SD=205.7$), $t(1170)=29.3$, $p<0.001$.

Table 1. Average reaction times and differences (ms).

Word frequency (familiarity)	Japanese speakers	English speakers	Difference (t-test)
High	961	651	310**
Low	1329	734	595**

Discussion

- Whether it was to more familiar words or to less familiar words, the reaction time was always significantly larger for Japanese speakers than English speakers.
- The difference was larger for less familiar words than more familiar words.
- These results suggest that even if English speakers perceive less familiar words as faster than more familiar words just as Japanese speakers do, Japanese speakers perceive the same less familiar words as much more faster than English speakers.
- It seems to be the lexical access speed rather than word familiarity that determines the perceived rate of speech.

References

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