

JL1'S IDENTIFICATION OF QUANTITY IN FINNISH DISYLLABIC MEANINGFUL WORDS IN DIFFERENT WORD STRUCTURES

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Introduction

Japanese and Finnish have both short and long vowels and consonants, which are categorically distinctive in phonetic duration, and phonologically and linguistically distinctive. Thus, these languages are so-called 'quantity' languages. In [1] and [2] I illustrated the similarities and differences of the Japanese and Finnish quantity. In [1] I used Finnish and Japanese disyllabic nonsense words in the structure of $C^1V^1(V^1)C^1C^1V^1(V^1)$, and proved that the Japanese could produce and perceive $C^1V^1V^1C^1C^1V^1V^1$ structured words which do not exist in Japanese. Apart from these studies, I measured the temporal control of the Finnish CV_nCV/CV_nCCV meaningful words which were phonotactically different and proved that /n/ in CV_nCCV was much shorter than /n/ in CV_nCV . ([1])

Purpose

In this study I shall investigate Japanese speakers' identification in hearing and writing of the Finnish disyllabic meaningful words in the structure of $C^1V^1\#C^1V^1/C^1V^1C^1\#C^1V^1$ and $C^1V^1_n\#C^1V^1/C^1V^1_nC^1\#C^1V^1$, which are minimal pairs containing the same consonantal singleton and geminates. $C^1V^1\#C^1V^1$, $C^1V^1C^1\#C^1V^1$ and $C^1V^1_n\#C^1V^1$ structural words exist in Japanese but not $C^1V^1_nC^1\#C^1V^1$.

Experiments

The test words were *kasa* ('heap'), *kassa* ('cashier'), *kansa* ('nation'), and *kanssa* ('with'). It is noted that the words *kasa* and *kansa* exist in Japanese. The Finnish informant, who is an adult educated Helsinki dialect speaker, uttered these words five times each ($4 \times 5 = 20$ words). The experiments consisted of three kinds: (1) Finnish production, (2) Japanese transliteration from Finnish writing system (alphabet) into two Japanese writing styles: in katakana (phonetic letters) and *roomaji* (alphabetical letters), and (3) Japanese identification tests in the same methods as in (2). In the production test, I measured respective phonemic duration excluding the closure part of word-initial /k/, and calculated the mean value and standard deviation (*SD*) according to each word group. 11 Japanese male and female university students, who have no knowledge of Finnish language, participated in the transliteration and identification tests. The identification test was a forced one, i.e., choosing one out of two word groups: *kasa* vs. *kassa*, *kansa* vs. *kanssa*.

Results

Figure 1 shows the temporal distribution of *kasa* and *kassa* and figure 2 the same of *kansa* and *kanssa*. The Finns clearly differentiated the durational proportion between singleton and geminates. The durational ratios of /n/ in both CV_nCV and CV_nCCV were similar.

Figure 3 shows the overall mean correct answer ratios in two writing styles for the transliteration and identification tests. The results were follows: (a) identification > transliteration, (b) roomaji > katakana except *kassa* and *kanssa*, and (c) *kasa/kassa* > *kansa/kanssa*.

Figure 4 shows the overall mean *SD* of correct answer ratios in two writing styles for the transliteration and identification tests. The results were follows: (a) *kasa* > *kassa*, (2) *kansa* > *kanssa* (except katakana in transliteration), and (c) *kansa/kanssa* > in identification.

Conclusion

These results indicate that (1) the Japanese speakers could identify the words in which only word-medial singleton and geminates were different phonotactically and were unknown to them, and thus they could make a difference in their durational categorisation, (2) that the writing style affected JL1 in both their identification and transliteration of/from the Finnish test words, although there was presumably a limitation to the writing in Japanese, and that (3) the durational ratios of /n/ might be similar in meaningful words when phonotactics is the same but could be different when not. For further studies, a larger number of informants and subjects must be added in order to reinforce the results.

References

- [1] Isei-Jaakkola, Toshiko. (2004). *Lexical quantity in Japanese and Finnish*. Publications (48) of Department of Phonetics. University of Helsinki.
- [2] Isei-Jaakkola, Toshiko. (2011). 'A comparison of gemination in Finnish and Japanese.' GEMCON 2010. Kobe University.

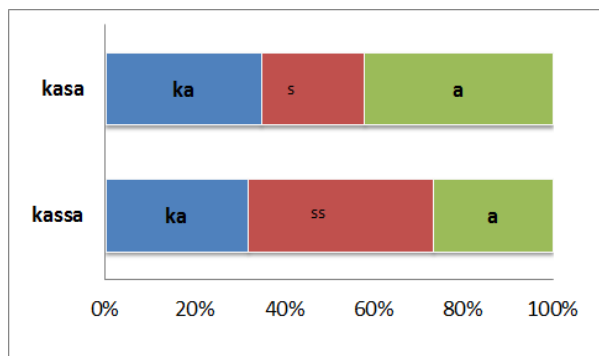


Fig. 1 Temporal distribution: *kasa* and *kassa*.

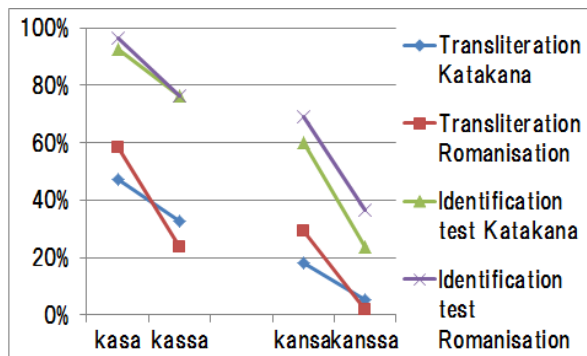
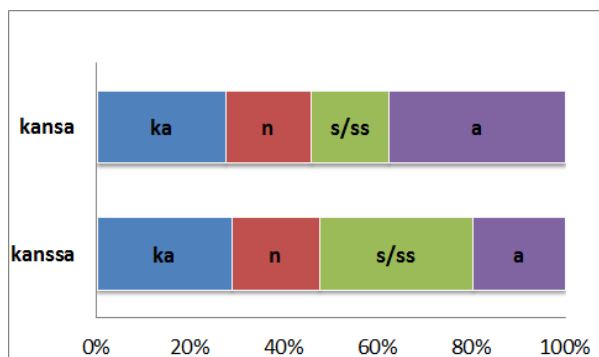


Fig. 3 Overall mean correct answer ratios in the transliteration and identification tests.



Fi g. 2 Temporal distribution: *kansa* and *kanssa*

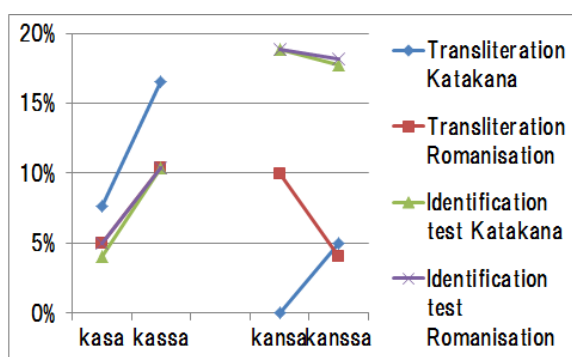


Fig. 4 Overall mean *SD* of the correct answer ratios in the transliteration and identification tests.