The Influence of OCP on Word Truncation:
A study of Modern Japanese Abbreviation of Compound Loanword Nouns with Long Vowels
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In this study we investigated the abbreviation patterns of loanword compounds in Japanese, focusing especially on the influence of the Obligatory Contour Principle (Goldsmith 1976).

In Japanese, loanwords are often truncated to form new words (Itô 1990, Kubozono and Ogawa 2005, Labrune 2002). Many complex words tend to be abbreviated as quadrisyllabic patterns by clipping the initial two morae from each component of the base word (e.g. *dezitaru* + *kamera* → *dezikame* ‘digital camera’). However, in the case of a first component with a long vowel, it is possible to retain the long vowel as in (1a) or to suppress as in (1b).

(1) The patterns of complex abbreviated words with long vowels in the first component

a. syaapu pensiru → syaapen *syapupen ‘mechanical pencil’

b. paasonaru konpyuutaa → pasokon *paakon ‘personal computer’

In (1a), *syaapu pensiru* cannot be abbreviated *syapupen* and in (1b) *paasonaru konpyuutaa* cannot be abbreviated *paakon*. This second type (e.g. *pasokon*) does not maintain the long vowel and replaces it with the next independent mora. In the first type (e.g. *syaapen* in (1a)), the initial long vowel tends to be maintained, especially when the same consonant is repeated at the morpheme boundary of an abbreviated word, therefore, quadrisyllabic patterns tend to be avoided by influence of the OCP.

To reveal what consonant sequences lead to avoidance of quadrisyllabic patterns, we conducted a forced-choice test, focusing especially on the difference between dorsal, coronal and labial places of articulation (Table 1). Participants saw compound loanword nouns with long vowels, e.g. *riipino* (nonsense word) and *panfuretto* (real word, ‘pamphlet’), and were asked to choose between two possible abbreviation patterns, e.g. *riipan* (trisyllabic patterns) or *ripipan* (quadrisyllabic patterns).

Results were as follows. First, abbreviation patterns that repeat a consonant articulation were avoided. Second, sequential labials were avoided more often than sequential dorsal and coronal gestures (Figure 1). A chi-square test of independence was performed to examine the relation between abbreviation patterns and places of articulation. The relation between these variables was significant ($\chi^2 (1) = 35.79, p<.01$). Labials were more likely to be avoided in quadrisyllabic patterns than were dorsals and coronals. This analysis reveals that the influence of the OCP on word truncation in Japanese is related to the duration of the sequence of consonants at the morpheme boundary. Third, the influence of the OCP in Japanese is not limited to the morpheme level.
Table 1. Sequence of consonants at the morpheme boundary.

<table>
<thead>
<tr>
<th></th>
<th>dorsal</th>
<th>coronal</th>
<th>labial</th>
</tr>
</thead>
<tbody>
<tr>
<td>voiceless</td>
<td>kk</td>
<td>tt</td>
<td>ss</td>
</tr>
<tr>
<td>voiced</td>
<td>gg</td>
<td>dd</td>
<td>zz</td>
</tr>
<tr>
<td>voiceless +  voiced</td>
<td>kg</td>
<td>td</td>
<td>sz</td>
</tr>
<tr>
<td>voiced + voiceless</td>
<td>gk</td>
<td>dt</td>
<td>zs</td>
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Figure 1. Results of the forced-choice test