Adaptation of COVID-19-related Loanwords into Japanese

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Abstract
In recent years, the quantity of loanwords adapted from foreign languages has increased as globalization advanced. Among this process, assimilation and extinction of the words are natural phenomena that have been observed in the past and the present. The changes produced by these processes sometimes cause communication gaps among people due to the lack of understanding. This study aims to shed light on how loanwords related to the COVID-19 pandemic have been adapted and used in comparison with the equivalent native lexicons in contemporary Japanese. In an attempt to achieve this research goal, firstly, COVID-19-related articles were collected from the Mainichi newspaper during the first wave of the pandemic. Secondly, loanwords were extracted by using morphological analysis. Lastly, the frequency of use of the selected loanwords and each loanword's changing tendency in comparison to the equivalent native Japanese words were analyzed. The findings show that COVID-19-related loanwords present distinct features in each word, and they can be divided into three groups: (1) loanwords that have consistent trend and frequent usage, (2) loanwords used in the same proportion as the equivalent native lexicons, and (3) loanwords that are replaced by native lexicons with time. These results contribute to understanding the process of loanwords adaptation in Japanese.

Keywords: Adaptation, COVID-19-Related Loanwords, Japanese, Equivalent Native Lexicons
1. Introduction

The Japanese language is made up of three primary components. Native words (i.e. *wago*), Sino-Japanese words (i.e. *kango*) and loanwords (i.e. *gairaigo*) (Daulton, 2007; Irwin, 2011). Among these, loanwords that come from Western languages, have continually increased as globalization advanced and mutual relationship among nations developed. In general, English-based loanwords are more common than other loanwords from European languages (Miller, 1967). It is well known that loanwords make up approximately 10% of the Japanese language (Kunert, 2020), and that indicates the significance loanwords have in the Japanese lexicon.

When loanwords are integrated into Japanese, they typically undergo modifications, such as orthographical, phonological, morphological, semantic, and syntactic assimilations (Haugen, 1950; Kay, 1995; Loveday, 1996; Wawrzyniuk, 2017). After undergoing these systemic changes, they finally become part of the Japanese lexicon. Kay (1995) noted that English-based loanwords can easily be absorbed because of the existence of grammatical markers and Katakana characters in Japanese. The author especially highlights the fact that Katakana characters aid the assimilation of loanwords into the Japanese language system. Besides that, other studies focused on the assimilation of loanwords by comparing them with native words that have similar meanings (Kim, 2006a, 2006b; Kuya 2013). Kim (2006b) analyzed the word *kēsu* (case) considering its internal factors (i.e., the conditions under which the word can be used in a sentence) and pointed out that this loanword became a widely used word in Japanese. On a different approach, Kuya (2013) examined the same word *kēsu* considering the external factors (i.e., user’s age and gender, educational background, etc.) and found out that the younger people use *kēsu* more than its equivalent native words in Japanese.

Loanwords adaptation into Japanese varies from word to word. Thus, incomplete assimilation of loanwords sometimes causes communication gaps among people (Jinnouchi, 2007; NINJAL, 2006, 2007). Jinnouchi (2007) points out that the older the person is, the lower their awareness of loanwords gets, and this causes communication gaps, a social problem beyond language and culture. In an attempt to minimize the problem of the unintelligibility of loanwords, the Japanese Ministry of Education, Culture, Sports, Science, and Technology has proposed near-equivalent native words to replace those loanwords (Kunert, 2020). Also, one of the traits of the loanwords is the fact that they keep continuously changing and that they change very fast. Considering this aspect, it is possible to assume that it is necessary to continuously identify newly adapted words.

Since 2020, COVID-19 has emerged in most countries, bringing a lot of international attention. Because of that, COVID-19-related words appeared and made a substantial impact on our languages (Ahmed and Islam, 2020; Mweri, 2021; Oxford English Dictionary, 2020; Roig–Marín, 2020). In this sense, COVID-19 and its effects on the Japanese language can be used as an example of the process of adaptation of relatively recent words into Japanese.

The purpose of this study is to investigate the process of adaptation of loanwords in Japanese particularly, through an analysis of COVID-19-related loanwords comparing them with the equivalent native lexicons. By doing this research, we can better understand how loanwords are integrated into Japanese and how we can cope with the deluge of new loanwords in the near future. In the next section, we describe the methodology used to achieve our research goals. In section 3, we classify the COVID-19-related loanwords based on the change of usage trend compared to the equivalent native lexicons. Lastly, in the final section, we
present the conclusions and discussions of this study. Throughout this paper, loanwords in Japanese will appear italicized, using the Hepburn romanization system, and English-based loanwords will be typically written in the Roman alphabet.

2. Methodology

As shown in Figure 1, the methodology of this research can be divided into four steps.

![Figure 1: Research Procedures](image)

Step 1: Collecting COVID-19-related articles from a newspaper

In the first step, we collected COVID-19-related articles from the Mainichi Shinbun, which is one of the national newspapers in Japan. Specifically, we gathered articles during the first wave of the pandemic, from January to May 2020, because the number of COVID-19 cases in Japan shows its first peak in the middle of April, as shown in Figure 2 (Ministry of Health, Labour and Welfare, 2020). We collected articles by keyword search, including shingata haien (a new type of pneumonia), korona (virus) (corona (virus)), and COVID. The total numbers of sentences extracted from news articles was 26,124.

![Figure 2: Number of COVID-19 cases in Japan (January ~ May 2020)](image)
Step 2: Extracting COVID-19-related loanwords

In the second step, loanwords written in Katakana were extracted from the collected articles by using morphological analysis. However, loanwords that were already widely used, such as wakuchin (vaccine), wirusu (virus), etc. were excluded.

Step 3: Analyzing the frequency of use of the loanwords and their equivalent native lexicons

In the third step, we investigated the frequency of use of the selected loanwords and the native lexicons that have similar meanings in Japanese. The native lexicons include both Sino-Japanese words and the noun phrases that combine multiple Sino-Japanese words (e.g., sekaiteki na dairyūkō for pandemic, kokibo na kanja shūdan for cluster). Sino-Japanese words (kango) are distinguished from native words (wago). However, Sino-Japanese words were adopted much earlier than English-based loanwords and settled to Japanese. Thus, in this study, Sino-Japanese words are considered as native lexicons in a broad sense and selected as targets. Also, we only selected as targets for this study loanwords that, combined with their equivalent native words, were used more than 30 times in total.

Table 1 presents the rule for counting the frequency of loanwords and native lexicons. Loanwords used independently (without the Japanese translation in parentheses) (L1) and loanwords used with a Japanese translation in parentheses (L2) were counted as loanwords. Native lexicons accompanied by the equivalent loanword in parentheses (N1) and native lexicon used independently (N2) were counted as native lexicons.

### Table 1: Rules for counting the frequency of loanwords and native lexicons

<table>
<thead>
<tr>
<th>Classifications</th>
<th>Expressions in articles</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loanwords</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L1</td>
<td>rokkudaun</td>
<td>1</td>
</tr>
<tr>
<td>L2</td>
<td>rokkudaun (toshi ōsa)</td>
<td>1</td>
</tr>
<tr>
<td>Native lexicons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N1</td>
<td>toshi ōsa (rokkudaun)</td>
<td>0</td>
</tr>
<tr>
<td>N2</td>
<td>toshi ōsa</td>
<td>0</td>
</tr>
</tbody>
</table>

Step 4: Examining each loanword's changing tendency by comparing with native lexicons

Lastly, we re-researched the native lexicons that appeared in parentheses because there is a possibility that those can be used independently. In addition, we also investigated each loanword's changing tendency by comparing the loanwords with their equivalent native lexicons.

3. Results

As for the frequency of use, we found a considerable number of COVID-19-related loanwords as given in Table 2. kurasutā (cluster) shows the highest frequency, and followed by terewāku (telework) and pandemikku (pandemic). There were also a variety of loanwords such as posuto korona (post-COVID-19), sutei hōmu (staying at home), afutā korona (after COVID-19), autobureiku (outbreak), wizu korona (with COVID-19), but, since they were used at a low frequency, they were eventually eliminated from the analysis. We only used loanwords that, combined with their equivalent native words, appeared more than 30 times in total, as mentioned earlier. More precisely, eight types, including remote work (i.e., the total number of different words) and 1,099 tokens (i.e., the total number of times the word
appears), were found in the newspapers. Table 3 shows these target loanwords and their equivalent native lexicons with frequencies from the newspaper.

### Table 2: COVID-19-related loanwords and their frequencies from the newspaper

<table>
<thead>
<tr>
<th>Loanwords in Japanese</th>
<th>Loanwords in English</th>
<th>Tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>kurasutā</td>
<td>cluster</td>
<td>237</td>
</tr>
<tr>
<td>terewāku (rimōtowāku)</td>
<td>telework (remote work)</td>
<td>151</td>
</tr>
<tr>
<td>pandemikku</td>
<td>pandemic</td>
<td>92</td>
</tr>
<tr>
<td>rokkudaun</td>
<td>lockdown</td>
<td>63</td>
</tr>
<tr>
<td>korona shokku</td>
<td>coronavirus shock, shock of COVID-19</td>
<td>46</td>
</tr>
<tr>
<td>ōbāshūto</td>
<td>overshoot</td>
<td>27</td>
</tr>
<tr>
<td>ekumo</td>
<td>ECMO</td>
<td>26</td>
</tr>
<tr>
<td>fēsu shirudo</td>
<td>face shield (mask)</td>
<td>18</td>
</tr>
<tr>
<td>sōharu disutansu (disutanshingu)</td>
<td>social distancing</td>
<td>17</td>
</tr>
<tr>
<td>sājikaru masuku</td>
<td>surgical mask</td>
<td>14</td>
</tr>
<tr>
<td>sāmogurafī</td>
<td>thermography</td>
<td>13</td>
</tr>
<tr>
<td>doraibu surū</td>
<td>drive through</td>
<td>12</td>
</tr>
<tr>
<td>fēsu gādo</td>
<td>face guard</td>
<td>11</td>
</tr>
<tr>
<td>posuto korona</td>
<td>post-COVID-19</td>
<td>6</td>
</tr>
<tr>
<td>infodemikku</td>
<td>infodemic</td>
<td>5</td>
</tr>
<tr>
<td>sāmokamera</td>
<td>thermal camera</td>
<td>4</td>
</tr>
<tr>
<td>sutei hōmu</td>
<td>staying at home</td>
<td>3</td>
</tr>
<tr>
<td>shirudo masuku</td>
<td>(face) shield mask</td>
<td>2</td>
</tr>
<tr>
<td>afutā korona</td>
<td>after COVID-19</td>
<td>2</td>
</tr>
<tr>
<td>epidemikku</td>
<td>epidemic</td>
<td>1</td>
</tr>
<tr>
<td>korona pātti</td>
<td>corona (virus) party, COVID party</td>
<td>1</td>
</tr>
<tr>
<td>autobureiku</td>
<td>outbreak</td>
<td>1</td>
</tr>
<tr>
<td>nyūnōmaru</td>
<td>new normal</td>
<td>1</td>
</tr>
<tr>
<td>wizu korona</td>
<td>with COVID-19</td>
<td>1</td>
</tr>
</tbody>
</table>

Total: 773

Further, we also found out that each COVID-19-related loanword presents distinct features, and they can be classified into three main groups based on the relationship with native lexicons. The first group comprises only loanwords that were largely used from January to May 2020. The second group is characterized by loanwords used in the same proportion as the equivalent native lexicons. Finally, the third group is made up of loanwords that were replaced by a native lexicon with time. All loanwords in these groups are used only as nouns.

Figure 3 details the usage tendency of loanwords and native lexicons in group 1. The frequency in this figure shows the total of loanwords and native words. This group includes ‘pandemic’ and ‘corona shock.’ For this group, there is a clear trend of using mainly loanwords. A possible explanation for this is that there are no native lexicons to express the exact meaning of these loanwords. In the case of ‘pandemic,’ its alternative native lexicon sekai teki (na) dairyūkō was used a few times, but ‘pandemic’ was dominant over the target period.
Table 3: Target loanwords and their native lexicons with frequencies from the newspaper

<table>
<thead>
<tr>
<th>Loanwords</th>
<th>Native lexicons</th>
<th>Tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>kurasutā cluster</td>
<td>shūdān kansen, kansen shūdān, kansen no shūdān, kokibo na kanja shūdān</td>
<td>169</td>
</tr>
<tr>
<td>terewāku (rimōtowāku) telework (remote work)</td>
<td>zaitaku kinmu, toshi no jūsa, zendo jūsa</td>
<td>167</td>
</tr>
<tr>
<td>rokkudaun lockdown</td>
<td>kansen bakuhatsu, bakuhatsuteki na kansen, bakuhatsuteki na kanja, kyūzō, kansen no bakuhatsuteki zōka</td>
<td>56</td>
</tr>
<tr>
<td>ōbāshūto overshoot</td>
<td>kansen bakuhatsu, bakuhatsuteki na kansen, bakuhatsuteki na kanja, kyūzō, kansen no bakuhatsuteki zōka</td>
<td>55</td>
</tr>
<tr>
<td>sōsharu disutansu (disutanshingu) social distancing</td>
<td>shakaiteki kyori, shakaiteki kyori no kaku ho</td>
<td>15</td>
</tr>
<tr>
<td>pandemikku pandemic</td>
<td>sekaiteki (na) dairyūkō</td>
<td>4</td>
</tr>
<tr>
<td>korona shokku shock, shock of COVID-19</td>
<td>korona shokku, korona shokku no kaku ho</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>466</strong></td>
</tr>
</tbody>
</table>

Figure 3: Usage trend of loanwords and native lexicons from group 1

In (1), (2), and (3), we present examples of sentences with the loanwords from group 1. In (1) and (3), these loanwords are used as L1 patterns in the newspapers. On the other hand, (2) shows the L2 pattern (native lexicon coming after the loanword ‘pandemic’). ‘Pandemic’ means a disease that spread throughout the world, and ‘Corona shock’ is literally a shock that can cause the standstill of the global economy because of the spreading of the coronavirus.
(1) Tada, genjō-o pandemikku towa ninteishinakatta. (March 1, p.3)
However current situation-ACC pandemic COMP recognized-NEG
‘However, (they) did not recognize the current situation as a pandemic.’

(2) Sekaijū-ga pandemikku (sekaiteki dairyūkō)-to
Whole world-NOM pandemic worldwide epidemic -COMP
kakutōshiteiru. (March 25, p.6)
is fighting
‘The entire world is fighting against the pandemic (worldwide epidemic).’

(3) Korona shokku-de kōkū gyōkai-no keshiki-wa
Corona shock because of aviation industry-GEN landscape-TOP
ippenshita. (April 27, p.2)
changed
‘The landscape of aviation industry rapidly changed because of the Coronavirus shock.’

Figure 4 shows the results for COVID-19-related words from group 2. This group includes ‘cluster’ and ‘telework (remote work).’ The former means ‘a group of cases of disease’, and the latter means ‘working from home.’ It can be seen from Figure 4 that both of them have in common the fact that the loanwords and the equivalent native lexicons are used in the same proportion. ‘cluster’ takes the higher proportion compared to its native lexicon, but native lexicons such as kokibo na kanja shūdan (a small group of patients), shūdan kansen (mass infections), kansensha no shūdan (a group of infected patients) were also used.

Figure 4: Usage trend of loanwords and native lexicons from group 2

Sentences (4) and (6) present examples of the L1 pattern whereas, (5) and (7) present the opposite pattern (N1 and N2, respectively), in which the native lexicon comes first. As mentioned before, there are several native lexicons that express the same meaning of ‘cluster,’ but in the examples below, we only present one of those lexicons kokibo na kanja shūdan (a small group of patients). On the contrary to this, only one native lexicon can be seen as a substitute for ‘telework (remote work),’ which is zaitaku kinmu (working from home).

(4) Futatsuno ōkina kurasutā-ga Nagoya-ni dekita. (April 16, p.24)
Two big-NOM Nagoya-LOC occurred
‘Two big clusters occurred in Nagoya.’

(5) Tada, chiiki goto-ni kokibo na kanja shūdan (kurasuta)-ga hanmeishita
However region each-LOC small patients group cluster-NOM identify
case-TOP closing schools-ACC require
‘However, closing schools is required when a small group of patients is identified in each region.’

(6) Kōjō ya inshokuten nado dōshitemo terewāku
Factories and restaurants etc. no matter what telework
dekinai gyōmu mo aru tameda.
‘Because there are some business in which telework is not possible such as factories and restaurants etc.’

(7) Ōte kigyō nado-de zaitaku kinmu-ga hirogari,
Large companies etc.-LOC at home working-NOM spread,
nomikai-o jishukusuru ugoki-ga deteirunoda.
‘Working from home has become more widespread among large companies and a movement of self-restraint of drinking after work is occurring.’

The usage trend of COVID-19-related words from group 3 is presented in Figure 5. This group includes ‘social distance (distancing), ‘lockdown’ and ‘overshoot.’ It is apparent that loanwords have been replaced with native lexicons with time. Regardless of the total frequency, the decreasing tendency of loanword proportion is consistent. It indicates that loanwords have been substituted by native lexicons, such as shakaiteki kyori (social distancing), toshi no fūsa (closing of city), and kansen bakuhatsu (explosion of infection). ‘social distancing (distance)’ means the physical space between people to minimize the spread of the virus. ‘lockdown’ is a measure that restricts individuals from going outside in an attempt to control the spreading of the disease. ‘overshoot’ means an explosion of the number of infected people. In March and April, the pattern that uses loanwords at the front is seen as in the examples in (8), (10), and (12). In contrast, the other pattern, which uses native lexicons at the front, gradually increased as time passed, as exemplified in (9), (11), and (13).
(8) Ion-wa yōka, kyaku-ga reji-no mae-de itteino kyori
Aeon-TOP the 8th customers-NOM register-GEN front-LOC a certain distance
“sōsharudisutansu (shakaiteki kyori)”-o totte naraberayō, ichibu tenpo-no
social distancing (social distance)-ACC keep in line some stores-GEN
yuka-ni mejirushi-no teeup-o hatta.
(April 9, p.25)
‘On the 8th, Aeon attached a marker tape on the floor of some stores so that customers could
keep a certain distance (“social distancing”) while lining in front of the cash register.’

(9) Shikashi jinkō 2 oku 1000 mannin no uchi 1300 mannin-wa
But population 210 million people among 13 million people-TOP
hinkon chiku-ni sumi, shakaiteki kyori-ga torenai.
(May 26, p.7)
poor areas-LOC live social distancing-OBJ keep-NEG
‘But, 13 million people out of the 210 million population live in poor areas and cannot keep
social distancing.’

(10) Somosomo Nihon-no genzai-no hō seido dewa rokkudaun (toshi fūsa)-no
Originally Japan-GEN present-GEN legal system in lockdown city closing-GEN
shikumi-ga nai.
(April 10, p.17)
system-NOM there be-NEG
‘Originally, there is not lockdown (city closing) system in Japan's current legal system.’

(11) Abe Sinzō shushō-wa muika, shushō kantei-de kishadan-ni
Abe Sinzō prime minister-TOP the 6th Prime minister's Office-LOC reporters-DAT
“kaigai noyōna toshi-no fūsa (rokkudaun)-wa simai. […]”
(April 7, p.1)
overseas like city-GEN closing lockdown-TOP do-NEG
‘Prime Minister Shinzo Abe told reporters at the Prime Minister's Office on the 6th, “We will
not close cities (lockdown) like people overseas did.’ […]

Figure 5: Usage trend of loanwords and native lexicons from group 3
Like this circumstances from doctors and experts from overshoot explosive infection spreading-ACC worry voice-NOM increased
‘Under these circumstances, the concerns of doctors and experts about overshoots (explosive spreading of infection) increased.’

‘As the explosion of infection increased, the Chinese government imposed a lockdown in Wuhan on 23rd January.’

4. Discussions & Conclusions

In the present study, we examined how COVID-19-related loanwords have been incorporated into the Japanese language. Firstly, we found that a considerable number of COVID-19-related loanwords were used in a span of five months. Some loanwords were accepted and used since there is no other way to express the same meaning more clearly using native lexicons, and some loanwords were used in spite of the fact that there were already interchangeable native lexicons.

The usage trend of loanwords varied depending on the word even though a number of loanwords were adopted due to the spread of COVID-19. Based on the comparison between loanwords and their equivalent native lexicons, loanwords were divided into three groups: The first one is the group that shows the trend of mainly using loanwords. The second one is the group in which the loanwords and their equivalent native lexicons are used in the same proportion. The third one is the group that shows the opposite trend of the first group, which is loanwords being replaced with their equivalent native lexicons. Focusing on loanwords included in the last group, we found out that they were considered to be unfamiliar and difficult to use by Japanese speakers, and their usage became an issue. According to the “Bōeishō,” (2020) and Yamashita (2020) websites, these loanwords should be replaced by Japanese native lexicons because they are not generic terms. From the result of the last group, it seems that this public issue may affect the frequency of use of the loanwords. The results of this study indicate that the external environments, for example, social issues or public opinion, have a big impact on the incorporation of loanwords.

Loanwords related to COVID-19 are only used as nouns because they are still in the early stage of adaptation. A majority of loanwords in Japanese are nouns (Loveday, 1996) since it is easier to adapt nouns than other parts-of-speech (Daulton, 2007). However, there are verbs related to COVID-19 in English. For example, the expression ‘(to) socially distance’ is a verb made up from the expression ‘social distancing’ (Collins; Merriam-Webster). Investigating the trend of loanwords, including parts-of-speech, can help to clarify the adaptation system.

This study contributes to understanding the process of loanwords adaptation in Japanese. In future researches, we plan to examine COVID-19-related loanwords during the second and third waves in Japan and then compare the first wave, the second wave, and the third wave to
verify whether there are differences or not. We also plan to investigate COVID-19-related loanwords in Korean, which has many common grammatical features with Japanese and compare the differences in adaptation of the loanwords between the two languages (Japanese and Korean).


