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Relevant Dutch Lexical Influence in Contemporary Modern Japanese

Willem Adriaan Cornelis Koen

Lund University
Centre for Languages and Literature
Supervisors: Rika Hayashi and Mechtild Tronnier
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Abstract

During the Edo Period of Japanese history, many loanwords entered the Japanese language through communication with the Dutch. Now, 164 years after the last significant linguistic exchange took place between the Dutch and the Japanese, it is interesting to see what lexical influence still exists in contemporary modern Japanese and which loanwords have fallen out of use. Therefore, the aim of this bachelor's thesis is to determine the relevance of Dutch lexical influence in contemporary modern Japanese. The historical nature of this specific topic makes it possible to compile a base pool of Dutch loanwords in Japanese totalling 500 entries, which is based on the results of previous research. A three-tiered quantitative analysis consisting of a dictionary cross-analysis, corpus analysis and questionnaire was then conducted on this base pool of loanwords, in order to investigate which entries are still used frequently enough to be considered relevant in contemporary modern Japanese. According to the findings of this thesis, 358 words with Dutch lexical influence exist in contemporary modern Japanese. A list of these words is included as two tables at the end of this thesis.

Keywords: Japanese Language, Dutch-Japanese, Dutch Lexical influence, Loanwords, Lexical exchange, Lexical influence

Conventions and Abbreviations

Romanisation

Japanese words are romanised in accordance with the modified Hepburn system. Long vowels will be transcribed with diacritic macrons, with the exception of long ‘e’ in non-katakana words, which will be written as ‘ei’. Words for terms and names of Japanese origin that have become part of the English language will use their established English spelling.

Typographical Conventions

Italics are used for all romanised Japanese words. Dutch words or words of other origin will be marked with apostrophes.

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1. Introduction

This thesis shall attempt to determine the relevance of Dutch lexical influence for the usage of contemporary modern Japanese by means of a three-tiered quantitative analysis. It features an introduction where the historical context in which this subject ought to be understood, the nature in which Dutch-Japanese linguistic exchange took place and the several different types of lexical influence that shall be discussed in this thesis are explained. Afterwards the previous studies on this subject are summarised and discussed, before this thesis' research is described. In it, the relevance of Dutch lexical influence is determined by means of a dictionary cross-analysis, a corpus analysis and a questionnaire. Finally, the conclusion reviews the current study's results and the limitations before listing all Dutch lexical influence that this thesis found to be relevant in contemporary modern Japanese.

1.1. Historical Context

Due to the historic nature of this thesis' topic, a general overview of the historical background is essential. At the onset of the 17th Century, Japan came under the Tokugawa Shogunate's military rule. At this time Portuguese, and to a lesser extent Spanish elements, were already well-established in Japan. However, aside from mercantilism, Portuguese missionaries were actively spreading Christianity by persuading both commoners and the elite to convert. In doing so, they often made use of pre-Tokugawa Japan's splintered domestic landscape. However, after the Tokugawa unification, this missionary work soon became too invasive as it prompted general discontent among the populace, putting a strain on domestic political stability. In order to avoid the country spiralling into chaos once more, the Shogun adapted an isolationist policy called *sakoku*, in the 1630s (Vos, 1963), which led to the expulsion of all Portuguese and Spanish from Japan. The new isolationist *sakoku* policy cut off all contact with Western countries, apart from trading relations with the Dutch. However, despite the fact that the Dutch, unlike the Portuguese counterparts, were not interested in spreading any religious dogma, their presence was limited to a small artificial peninsula turned trading station called Dejima.

The newly formed Dutch Republic sought to extend its colonial influence in South- East Asia by forming the privately owned Dutch East India Company (VOC - 'Vereenigde Oostindische Compagnie') and allowing it to monopolise trade in the area. It was through this

entity that Dutch-Japanese contact was established and upheld until its nationalisation in 1800, after which the company's assets were taken over by the Dutch government. It is to be noted that while the VOC was owned by the Dutch Republic, many foreigners enlisted in or worked for it. To ensure that only Dutchmen entered Japan, the Shogun allowed solely Dutch-speaking people to enter the trading station at Dejima. Nevertheless, some of the earliest visits to Japan by non-Dutch nationals were conducted under the pretext that they were Dutch. Notable foreigners who managed to visit Japan under these circumstances were the German physician and botanist Philipp Franz von Siebold as well as the Swedish naturalist Carl Peter Thunberg.

The first contact between the Dutch and the Japanese took place when a Dutch ship called 'De Liefde' shipwrecked off the coast of Kyushu in the year 1600. However, this event did little to establish formal ties between the two nations, and instead can be seen as an isolated event. Official Dutch-Japanese exchange commenced with the opening of the VOC's trading centre at Hirado in 1609. After the expulsion of the Portuguese, in 1641 the VOC's presence was forcibly moved to the artificial island of Dejima, off the coast of Nagasaki, and initially intended for the Portuguese. From then on, the Dutch, through the VOC, were the only Western Europeans to be able to trade and communicate with the Japanese for around 200 years from the 1630s to 1854 (National Diet Library, 2009; Shively & McCullough, 2008).

1.2. Dutch-Japanese Linguistic Exchange

Officially, Dutch-Japanese relations during these 200 years were strictly economic in nature. VOC staff were not allowed to leave the island and were meticulously monitored (Vos, 1963). Nonetheless, non-commercial exchange unavoidably occurred as well. Imported Western scientific literature soon caught the eyes of the Japanese. Initially, Portuguese served as a bridge language, but it soon became clear to the Japanese that in order to be able to study and understand the Dutch-imported scientific literature, Portuguese constituted a communicative obstacle and should be omitted, and they would have to learn Dutch instead. Already in the 1670s, a loosely organised guild of Dutch-Japanese interpreters arose in Nagasaki that with time and in collaboration with Edo scholars, would establish the new academic subject of 'Dutch studies', or *rangaku*, which entailed the study of Western sciences alongside the Dutch language (Joby, 2021).

As *rangaku* formalised, so did the ways of learning the Dutch language. Initially, the study of the language was reserved for the elite of society, with feudal lords or other influential men leading the standardisation of Dutch language acquisition. As Japanese-run educational centres offering classes in Dutch-studies became commonplace, so did Japanese-published learning material and dictionaries. One notable institute, which started out as an institute for Dutch Studies, is Keio University. Students would start by learning the language's script and syllables before moving on to understanding dialogues and eventually compose own writings (Joby, 2021). While the Japanese themselves did the greater part of the learning, the Dutch staff at Dejima would sometimes also actively encourage language acquisition by personally organising and giving classes (Joby, 2021). As a result, student numbers rose as time went on.

After the forceful repeal of the *sakoku*-policy by the United States in 1853, which resulted in the end of Tokugawa rule and Japan opening up to the world, Dutch functioned as a crucial bridge language in Western-Japanese negotiations (Vos, 1963). It initially even saw increased use shortly after the opening of the country because of the large number and haste in which these negotiations were conducted (Joby, 2021). However, interest in Dutch was soon surpassed by the study of other European languages such as English and German. The trading station at Dejima shut down in 1854, marking the end of this unique Dutch-Japanese political and linguistic exchange.

1.3. Different Types of Loanwords

In general linguistics, distinctions are made between different types of loanwords. Important for this particular study are pure loanwords and loan translations, which are also known as calques. In the following, these two types of loanwords shall be discussed.

Pure loanwords are words that were directly transferred from one language to another with limited or no phonemic change (Joby, 2021). In the case of Dutch and Japanese, some phonemic change is inevitable, as both languages differ greatly in this regard. Firstly, because Japanese makes use of a syllabary system, it becomes difficult to replicate a word's pronunciation that comes from a language in which consonant clusters are common. Secondly, there is a noticeable limitation of expressible sounds in Japanese compared with languages such

as Dutch. This becomes especially clear when comparing the number of vowels of modern Japanese and Dutch's vowel charts in the standardised IPA representation of speech sounds:

Dutch: [i, y, e, ø, a, o, u, ɪ, ʏ, ε, α, ɔ, ei, oey, au] (Taalportaal, 2021)

Japanese: [α, i, u, e, o] (Hasegawa, 2015)

It should be mentioned that during the heyday of Dutch-Japanese linguistic exchange, both languages were by no means identical to their modern-day counterparts. A written and standardised Dutch barely existed and notable dialectal differences were present in both languages (Frellesvig, 2010). This is why many dictionaries list both Dutch and Flemish when referring to any Dutch loanword's donor language.

With this in mind, here are some reoccurring phonemic changes typical for Dutch pure loanwords in (Tokugawa-era) Japanese with examples for clarification (Vos, 1963). The reader's attention is drawn to the underlined sequence with which the typical phonemic changes are clarified:

1. Epenthesis in case of consonant clusters: *randoseru* from 'ransel' (knapsack)
2. Alveolar liquids /l/ and /r/ rendered as /r/: *ranpu* from 'lamp' (lamp)
3. Consonant /v/ visualised by /h/, /w/ or /f/: *hetto* from 'vet' (fat)
4. Before /u/, /d/ is rendered as /z/ or /dz/ and /t/ as /tsu/: *zukku* from 'doek' (canvas)
5. Dutch /u/ can be rendered as /o/: *koruku* from 'kurk' (cork)

Many subcategories for pure loanwords that entered the Japanese language through contact with Dutch present themselves. These shall be marked in the final word list of this thesis. The following subcategories exist:

1. Pure Dutch loanwords. These are Dutch words that entered the Japanese language as pure loanwords. They are called pure Dutch loanwords due to the fact that they cannot readily be labelled as loanwords within the Dutch language itself. Example: *zukku* from 'doek', meaning canvas.
2. Dutch loanwords with foreign backgrounds. These are pure loanwords that themselves were loanwords embedded in the Dutch language when they made their way into Japanese. Many dictionaries cite these words as loanwords from their original language,

but this thesis argues that apart from being called loanwords of the initial donor languages, they also ought to be called Dutch lexical influence, due to the fact mentioned above. Example: *arraku* from ‘arak’, meaning arrack, which is a direct loanword in Dutch from Arabic ‘araq’.

3. Dutch loanwords with semantic shift. Upon becoming embedded into the Japanese language, many Dutch loanwords underwent a shift in meaning. These loanwords may include both pure Dutch loanwords as well as Dutch loanwords with foreign influence. Example: *mesu* from ‘mes’, which means ‘knife’ in Dutch, but has come to mean ‘scalpel’ in Japanese.
4. Dutch loanwords used mainly or exclusively dialectally. Research into this subcategory of loanwords is sparse and therefore is it impossible to state whether or not this research included all of them. One example is *dontaku* from ‘zondag’ used in several dialects on Kyushu to describe Sunday or a holiday in general.

Pure loanwords are usually rendered in the Japanese *katakana* script. However, as is the case with pure loanwords from other languages than Dutch, it is possible for a number of Dutch pure loanwords to be rendered in so-called *ateji*. These are kanji characters that are principally used for their phonetical reading with only little emphasis being put on the actual characters’ true meaning. Singular cases of Dutch pure loanwords being rendered in the *hiragana* script also exist. However, there exist select cases where such alternative renderings are preferred over the more established *katakana* renderings. In this thesis’ final word list, these cases are rendered in *ateji* or *hiragana*.

The second category of lexical influence is loan translations. Though often overlooked, the concept behind them is rather straightforward. Dutch abstract terms for concepts and objects for which no word in Japanese exists and that cannot easily be adapted as pure loanwords are translated on a morpheme-by-morpheme basis (Joby, 2021). Sino-Japanese terms are most commonly used in the creation of loan translations. For instance, the Dutch word ‘zwaartekracht’, meaning gravity, could literally be translated as ‘heavy power’ into English. It was adopted into Japanese as the loan translation *jūryoku*, consisting of the Sino-Japanese morphemes *jū* ‘heavy’ and *ryoku* ‘power’.

Finally, hybrid loanwords also exist within the Japanese language. These are words in which one morpheme consists of a Dutch loanword. Since Japanese is an agglutinative language, the quantity of hybrid loanwords is endless, in theory. Therefore, they are omitted in this thesis' final word list, with the exception of Dutch lexical influence that appears exclusively as hybrid loanwords.

2. Previous Research

2.1. Previous Compilations of Word Lists

It is difficult to determine when the study of Dutch lexical influence on the Japanese language began. Although several word lists and Dutch-Japanese dictionaries have been created as auxiliary material during the emergence of Dutch Studies as a standardised academic subject, they often make no attempt to describe the number of words of Dutch origin that appear in Japanese (National Diet Library, 2009). If the contemporary dictionaries and word lists from the Edo Period are not to be seen as compilations of Dutch lexical influence, it is in the 20th century that the first word lists begin to appear for the sole purpose of determining Dutch loanwords in Japanese. Many scholars approached this topic with different research questions in mind, using a wide array of different methods. Many of these do not go into much detail and leave out a large amount of proven Dutch lexical influence, most notably loan translations.

For the sake of clarity, only the works of the three most influential scholars within this field of study are discussed in this chapter. Dutch Japanologist Frits Vos compiled the first comprehensive list of Dutch lexical influence in his ‘Dutch Influences on the Japanese Language’ (Vos, 1963). His approach divides Dutch lexical influence into several subcategories, in which he lists 322 pure loanwords, 20 words of Portuguese and Spanish origin that were reinforced by the Dutch language and 23 dialectal loanwords. Although he touches upon loan translations, he does not go into details and provides an incomplete list, the shortcomings of which he acknowledges himself. Despite the fact that his work is well structured and holds up well to more recent research, it does not include any references, which makes it difficult to retrace his approach and consequently to confirm or reject his findings. However, the fact that this paper was republished in 2014 confirms that his work is still relevant today.

Shortly after the paper of Vos was first published, Shizuka Saitō attempted to compile a full overview of Dutch lexical influence in his 1967 work called ‘*Nihongo ni oyoboshita Orandago no eikyō*’ (‘The influence of Dutch on the Japanese language’). Differently from Vos, he lists 740 cases of Dutch lexical influence, focussing mainly on pure loanwords, but including many loan translations. Additionally, he provides primary sources for each entry into the compilation, giving it considerable value for future studies. The main problem with this work is that many of the words included have been used so rarely that it is hard to determine whether

they were ever truly embedded in the language at all. Furthermore, there are cases of double entries and notable exclusions which somewhat diminishes the value of the work. However, Saitō's list of lexical influence remains highly relevant, particularly because of his reference to primary sources, making it a crucial component for any research into the topic at hand.

The most important previous research for this thesis is Christopher Joby's 'The Dutch Language in Japan (1600–1900)', published in 2021. Although the scope of his research extended far beyond the Dutch lexical influence in Japanese, Joby has compiled the most complete list of Dutch loanwords to date. In it, he includes 488 Dutch loanwords and loan translations, which at one point were embedded into the Japanese language. The words he lists form the basis of the research carried out in this thesis. This is discussed further in section 3.2.

2.2. Shortcomings of the Previous Research

Some shortcomings of the works Saitō and Vos were already discussed in the previous chapter. Joby undoubtedly deserves great credit for his work, as it has become the new point of reference for any further research into the topic of Dutch linguistic influence on Japanese. However, two minor but significant remarks need to be made. Firstly, Joby's research only reviews Dutch influence until 1900. While it is true that after this year the status of the Dutch language in Japan has diminished to only a fraction of what it used to be, later developments are paid scant attention. Secondly, despite the fact that Joby adds an asterisk in front of words allegedly still used in contemporary modern Japanese, quick reviews seem to hint at inaccuracies in his method. One example of this is the Japanese word *giyaman*, which means glassware and derives from the Dutch word 'diamant'. Even though it is not marked by an asterisk, it can be found in the online dictionary Jisho and several physical dictionaries, in which it even is listed as a Dutch loanword (Kabushiki Gaisha Shōgakukan, 2001). These shortcomings in previous research contributed to the motivation of the current study.

3. The Current Study

3.1. Research Question, Hypothesis & Goal of this Research Project

As was described in the previous chapter, research into what words can be considered as Dutch lexical influence is manifold and thorough. Consequently, this thesis does not aim to tackle this specific aspect yet again. Instead it will attempt to find an answer to a less frequently asked question, that, despite having been touched upon in previous research, does not seem to have been solved with any certainty. The question referred to above has become the research question of this thesis and reads as follows:

What Dutch lexical influence remains relevant in contemporary modern Japanese?

It is crucial to define what ‘relevant’ means in this context and for this thesis. For this purpose, a specific definition for relevance of lexical influence was created:

‘If any given (loan)word appears frequently enough in dictionaries and corpora, and/or is recognised by native speakers of the language in question, then the (loan)word is relevant’.

The hypothesis that follows from this definition is:

The frequency of words appearing in dictionaries and corpora is linked with whether or not it is generally recognised by native speakers of the language in question, i.e. if it appears often in said sources, it ought to be recognised by native speakers.

The final aim of this research project is the creation a list of still-relevant Dutch lexical influence in Japanese, which is included as two tables at the end of this thesis.

3.2. Methodology

For the purpose of this thesis, a quantitative approach to the methodology was used by subjecting an initial pool of 500 loanword entries to three analyses.

1. Firstly, six different dictionaries were consulted to establish whether they contained these 500 loanwords. The choice of dictionaries is discussed in the following chapter.
2. Secondly, their appearance in conventional Japanese writing was determined by reviewing the frequency of appearances of each entry in the Balanced Corpus of Contemporary Written Japanese.

3. Based on the results performed in the previous two steps, a list was composed that contains words expected to be recognised and words not expected to be recognised by native Japanese speakers. This list was used for the final step, in which the validity of the hypothesis was tested by distributing a questionnaire with these words to 105 Japanese native speakers, who were asked whether they understood these words.

From the results of this three-tiered analysis, the words included in the final word list were determined.

The starting pool of words consists mainly of Joby's compiled list of Dutch lexical influence (Joby, 2021) with several additions from Vos (1963) and Saitō (1967), as well as individual cases found in the lexicon *Nihon Kokugo Daijiten* (2001). Every word on the list is confirmed as being Dutch in one or more of the above listed references. However, some aspects ought to be noted:

1. Numerous cases of historical Dutch lexical influence exist in which the word in question was adapted into Japanese with slight differences in spelling. Three examples of such cases are the Japanese words that came from Dutch words 'inkt', meaning ink (*inku*, *inki* or *inkito*), 'fuchsia' (*hokushia* or *hokusha*) and 'dronken', meaning drunk (*doronken* or *doronko*). In such cases, the alternate forms of the same word were included into one entry in the base pool of words. However, there exist alternate spellings of the same words that never were definitively embedded into the Japanese language. These are marked by Joby (2021), but omitted in this research.
2. Influence that appears only as a suffix is omitted unless one specific word in which it is used can be classified as a Dutch loanword or loan translation. One example might be the suffix *kei-* which derived from the Dutch word 'kei', which associates any given word with solid materials such as rocks or stones. In this research, the Japanese word *keiso*, meaning silicon, has been included due to the fact that it derived from the Dutch word 'keiaard'. However, other Japanese words using the suffix *kei-* were not added because they were not created from an existing Dutch word. One such word is *keiseki*, meaning silica. This is a Japanese native creation, since no Dutch equivalent from which it could have derived exists.

3. When the only difference between two words that derive from the same Dutch source is whether or not a certain consonant is voiced, both varieties are included in the base pool of words under one entry. Examples for this are the loanwords of Dutch origin for turpentine (*terebin* or *terepin*), amethyst (*ameshisuto* or *amejisuto*) or octant (*okutanto* or *okudanto*).
4. In cases of abbreviations, both the abbreviated and complete form of the loanword in question are added into the base pool of words as a singular entry. Examples for this are the Japanese words of Dutch origin for dollar (*doru* and *doruraru*) and sarsaparilla (*sarusa* and *sarusaparirura*).
5. Only Dutch words that were embedded into the Dutch language at the time and that made their way into Japanese through Dutch-Japanese exchange were included. Therefore, Dutch words that themselves can be seen as lexical influence from other languages also have been included into the base pool of words. Common donor languages for these types of words are Latin, French and Arabic. One example for this is the loanword *arakku*, meaning arrack, which originally comes from the Arabic word for distillate ‘araq’.
6. What Joby (2021) lists as ‘Native Creations’ were not included in the base pool of words, since the aim of this thesis is to determine specifically loanwords as opposed to words independently created by the Japanese. One example for a native creation in this context might be *shinkei*, meaning ‘nerve’. It was created in order to translate the Dutch word for nerve ‘zenuw’, which was a new concept for the Japanese at the time. However, when translated into English on a morpheme-by-morpheme basis, *shinkei* means ‘spiritlink’. Therefore, the word *shinkei* shows no connection to the Dutch language itself and is not considered lexical influence in this thesis. In principle, only words with direct linguistic links to the Dutch language are included in this project.

3.3. Step One: Dictionary Cross-Analysis

The basis for determining whether entries ought to be considered as relevant or not is made up by reviewing each separate word’s appearance in six separate dictionaries. Of these dictionaries, three are online and three are physical. In the following, each dictionary will be briefly presented.

The online dictionaries are based on open source material. Of these, Jisho.org is perhaps most popular as it easily lets its users look up separate words or kanji as well as example sentences, making it ideal for day to day use. The second dictionary is part of an app called Kanji Study, which, apart from providing an equally convenient dictionary as Jisho.org does, also includes other built-in features that allow for adaptable memorisation-based self-study. The final online dictionary is the Japanese open source-based *Honyaku to Jisho (Translation and Dictionary)*, which offers a convenient mini Japanese-English open source dictionary and is directly linked with the Japanese version of Wikipedia, which gives valuable insight into the relevance of any given word.

The physical dictionaries consist of the two most authoritative dictionaries of the Japanese language, the *Nihon Kokugo Daijiten* (Shōgakusan, 2001) and *Kōjien* (Shinmura, 2018) as well as the pocket dictionary Kenkyusha's New Little Japanese-English Dictionary (Murakami, Shimizu, Kojima, 1994). *Nihon Kokugo Daijiten* (lit. The Great Dictionary of the Japanese Language) and *Kōjien* (lit. 'Wide Garden of Words') are the most complete monolingual Japanese dictionaries that exist up to date and therefore offer a valuable insight into the appearance of any Japanese word. In contrast, Kenkyusha's New Little Japanese-English Dictionary is a pocket dictionary and instead aims to provide the most important words only, which adds valuable insight for this research.

The dictionary cross-analysis was carried out in an Excel sheet in which the appearance of each word was marked (Appendix 1). Relevance is divided into three separate preliminary categories based on each word's appearance in said dictionaries.

- | | |
|---------------------------------|--------------|
| 1) Less than two appearances: | Irrelevant |
| 2) Two or three appearances: | Undetermined |
| 3) More than three appearances: | Relevant |

If a word exists in any given dictionary, it is marked with an 'x' for said dictionary. If it does not appear, it is marked with an 'o'. Combinations of these marks also exist. As is noted in section 3.2. under points one, three and four, singular entries were made for cases of slightly differing adaptations of loanwords both with regard to overall spelling and consonant voicing as well as cases of abbreviations that led to two or more similar yet distinct loanwords. Often only one of these alternatives exists in any given dictionary. In such cases, they are marked differently, with 'o/x' or 'x/o' depending on which alternative is listed in said dictionary. If both or neither alternative of such entries exists in any given dictionary, they are marked with a plain 'x' or 'o'. Whenever a word only appears as a compound within a larger word, it is marked with a bracketed 'o', (o).

3.3.1. Dictionary Cross-Analysis Results

To evaluate the initial results, it ought to be noted that entries from the base pool of lexical influence with two similar alternatives of which only one can exist in any given dictionary, i.e. entries marked by 'o/x' or 'x/o', were effectively counted as positive entries. After all, at least one of these alternatives exists and thus can be considered as being relevant according to that dictionary.

Cases where the entry only exists as a compound within a larger word, i.e. when they were marked with '(o)', were effectively counted as negative entries, due to the fact that they do not exist as standalone dictionary entries.

The dictionary cross-analysis showed that of the 500 entries in the base pool of lexical influence, 335 entries are relevant and 131 entries are irrelevant. There are 34 cases, where the entries' relevance remains undetermined (Figure 1). The

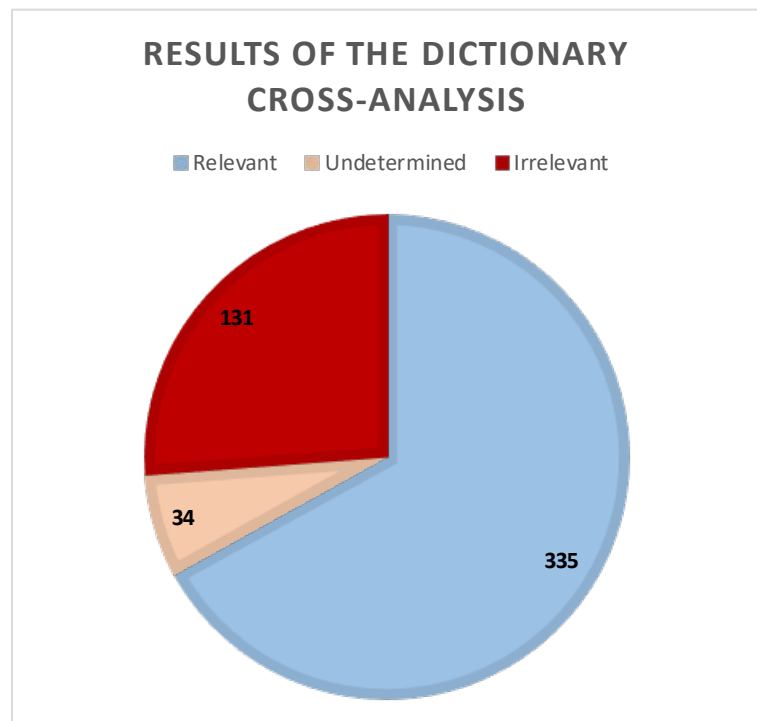


Figure 1 - Assessment of relevance of the dictionary cross-analysis. Numbers represent number of entries. Less than two appearances: Irrelevant; Two or three appearances: Undetermined; More than three appearances: Relevant

appearance of each entry is most easily understood by using the table and bar charts of Figure 2, where the results are presented in more detail.

From the results, the conclusion can be drawn that the number of most dictionaries' positive entries ranges between roughly 318 and 350, with two notable exceptions. *Nihon Kokugo Daijiten* shows a considerably higher number of positive entries and Kenkyusha's New Little Japanese-English Dictionary a significantly lower number (Figure 2). This is by no means surprising since the former is the largest Japanese monolingual dictionary published to date and the latter being a handy pocket dictionary designed to be practical. Thus, it can be considered as an early indicator for the validity of this research project's methodology.

When comparing the different dictionaries' differences and similarities, other observations can be made. The dictionary entries of Jisho.org and Kanji Study are near identical, with an overlap rate of over 90%. The rule is that, if any dictionary entry exists in Jisho.org, it

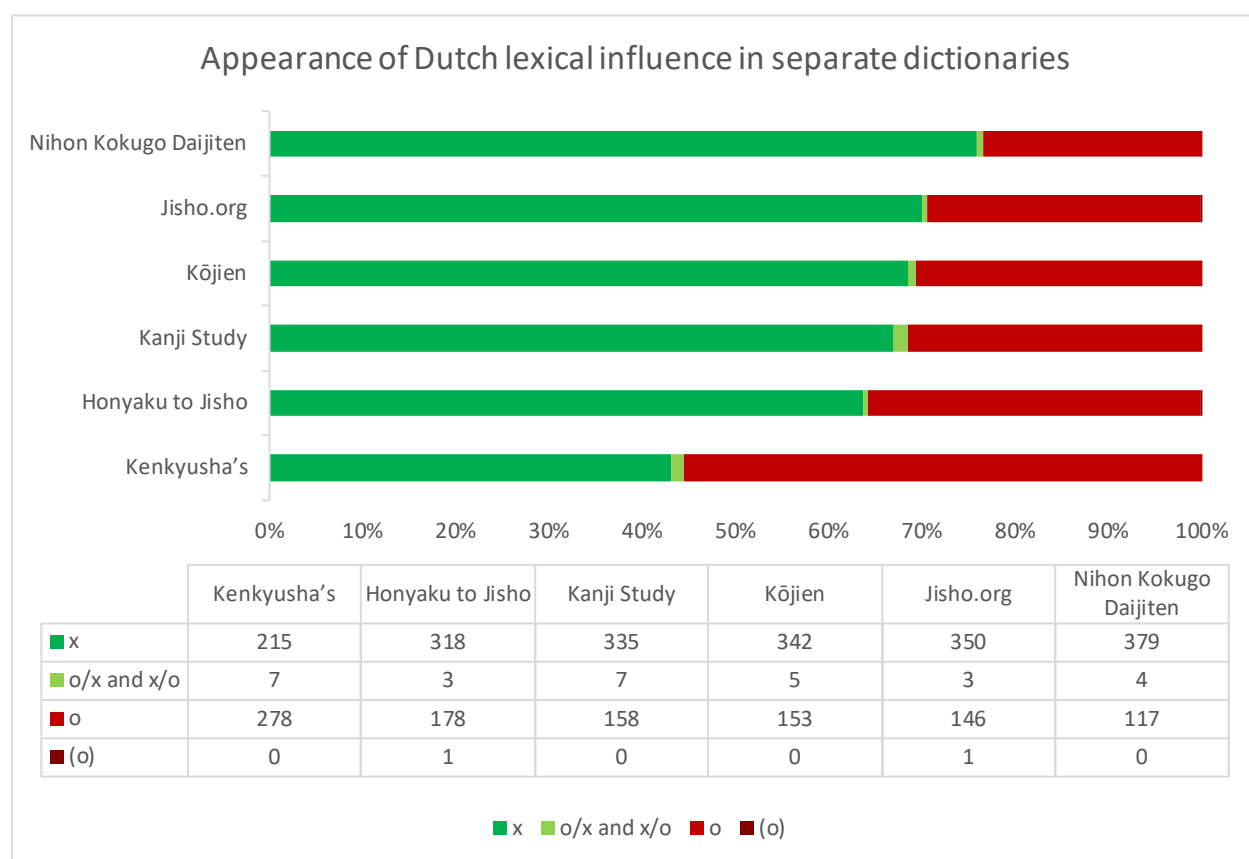


Figure 2 - Detailed overview of the rate of appearance of 500 Dutch loanword entries (x-axis) in the six selected dictionaries (y-axis). Legend: x = positive entry; o = negative entry; o/x and x/o = only singular alternative of entry is positive; (o) = entry exists only as compound.

also can be found in Kanji Study, but not vice versa. Reasons for this may be that they are based on similar open source databases. Nevertheless, they offer a subtle but practical contrast that comes in handy when determining relevance.

Furthermore, every entry marked as positive in Kenkyusha's New Little Japanese-English Dictionary ended up as being relevant. Most words that ended up being relevant also are marked positively in *Nihon Kokugo*

Daijiten. The only exceptions for this rule is *aisurandogoke* ('Icelandic moss'), which exists in four other dictionaries.

In addition, the result of dictionary cross-analysis reveals another tendency. Relevance retention amongst loan translations is considerably higher compared to pure loanwords. The initial results show, that out of the 143 entries of loan translations, twelve are irrelevant and the relevance of four is undetermined as of yet. In contrast, out of the 357 entries of pure loanwords, 119 were counted as irrelevant and the status of 30 is undetermined. This means that 89% of loan translations remain relevant as opposed to 58% of the pure loanwords (Figure 3). Note that this is a preliminary observation, upon which the following two steps build. Therefore, it is not representative of this thesis' conclusion.

To conclude, the dictionary cross-analysis has set a criterion to determine the relevance of the Dutch lexical influence. Hitherto, the results show that 335 entries of the base pool of lexical influence seem relevant, 131 irrelevant, whereas 34 cases remain inconclusive and should be investigated further in the next step of the analysis.

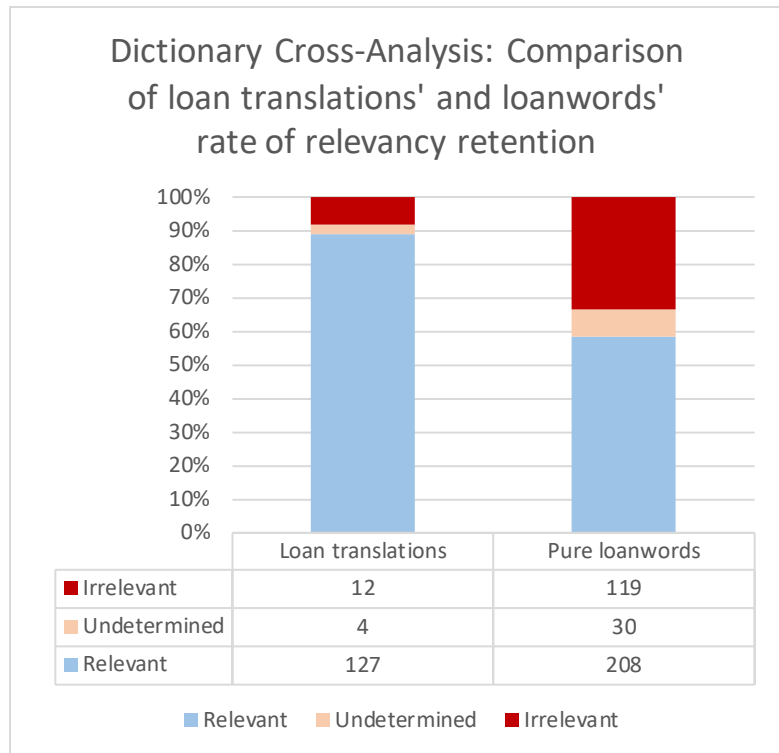


Figure 3 - Dictionary Cross-Analysis: Comparison of loan translations and loanwords' rate of relevancy retention

3.4. Step Two: Corpus Analysis

After the dictionary cross-analysis, several unresolved issues required further analysis, for which a corpus-based analysis presented itself as most viable. For this purpose, each entry's number of appearances in the Balanced Corpus of Contemporary Written Japanese was determined.

The Balanced Corpus of Contemporary Written Japanese encompasses a large array of different text registers covering more than one hundred million words that can be accessed through the web-based interface called *Chunagon*. The main reason why the Balanced Corpus of Contemporary Written Japanese was chosen for this research, is the corpus' uniqueness in that it covers not only many words, but also the broadest number of topics and text registers of all available corpora concerning contemporary modern Japanese. It covers mainly books, magazines, newspapers and newsletters, governmental texts, an internet bulletin board, a blog, school textbooks, law texts, and poetry verses (Maekawa et al., 2013).

The process of this particular research step is straightforward. After entering each separate entry of the base pool of 500 words as keywords and utilising the search function of the Balanced Corpus of Contemporary Written Japanese without changing any of the default settings, the application displays each separate search result alongside the number of items it found in its database. It is this number of search results that provides the extra dimension of information for this research.

Before showing the results of the Corpus analysis, two complications need to be addressed. Firstly, many cases exist in which the Dutch loanword in question shares identical spelling with different words, especially English loanwords that also have become embedded into the Japanese language. A more detailed review of the search results is usually required to determine the exact number of items found for these specific cases. This phenomenon is usually restricted to Dutch words that already have fallen out of use. Examples for this are the no longer relevant Dutch loanwords *doroppu* and *bakku*, which mean 'liquorice' and 'cistern' respectively, but share their spelling with the still-used English loanwords for 'drop' and 'back' of which the meanings clearly deviate from the Dutch loanwords. Thus, despite the fact that the Balanced Corpus of Contemporary Written Japanese displays 512 and 3546 search results for each respective loanword, none of these results contains the Dutch loanword and therefore, the correct number of search results for this research is zero. A less straightforward example would be the

Dutch loanword *kīru*, meaning ‘keel’. It shares its spelling with the Japanese name of the German city Kiel. While the Balanced Corpus of Contemporary Written Japanese displays 96 search results, only 45 of these refer to the Dutch loanword.

The other complication occurs with entries in the base pool of words in which more than one alternative is included. In these cases, the number of search results for each separate alternative of the entry are both included in an Excel function in which they are added up, meaning that only one number is displayed in the final worksheet. For instance, the Japanese word for ‘dollar’ is usually written in the abbreviated form *doru* and occurs 9260 times in the Balanced Corpus of Contemporary Written Japanese. The unabbreviated *doruraru* is much less common and therefore occurs only twice in the corpus. Thus, the number of search results in the corpus of the entry for *doru(raru)* is the Excel function ‘=9260+2’ which is displayed as 9262.

3.4.1. Corpus Analysis Results

The results of the corpus analysis were divided in six different frequency categories (Figure 4). These categories not only confirm observations made during the dictionary cross-analysis, but also provide additional information on top of it. Overall, 220 (44%) of all the entries of the base

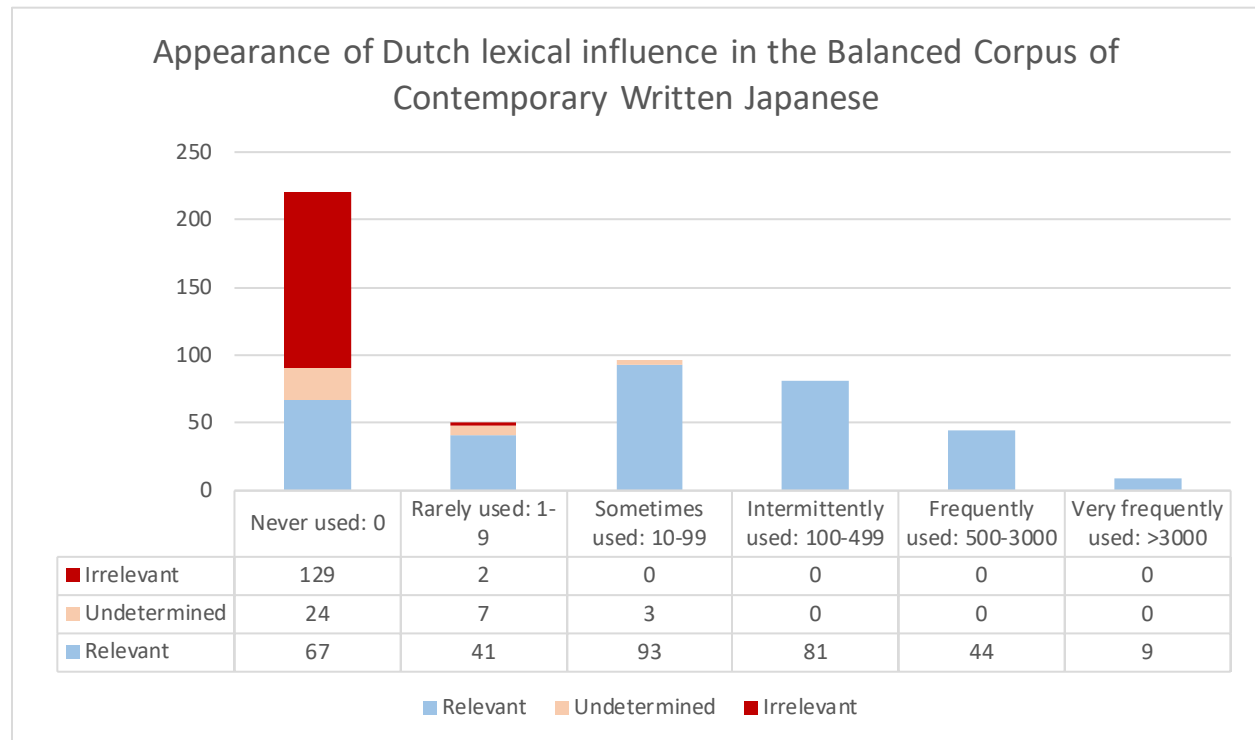


Figure 4 - Chart showing the results of the corpus analysis. The x-axis reflects the number of search results for each entry. Categories on y-axis reflect the preliminary results from and classifications made during the dictionary cross-analysis

pool of 500 entries do not appear in the corpus. Almost 60% of these words were defined as irrelevant. Even more striking is the fact that of the 131 words defined as irrelevant during the dictionary cross-analysis step, 129 do not appear in the Balanced Corpus of Contemporary Written Japanese at all, whereas two show just a single search result each. While the overwhelming majority of words appearing more than ten times in the Balanced Corpus of Contemporary Written Japanese were considered relevant during the dictionary cross-analysis, 67 do not appear even once and 41 only up to nine times. The corpus analysis also sheds light on the 34 entries whose relevance remained undetermined after the dictionary cross-analysis.

Despite the fact that the results from the corpus analysis correspond remarkably well with the findings made during the dictionary-cross analysis, some additional observations should be made and subsequent conclusions drawn.

Firstly, many words that are relevant according to the dictionary cross-analysis appear rarely if at all in the Balanced Corpus of Contemporary Written Japanese. Of these, 67 never appear and 41 only between one and nine times. Even though one might be inclined to disregard these words as irrelevant, several factors need to be taken into consideration before drawing such a conclusion. Of the 108 entries that were marked as relevant during the dictionary cross-analysis but do not appear at all or only rarely in the corpus, 83 can be considered as being specialised terminology within the fields of medicine, chemistry, physics, botany and grammar. Unsurprisingly, such erudite terms do not appear frequently in the previously listed types of text registers offered by the Balanced Corpus of Contemporary Written Japanese. Therefore, the fact that these terms do not appear in the corpus cannot be considered to prove their irrelevance, but should rather be seen as an indication of their very limited conventional use. Furthermore, many of the remaining 25 entries within this grouping are made up of historical, archaic, obscure or dialectal terms or names that remain relevant but largely out of use in conventional writing. A good example for a still-relevant historic term is the word *erekiteru* that derives from an abbreviation of the Dutch word for electricity. It became the name of an 18th century electrical generator that usually is given as ‘elekiter’ in English. Furthermore, despite the fact that *kagaku* is the standard term for chemistry in contemporary modern Japanese, the archaic form *seimi*, deriving from the Dutch word ‘chemie’, still appears in many dictionaries and is considered an important term for Japanese students of history. Therefore, although the word is archaic, it

should not be considered irrelevant. The archaic term for Japan, *yāpan*, falls under the same category.

Secondly, the terms whose relevance remained undetermined after the dictionary cross-analysis should be remarked upon. Eleven of these appear rarely and only occasionally in the Balanced Corpus of Contemporary Written Japanese. These entries are *arakku* ('arrack'), *erikishiru* ('elixir'), *pūdo* ('pud'), *okutanto/okudanto* (octant), *moyorana* ('marjoram'), *karushūmu* ('calcium'), *mīakyatto* ('meerkat'), *arukemī* ('alchemy'), *eageresu* (archaic term for 'England'), *kino* (kino gum) and *yaesu* ('Yaesu', place name in Tokyo). Since they appear in the corpus, they are henceforth to be considered relevant.

Finally, as mentioned above, two entries which during the dictionary cross-analysis were declared irrelevant did indeed appear once each in the Balanced Corpus of Contemporary Written Japanese. These entries were *rimonāde* ('lemonade') and *masuchikku* (mastic gum). The combined reasoning that they both appear in one dictionary and in the corpus, warrants reconsideration in regards to their relevance. Therefore, while they may only appear rarely, they are now considered as relevant. This means that overall, 348 entries have been declared as relevant up until this point.

Taking these new findings into account, a more detailed tendency can be observed (Figure 5). Out of the 348 entries that have been declared relevant, 221 are pure loanwords and 127 are loan translations. Interestingly, out of those 221 pure loanwords just 25 do not appear in the corpus at all. However, from the 127 loan

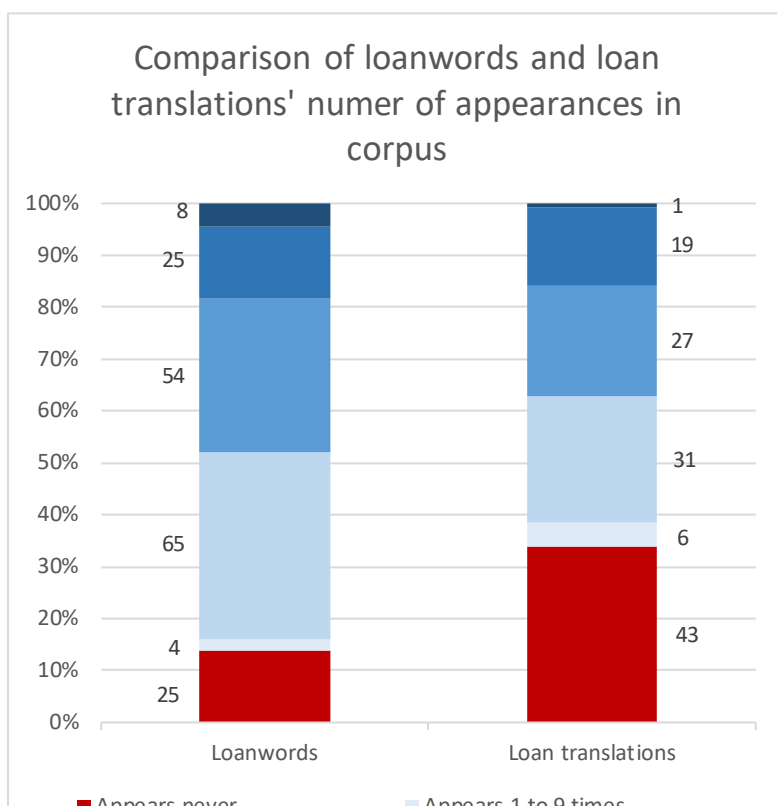


Figure 5 - Comparison of the appearances in Balanced Corpus of Contemporary Written Japanese of loanwords and loan translations that were declared relevant in corpus analysis. Rate of appearance expressed in percentages. In total, there are 221 pure loanwords and 127 loan translations.

translations, just 84 appear in the corpus (Figure 5). This means that 43, roughly one third, of all loan translations appear never or almost never in conventional Japanese writing, which implies that they are predominantly specialised terms used in specific fields of expertise.

After concluding the corpus analysis, 348 relevant and 129 irrelevant entries remain. A further 23 are left undetermined. In the following step, these results will be further analysed and verified.

3.5. Step Three: Questionnaire

Concluding the current study's research is a questionnaire created using Google Forms that inquires about whether or not Japanese native speakers understand a selection of 15 pure Dutch loanwords, the selection of which is described below. In the following, the structure of the questionnaire and the reasoning behind it are discussed. Please view Appendix 2 for the original document.

In the first part, participants were asked to voluntarily give some general information about themselves, including their occupation, gender, age, place of origin and whether or not they know Dutch. Although the questionnaire's focus lies on the general understanding of Dutch loanwords by Japanese native speakers, general information about the participants allows not only the determination of whether or not the questionnaire is completed by a sufficiently diverse group of people, but also allows further analyses of correlations between specific categories of people and their understanding of Dutch loanwords.

In the second part, 15 Dutch pure loanwords are marked within example sentences and the participants are asked to say whether they understand it or if they are unsure about the particular word's meaning. Note that no loan translations were added. The words included in the questionnaire can be divided into three main categories:

1. Words that are expected to be recognised. This group makes out the greater part of words the questionnaire inquires about. It consist of the terms *orugōru* ('music box'), *arukemī* ('alchemy'), *egeresu* ('England' or 'English'), *karan* ('faucet'), *hetto* ('beef tallow'), *mesu* ('scalpel'), *sēpu* ('soap') and *koppu* ('cup'). Of these, *orugōru*, *karan*, *mesu* and *koppu* appear in all dictionaries as well as in the corpus and are thus expected to be

widely understood. *Hetto* appears in only five dictionaries and rarely in the corpus, which is why it may be that it is recognised by fewer people than the others. *Arukemī* and *egeresu* are the two entries that were declared relevant only after the corpus analysis. Finally, *sēpu* appears in only four dictionaries, all of which consider it to be archaic, meaning that it may be less frequently recognised than the other words of this group.

2. Words that are expected not to be recognised. These include *keitoru* ('boiler'), *pottorōdo* ('pencil') and *gorōto* ('large'). Only *pottorōdo* and *gorōto* appear in the *Nihon Kokugo Daijiten*. None of them appear in the corpus.
3. Words whose relevance remains undetermined. These are *orēfu* ('olive'), *sutorōpuwaffuru* ('syrup waffle'), *furafu* ('flag') and *bōtoru* ('butter'). The entries for these words show unclear results in the dictionary cross-analysis and therefore this questionnaire will attempt to draw conclusions for the results it gets regarding the rate of recognition for these selected words. According to Vos (1963), the word *furafu* remains in use dialectically.

In the last part of the questionnaire, the participants are shown the correct meanings of the words they were asked about. In recognition of the fact that participants may have misjudged their understanding of any given word, they had the option (in the form of an extended response text) to amend any answer they gave in the previous part or the possibility to state that they recognised any word's meaning after having seen the answers.

Before moving on to the results of the questionnaire, some things ought to be taken into account. The reason why no loan translations were added to the questionnaire, is because the data regarding their relevance collected during the past two analyses was sufficiently clear, making further research on them unnecessary. Considering the already limited space of the questionnaire, the choice was made to keep it short and concise, focussing on a single theme, namely pure loanwords. Furthermore, after the test run with the first five participants, it was realised that the questions on *sēpu* and *koppu* were unintentionally left out. Therefore, five fewer answers are collected on these two entries.

3.5.1. Questionnaire Results

Altogether, 105 Japanese native speakers participated in the questionnaire. The demographics of the participants is well balanced and should provide reliable answers reflective of the overall status of contemporary modern Japanese (Figure 6). However, four observations about the participants' demographics should be noted. Firstly, the majority of the participants are female. Because the rate of recognition is the same for both genders, this does not further affect the quality of the research. Secondly, the greater part of the participants is from the Kantō region, meaning that the possibility of detecting dialect variation is limited. Thirdly, not a single blue-collar worker participated in the survey. In fact, the vast majority of the participants have an academic background, including the 25 participants listed under 'Not working', who are predominantly retirees. Finally, six participants have knowledge of the Dutch language, which

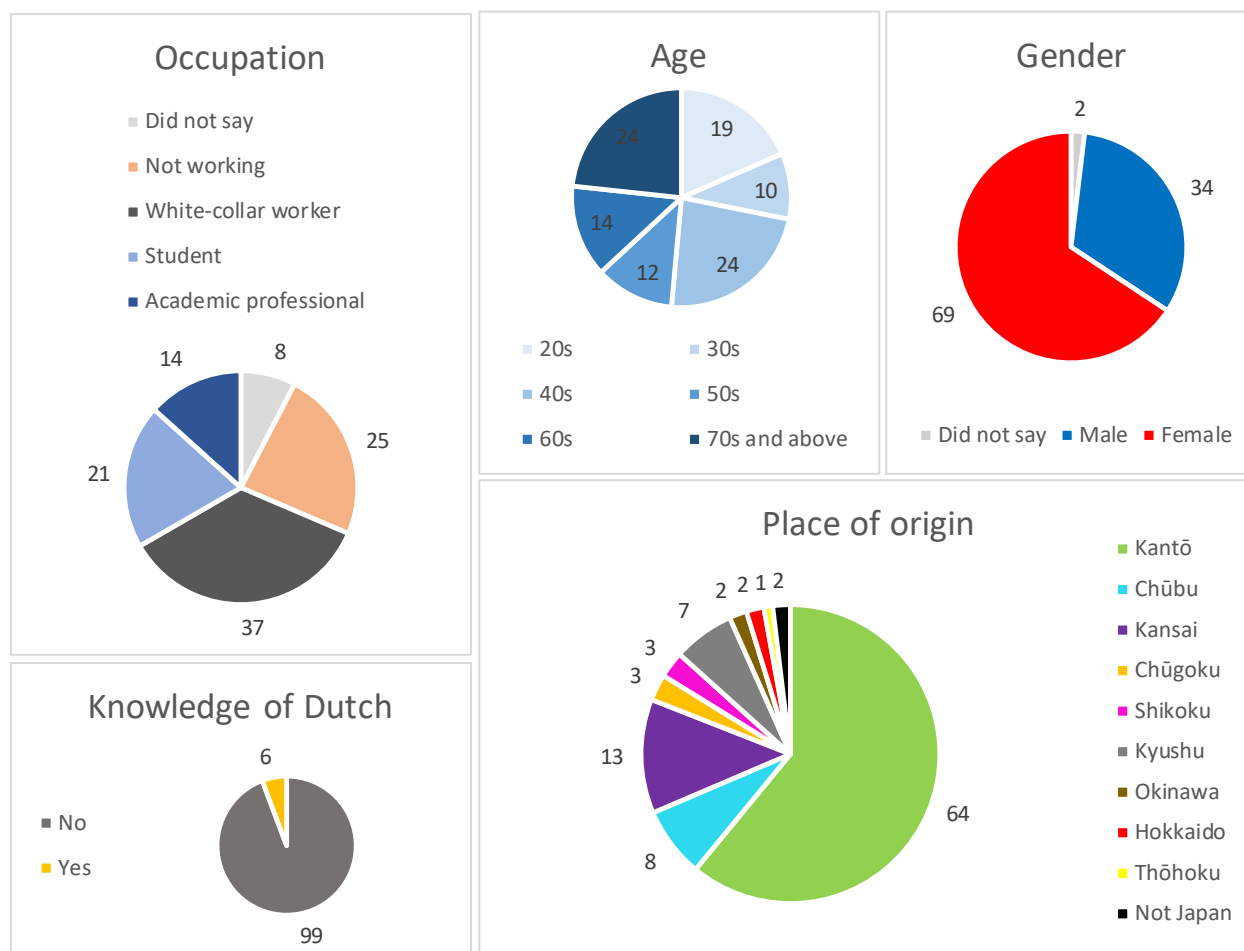


Figure 6 - General information about the questionnaire's 105 participants

may influence the results of the questionnaire. Therefore, special attention was paid to the answers of these participants with regard to whether they differ from the rest or not.

With these considerations in mind, it is possible to analyse the results that the questionnaire yielded. First, the separate results for each entry included in the questionnaire were viewed in accordance with the previously determined three categories: expected to be recognised, expected not to be recognized and undetermined. Next, correlations between the demographics and the results were looked for. Finally, the conclusion of the questionnaire results will be made with regard to the relevance of both the included entries as well as the remaining undetermined ones in the base pool of words.

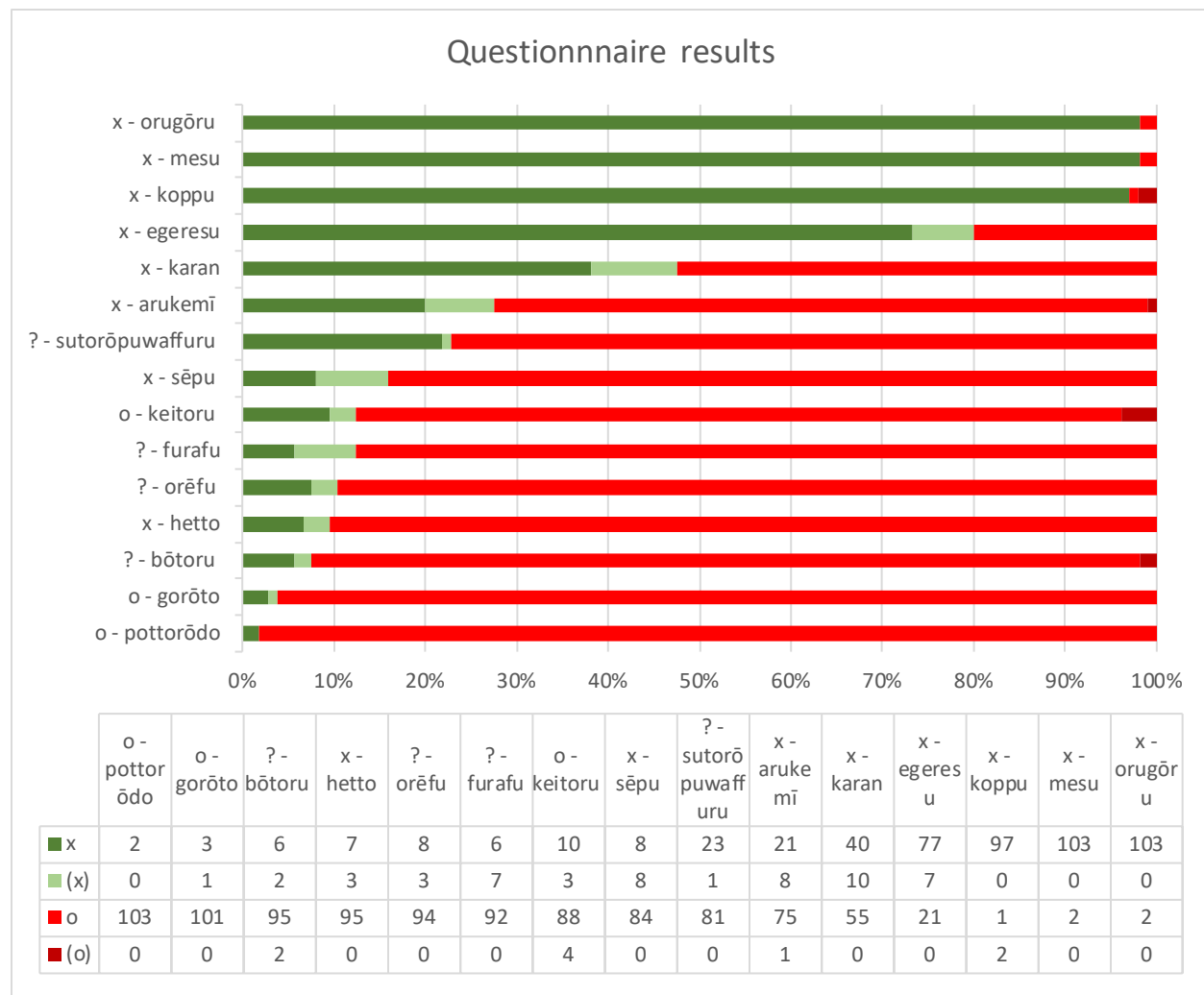


Figure 7 - Recognition of the 15 loanwords by 105 Japanese native speakers. Y-axis: Entries the questionnaire inquired about. The following words categories were included: x - Expected to be recognised; o - Expected not to be recognised; ? - Unsure whether this word would be recognised. X-axis: Rate of recognition. x = Understood, (x) = Understood upon seeing the answer, o = Undetermined, (o) = Realised the word was understood incorrectly upon seeing the answer.

Overall, the entries previously considered as relevant and irrelevant were recognised accordingly. The median number of recognised entries for all 15 words is 5.4, with *orugōru*, *mesu*, *koppu*, *egeresu*, *karan* and *arukemī* being the six words recognised most. The largest drop occurs between *egeresu* and *karan*, where the rate of recognition falls from 80% to just short of 50%. The first six entries were words that were expected to be well understood. In this category there are two exceptions. These are *sēpu* and *hetto*. Some entries are understood more often than others after the meanings of the separate words were revealed. These include *egeresu*, *karan*, *arukemī*, *sēpu* and *furafu*. Of the last two, the former was understood equally as often and the latter more often after the words' meanings were revealed. The three least understood words were *bōtoru*, *gorōto*, and *pottorōdo*, two of which were expected not to be recognised. There is one exception in this group as well, with *keitoru* being recognised 13 times. Of the entries whose relevance remained undetermined, *sutorōpuwaffuru* was most frequently understood. This amounted to a rate of recognition of roughly 23%. The rate of recognition for the rest of the entries within this category fluctuates around 10%.

When comparing the questionnaire's results with the participants' demographics, few overlying tendencies can be conserved. No meaningful correlation exists between the median number of recognised entries and the participants' gender or occupation. These two factors were therefore disregarded. No dialectical

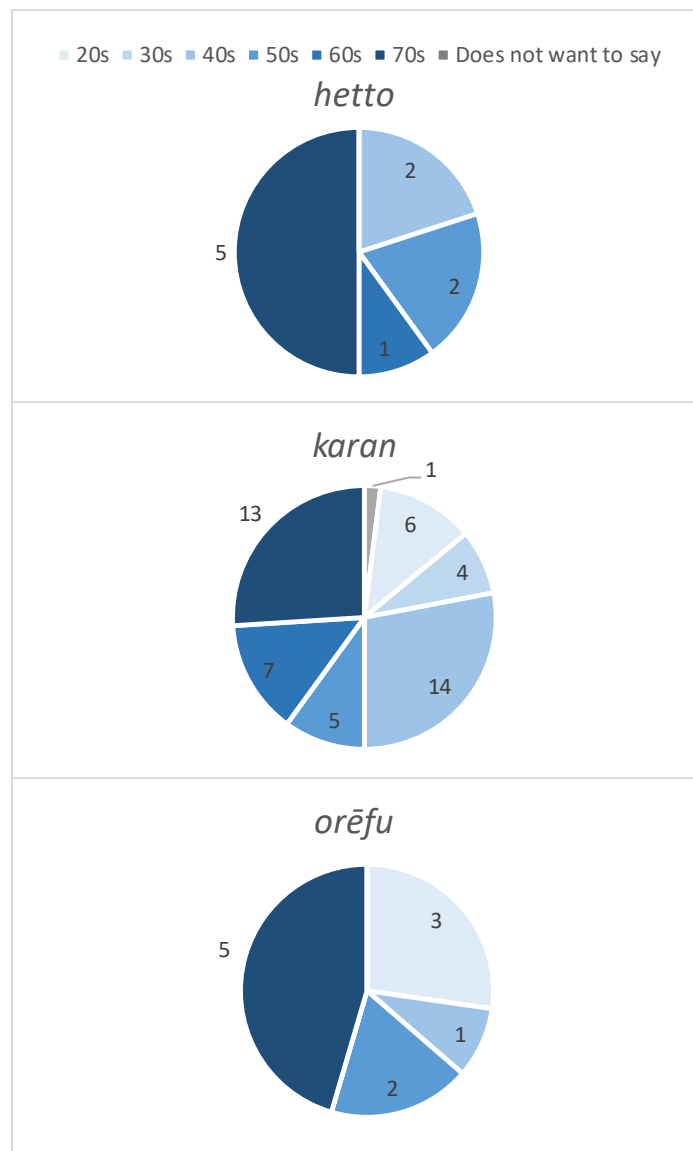


Figure 8 - Rate of recognition for the selected words *hetto*, *karan* and *orēfu*. The numbers represent the number of times the entry was understood by the specific age group.

tendencies revealed themselves. The largest distinction exists between the Japanese native speakers that do and the ones that do not have knowledge of Dutch. The median number of recognised entries for native Japanese speakers with Dutch knowledge is 8.33, whereas the median of recognised entries for speakers without such knowledge lies at only 5.22. In fact, Japanese speakers of Dutch are the only ones to understand *pottorōdo* and *gorōto*.

One interesting theory that the results of this questionnaire seem to hint at is that the rate of recognition of Dutch loanwords is steadily falling in contemporary modern Japanese, because older people averagely understand more words than younger ones. When disregarding the Japanese speakers of Dutch, the median number of recognised entries for people above the age of 70 is 5.65, as opposed to the same number for people in their twenties, which is 5.00. Whether this phenomenon is significantly different can be analysed further case-specifically. In the case of the less-often understood entries *hetto*, *karan* and *orēfu*, for instance, it should be noted that the majority of the people understanding these select words belong to the age groups 50 and above. If the Japanese speakers of Dutch were to be disregarded, this majority would increase even further, which seems to support the hypothesis that selected Dutch loanwords may slowly be losing relevance in contemporary Japanese. However, further research is needed to definitively prove this.

The data provided by the questionnaire allow of several conclusions to be drawn concerning each of the previously established categories of relevance. The entries that were supposed to be relevant are confirmed as such in the results of the questionnaire. As expected, the two entries supposedly relevant after the corpus analysis are recognised less often than the others in this category. Nonetheless, it is not unreasonable to conclude that their rate of recognition is sufficiently high to prove their relevance. If anything, the relatively high number of people that understood these two entries after their meaning was revealed seems to indicate that they are part of the more ambiguous passive vocabulary and that existing synonyms are more readily used. The same is true for the entry *karan*. One outlier is the word *hetto*, with an unparalleled low rate of recognition. Reasons for this may be that it is in fact a specialised term or that it is slowly dying out (Figure 8). Another less-recognised word is the archaic *sēpu*, but unlike *hetto*, it seems to be more readily present in peoples' passive vocabulary. The possibility that it was recognised by so many after its meaning was revealed because of the word's

resemblance to its synonym *sōpu* cannot be neglected. Nevertheless, despite the existence of an outlier in this group, the overall tendency confirms previous observations and thus all words within this category shall remain to be categorised as relevant.

As for the entries previously classified as irrelevant, both *pottorōdo* and *gorōto* were recognised so infrequently that their irrelevance was confirmed. Furthermore, in the two cases that they were indeed recognised, it was by Japanese native speakers with knowledge of Dutch. As for *keitoru*, it was recognised 13 times, which is surprisingly high considering that it appears neither in any dictionaries nor in the corpus. It seems however, that it very much resembles the Japanese word for kettle spelled either *ketoru* or *kettoru*, suggesting that there may have been some misinterpretation. While a comparatively high number of people, four, took back their answer and shared their surprise in the optional response text at the end of the questionnaire, it may be the case that others did not do so. Therefore, this outlier should be considered irrelevant. Altogether, this questionnaire proves the previous observations about relevance relatively well.

The most important part of the conclusion concerns the entries whose relevance remains undetermined. Here, every single entry included in the questionnaire is discussed separately. Firstly, *bōtoru* was recognised too rarely to comfortably be called relevant. This is also the case for *orēfu* and *furafu*. Their higher rate of recognition may be explained by their similarity to the still-relevant English loanword counterparts of *orību* and *furaggu*. These three loanwords only appear in the *Nihon Kokugo Daijiten* and *Kōjien*. Therefore, a general rule could be created that says that whenever any as of yet undetermined entry only appears in these two dictionaries, it is irrelevant. Finally, *sutorōpuwaffuru* is recognised often enough to declare it relevant. It appears in all three online dictionaries. Therefore, another rule could be created that dictates that every as of yet undetermined entry that appears in every online dictionary should be considered as relevant. If another look is taken at the case of *sēpu*, which appears in both Jisho.org and Kanji Study, as well as *Nihon Kokugo Daijiten* and *Kōjien*, the following rule for the remaining undetermined entries can be created: If any as of yet undetermined entry appears in any online dictionary as well as in either *Nihon Kokugo Daijiten* or *Kōjien*, it ought to be considered as relevant. Despite the fact that these rules were created on the fly, they hold up well when comparing to the results of the corpus analysis. There, the undetermined entries considered relevant *arakku*, *erikishiru* and *mīak yatto* appear in all three online dictionaries and the entries

arukemī and *mayorana* appear in one of the online dictionaries and either *Nihon Kokugo Daijiten* or *Kōjien*.

If these newly created rules are applied, the following entries whose relevance remains undetermined will be considered as relevant: *kagyūkaku* (‘cochlea’), *erasuchikku* (‘elastic’), *hokushiya/hokusha* (‘fuchsia’), *raigin* (‘fulminating silver’), *hissopu* (‘hyssop’), *marusu* (‘Mars’), *nen’ekishu* (‘myxoma’), *nafuta* (‘naphtha’), *berensu* (‘Prussian blue’), *sutorōpuwaffuru* (‘syrup waffle’). The remainder of the undetermined entries shall henceforth be discarded.

3.6. Analyses’ Result

Based on this three-tiered analysis, the final goal of this thesis, i.e. the compilation of a list of still-relevant Dutch lexical influence in Japanese, was reached and visualised in Table 1 and Table 2. In order to avoid disrupting the text, these two tables in which all 358 words are included were added in section 4.4.

4. Conclusion

4.1. The Current Study's Results

The completion of the analysis of the questionnaire's results concludes the current research. With 21 of the 34 entries whose relevance remained undetermined having been established as relevant, the results can be presented. Of the 500 entries in the base pool of words, 358 words ought to be considered as relevant (Table 1, Table 2) and the remaining 142 entries as irrelevant, as substantiated in this thesis. This answers the research question. Since there is no standardised form of relevance on which to base this conclusion, the accuracy of the answer remains uncertain. However, it is possible to discuss in greater detail whether the hypothesis stated in this thesis is correct. The frequency of words appearing in dictionaries and corpora correlates with but is not strictly linked to the fact whether or not native speakers of the language in question are able to recognise them. This was observed in the case of the entry *hetto*, which despite appearing in all online dictionaries, *Nihon Kokugo Daijiten*, *Kōjien* and the Balanced Corpus of Contemporary Written Japanese, is recognised by less than 10% of the questionnaire's 105 participants of Japanese native speakers of all walks of life. Therefore, strictly speaking the hypothesis is false.

With only very few exceptions, the bulk of Dutch lexical influence occurred during Japan's era of isolation from the 1630s to 1854. In conclusion, it can be said that a majority of about 72% of the Dutch lexicon that at some point became embedded in the Japanese language remained relevant from its adoption more than 164 years after the main influx of Dutch loanwords.

4.2. Limitations

The results of this study were clear and satisfactory. Nevertheless, some limitations need to be kept in mind when reviewing the outcome. Due to the fact that it was conducted by one person with limited time and resources, the scope of the three steps carried out in this research paper may have been more small-scale than the topic at hand calls for. This is purely a question of quantity. More dictionaries, corpora and questionnaire participants would result in more data to work with and potentially avoid a high number of undetermined entries. To address the issue of undetermined entries, this thesis opted to draw conclusions from the data received from the

questionnaire. Furthermore, all the research of this thesis was conducted manually, and this implies that there might be human error in the data. Having said this, the results were reviewed multiple times and no errors were found. On a final note, a significant number of loanwords appeared exclusively in *Nihon Kokugo Daijiten*, where they were listed as Dutch loanwords. Many of these did not turn out to be considered as relevant according to the definitions formulated in this thesis. However, the fact that these words only appeared in the *Nihon Kokugo Daijiten* and did not appear in any of the other secondary sources, may cast some doubt on their completeness. Due to time limitations, a comprehensive extraction of loanwords uniquely included in the *Nihon Kokugo Daijiten* was not feasible. It is unknown to what extent the results may have differed if it would have been carried out.

4.3. Ideas for future research

As mentioned in the previous chapter, this thesis acknowledges its limitations. Future research on the quantity of Dutch lexical influence may address these shortcomings by taking on the same topic on a larger scale. It might, for instance, incorporate a more varied and larger number of Japanese dictionaries and corpora as well as include a questionnaire including more words with more participants from all across Japan. Furthermore, a thorough re-examination of the primary sources might also lead to the discovery of other ways in which Dutch exerted lexical influence on the Japanese language. For reasons mentioned in the beginning chapters of this paper, this thesis opted for working with exclusively secondary sources, making it dependent on other researchers' findings.

Aside from this, other overlooked facets of this topic also presented themselves during the writing of the thesis. Little study has been done on dialectal Dutch loanwords in Japanese and while some were added to the final word list of this thesis, there is a high probability that there are many more. This thesis also chose to disregard hybrid loanwords entirely due to the fact that their study did not coincide with the research questions posed. However, a quantitative study of the number of regularly used hybrid loanwords that include components of Dutch lexical influence may yield interesting results and show that relevant Dutch lexical influence on Japanese is much more considerable. Another area largely absent of previous research is the influence of the Dutch language on Japanese after the ending of the Dutch trading monopoly in

the year 1854. Finally, this style of research can also be applied for loanwords in Japanese from other languages than Dutch, such as German, Portuguese, Spanish, Russian or French.

4.4. List of Relevant Words of Dutch Origin in Contemporary Modern Japanese

The list is divided in two tables: Pure loanwords (Table 1) and loan translations (Table 2). The loanwords are ordered in accordance with the *Gojūon* kana-ordering system. The Dutch originals with standardised spelling of contemporary modern Dutch as well as the English translations are also included. The loanword subgroups with notes and the relevance of each word are listed in the fourth and fifth column, respectively. The Dutch origin of each of loanword has been confirmed in one of more of the following works: Joby (2021), Saitō (1968), Vos (1963) or *Nihon Kokugo Daijiten* (Shōgakukan, 2001).

The different loanword subgroups are abbreviated as follows:

PDL = Pure Dutch loanword

LFB = Dutch loanword with foreign background (i.e. pure loanwords of a different language in Dutch)

SS = Semantic shift

DL = Dialectal loanword

HL = Hybrid loanword

The relevance of the words is based on the research conducted in the thesis. The following five categories exist:

■□□□ = No appearance in corpus, but in more than four dictionaries
OR Limited appearance in corpus (less than 10 times) and dictionaries (less than two times)

■ ■ □ □ = Appearance in corpus (less than 500 times), but in only two to three dictionaries
OR Limited appearance in corpus (less than 100 times) and in more than four dictionaries

■ ■ ■ □ = Appearance in corpus (100 to 500 times) and in more than four dictionaries

■ ■ ■ ■ □ = Frequent appearance in corpus (500 to 2000 times) and in more than four dictionaries

■ ■ ■ ■ ■ = Very frequent appearance in corpus (more than 2000 times) and in more than four dictionaries

Table 1: Pure Loanwords

Japanese	Dutch	English	Subgroups and notes	Relevance
アカシア <i>akashia</i>	Acacia	Acacia	LFB (Latin <i>acacia</i>)	■■■■
アキレス 腱 <i>akiresuken</i>	Achillespees	Achilles' tendon	HL	■■■■
アスベスト <i>asubesuto</i>	Asbest	Asbestos	PDL	■■■■
アナナス <i>ananasu</i>	Ananas	Pineapple	LFB (Tupi <i>ananas</i>)	■■■■
アニス <i>anisu</i>	Anijs	Anise	PDL	■■■■
アパルトヘイト <i>aparutoheito</i>	Apartheid	Apartheid	Dutch/Afrikaans	■■■■
アフリカーンス 語 <i>afurikānsugo</i>	Afrikaans	Afrikaans	Dutch/Afrikaans	■■■■
アメジスト or アメシスト <i>amejisuto/ameshisuto</i>	Amethyst	Amethyst	PDL	■■■■
アラック <i>arakku</i>	Arak	Arrack	LFB (Arabic <i>araq</i>)	■■■■
アラビアゴム <i>arabiagomu</i>	Arabisch gom	Gum Arabic	PDL	■■■■
アルカリ <i>arukari</i>	Alkali	Alkali	LFB (Arabic <i>al qalīy</i>)	■■■■
アルケミー <i>arukemī</i>	Alchemie	Alchemy	LFB (Arabic <i>al-kīmiyā</i>)	■■■■
アルコール <i>arukōru</i>	Alcohol	Alcohol	LFB (Arabic <i>al-kuhl</i>)	■■■■
アルにか <i>arunika</i>	Arnica	Arnica	LFB (Latin <i>arnica</i>)	■■■■
アロエ <i>aroe</i>	Aloë	Aloe	LFB (Latin <i>aloe</i>)	■■■■
アンジャベル <i>anjaberu</i>	Anjelier	Carnation	PDL	■■■■
アンチモニー <i>anchimonī</i>	Antimonie	Antimony	PDL	■■■■
アンモニア <i>anmonia</i>	Ammonia	Ammonia	PDL	■■■■

イットリウム <i>ittoriumu</i>	Yttrium	Yttrium	PDL	■□□□
インク or インキ (ト) <i>inku/inki(to)</i>	Inkt	Ink	PDL	■■■■□
エーテル <i>ēteru</i>	Ether	Aether	PDL	■■■□□
エクス (トラクト) <i>ekisu(torakuto)</i>	Extract	Extract	PDL	■■■□□
エゲレス <i>egeresu</i>	Engels	United Kingdom (arch.)	SS ('Engels' means 'English')	■■□□□
エラスチック <i>erasuchikku</i>	Elastiek	Elastic	PDL	■■□□□
エリキシル <i>erikishiru</i>	Elixir	Elixir	PDL	■■□□□
エル <i>eru</i>	Ell	Ell	PDL	■□□□□
エルビウム <i>erubiumu</i>	Erbium	Erbium	PDL	■■□□□
エレキ <i>ereki</i>	Elektriciteit	Electricity	Abbreviated PDL	■■■□□
エレキテル <i>erekiteru</i>	Elektriciteit	Elekiter (electric generator)	PDL	■■□□□
オクダント or オクタント <i>okudanto/okutanto</i>	Octant	Octant	PDL	■■□□□
オスミウム <i>osumiumu</i>	Osmium	Osmium	PDL	■□□□□
オパール <i>opāru</i>	Opaal	Opal	PDL	■■□□□
オブラート <i>oburāto</i>	Oblaad	Paper-thin wafer	PDL	■■□□□
オルゴール <i>orugōru</i>	Orgel	Music box	PDL	■■■□□
オンス <i>onsu</i>	Ons	Ounce	PDL	■■□□□
お転婆 <i>otenba</i>	Ontembaar	Tomboy	SS ('ontembaar' means 'untameable')	■■□□□
カカオ <i>kakao</i>	Cacao	Cocoa	LFB (Spanish <i>cacao</i>)	■■■□□

ガス <i>gasu</i>	Gas	Gas	PDL	■■■■■
カタコンベ <i>katakonbe</i>	Catacombe	Catacomb	PDL	■□□□
カタル <i>kataru</i>	Catarre	Catarrh	LFB (French <i>catarrh</i>)	■□□□
カテーテル <i>katēteru</i>	Katheter	Catheter	PDL	■■■□□
カドミウム <i>kadomiumu</i>	Cadmium	Cadmium	PDL	■■■□□
カトリック <i>katorikku</i>	Katholiek	Catholic	PDL	■■■■□
カノン <i>kanon</i>	Kanon	Cannon	PDL	■□□□
カバン <i>kaban</i>	kabas	bag	Unclear. Possibly originally <i>kabansu</i>	■■■□□
カミツレ <i>kamitsure</i>	Kamille	Chamomile	PDL	■□□□
カメレオン <i>kamereon</i>	Kameleon	Chameleon	PDL	■□□□
カユプテ <i>kayuputo</i>	Kajapoet	Cajeput	LFB (Indonesian <i>kayu putih</i>)	■□□□
ガラス <i>garasu</i>	Glas	Glass	PDL	■■■■■
カラン <i>karan</i>	Kraan	Faucet	PDL	■□□□
カリ (ウム) <i>kari(umu)</i>	Kalium	Potassium	PDL	■■■□□
ガリウム <i>gariumu</i>	Gallium	Gallium	PDL	■■□□□
カルキ <i>karuki</i>	Kalk	Chalk	PDL	■□□□
カルシューム <i>karishūmu</i>	Calcium	Calcium	PDL	■■□□□
カルミン <i>karumin</i>	Karmijn	Carmine	PDL	■□□□
カロメル <i>karomeru</i>	Kalomel	Calomel	PDL	■□□□
カン <i>kan</i>	Kan	Can	PDL	■■■■□

カンタリス <i>kantarisu</i>	Cantharis	Cantharidin	LFB (Latin <i>cantharis</i>)	■□□□
カンテラ <i>kantera</i>	Kandelaar	Lantern	Possible Portuguese influence from <i>candeia</i>	■■□□□
ガンビール <i>ganbīru</i>	Gambir	Gambier	PDL	■□□□□
カンフル <i>kanfuru</i>	Kamfer	Camphor	PDL	■■□□□
キール <i>kīru</i>	Kiel	Keel	PDL	■■□□□
キニーネ <i>kinīne</i>	Kinine	Quinine	PDL	■■□□□
キノ <i>kino</i>	Kino gom	Kino (gum)	LFB (Indian languages <i>kino</i>)	■■□□□
ギプス <i>gipusu</i>	Gips	Gypsum	PDL	■■□□□
ギヤマン <i>giyaman</i>	Diamant	Glassware; Diamond (<i>arch.</i>)	SS	■■□□□
グルデン <i>guruden</i>	Gulden	Guilder	PDL	■■□□□
クレオソート <i>kureosōto</i>	Creosoot	Creosote	PDL	■■□□□
グロス <i>gurosu</i>	Gros	Gross	PDL	■■■□□
クロム <i>kuromu</i>	Kroom	Chromium	PDL	■■■□□
ケイ素 <i>keiso</i>	Keiaard	Silicon	HL	■■□□□
ケルプ <i>kerupu</i>	Kelp	Kelp	PDL	■■□□□
グレイン <i>gerein</i>	Grein	Grain (unit)	PDL	■□□□□
ゲンチアナ <i>genchiana</i>	Gentiana	Gentian	LFB (Latin <i>gentians</i>)	■■□□□
コエンドロ <i>koendoro</i>	Koriander	Coriander	Portuguese <i>koentro</i> reinforced by Dutch	■■□□□
コーヒー <i>kōhī</i>	Koffie	Coffee	PDL	■■■■■
コチニール <i>kochinīru</i>	Cochenille	Cochineal	LFB (French <i>cochenille</i>)	■■□□□

コック <i>kokku</i>	Kok	Chef	PDL	■■■□□
コップ <i>koppu</i>	Kop	Cup	PDL	■■■□□
コバルト <i>kobaruto</i>	Cobalt	Cobalt	PDL	■■■□□
ゴム <i>gomu</i>	Gom	Gum	PDL	■■■■■
コルク <i>koruku</i>	Kurk	Cork	PDL	■■■□□
コレラ or コロリ <i>korera/korori</i>	Cholera	Cholera	PDL	■■■□□
コロイド <i>koroido</i>	Colloïde	Colloid	PDL	■■□□□
コロジオン <i>korojion</i>	Collodion	Collodion	PDL	■■□□□
コンパス <i>konpasu</i>	Kompas	Compass	PDL	■■■□□
サーベル <i>sāberu</i>	Sabel	Sabre	PDL	■■□□□
サゴ <i>sago</i>	Sago	Sago	PDL	■■□□□
サッサfras <i>sassafurasu</i>	Sassafras	Sassafras	LFB (Latin <i>sassafras</i>)	■□□□□
サテン <i>saten</i>	Satijn	Satin	PDL	■■■□□
サフラン <i>safuran</i>	Saffraan	Saffron	PDL	■■■□□
サルサ (パリルラ) <i>sarusa(pariura)</i>	Sarsaparilla	Sarsaparilla	LFB (Latin <i>sarsaparilla</i>)	■□□□□
サルビア <i>sarubia</i>	Salvia	Salvia	LFB (Latin <i>salvia</i>)	■■□□□
シアン <i>shian</i>	Cyaan	Cyan	PDL	■■□□□
ジギタリス <i>jigitarisu</i>	Digitalis	Digitalis	LFB (Latin <i>digitalis</i>)	■■□□□
ジャガイモ <i>jagaimo</i>	aardappel	Potato	HL	■■■■■
ジャガタラ <i>jagatara</i>	Jakarta	Jakarta; Potato	LFB (Indonesian <i>Jakarta</i>)	■■□□□

しゅちん 絹珍 <i>shuchin</i>	Satijn	Satin	PDL	■□□□
シロップ <i>shiropu</i>	Siroop	Syrup	PDL	■■■□□
スコップ <i>sukoppu</i>	Schop	Spade	PDL	■■■□□
ズック <i>zukku</i>	Doek	Canvas	PDL	■■□□□
ストリキニーネ <i>sotorikinīne</i>	Strychnine	Strychnine	PDL	■■□□□
ストロップワッフル <i>sutorōpuwaffuru</i>	Stroopwafel	Syrup waffle	PDL	■■□□□
スポイト <i>supoito</i>	Sput	Syringe	PDL	■■□□□
セイミ <i>seimi</i>	Chemie	Chemistry (<i>arch.</i>)	PDL	■□□□□
セープ <i>sēpu</i>	Zeep	Soap (<i>arch.</i>)	PDL	■□□□□
セネガ <i>senega</i>	Senega	Senega	PDL	■■□□□
ゼネラル <i>zeneraru</i>	Generaal	General	PDL	■■■□□
セメント <i>semento</i>	Cement	Cement	PDL	■■■□□
センチメートル <i>senchimētoru</i>	Centimeter	Centimetre	Dutch/French	■■■□□
センナ <i>sen'na</i>	Senneblad	Senna leaf	PDL	■■□□□
ソーダ <i>soda</i>	Soda	Soda	PDL	■■■□□
ソップ <i>soppu</i>	Soep	Soup	PDL	■■□□□
ターフル <i>tāfuru</i>	Tafel	Table	PDL	■■□□□
タマリンド <i>tamarindo</i>	Tamarinde	Tamarind	LFB (Latin <i>tamarindus</i>)	■■□□□
ダライ (盤) <i>darai(ban)</i>	Draaibank	Lathe	PDL	■■□□□
タラップ <i>tarappu</i>	Trap	Gangway	SS ('trap' means 'stairs')	■■□□□

タルト <i>taruto</i>	Taart	Tart	LFB (French <i>tarte</i>)	■■■□□
ダンス <i>dansu</i>	Dans	Dance	PDL	■■■■■
チフス <i>chifusu</i>	Typhus	Typhoid fever	PDL	■■□□□
チンキ <i>chinki</i>	Tinctuur	Tincture	PDL	■■□□□
デッキ <i>dekki</i>	Dek	Deck	PDL	■■■■□
テレピン or テレピン <i>terebin/terepin</i>	Terpentijn	Turpentine	PDL	■■□□□
ドイツ <i>doitsu</i>	Duits	Germany	PDL	■■■■■
ドクトル <i>dokutoru</i>	Doctor	Doctor	PDL	■■□□□
ドック <i>dokku</i>	Dok	Dock	PDL	■■■■□
ドル (ラル) <i>doru(raru)</i>	Dollar	Dollar	PDL	■■■■■
ドロンケン <i>doronken</i>	Dronken	Drunk	PDL & DL	■■□□□
ドンタク <i>dontaku</i>	Zondag	Sunday	PDL & DL	■■□□□
ナトリウム <i>natoriumu</i>	Natrium	Sodium	PDL	■■■■□
ナфта <i>nafuta</i>	Nafta	Naphtha	PDL	■■□□□
ニッケル <i>nikkeru</i>	Nikkel	Nickel	PDL	■■■□□
ネーデルランド <i>nēderurando</i>	Nederland	Netherlands	PDL	■■□□□
バイト <i>baito</i>	Beitel	Chisel	PDL	■□□□□
パップ <i>pappu</i>	Pap	Cataplasm	PDL	■■□□□
ハترون紙 <i>hatoronshi</i>	Patroon	Kraft paper	HL	■■□□□
パプリカ <i>papurika</i>	Paprika	Bell pepper	PDL	■■■□□

ハム <i>hamu</i>	Ham	Ham	PDL	■■■■■
バルサム <i>barusamu</i>	Balsem	Balsam	PDL	■■■■■
パレット <i>paretto</i>	Palet	Palette	LFB (French <i>palette</i>)	■■■■■
ハロゲン <i>harogen</i>	Halogeen	Halogen	PDL	■■■■■
半ドン <i>handon</i>	Zondag	Half-holiday	HL & DL	■■■■■
ビート <i>bīto</i>	Biet	Beet	PDL	■■■■■
ビール <i>bīru</i>	Bier	Beer	PDL	■■■■■
ビスケット <i>bisuketto</i>	Beschuit	Rusk	PDL	■■■■■
ヒステリー <i>hisuterī</i>	Hysterie	Hysteria	PDL	■■■■■
ピストル <i>pisutoru</i>	Pistool	Pistol	PDL	■■■■■
ヒソップ <i>hisoppu</i>	Hyssop	Hyssop	LFB (Latin <i>hyssopus</i>)	■■■■■
ヒポコンデリー <i>hipokonderī</i>	Hypochondrie	Hypochondriasis	PDL	■■■■■
ヒヨス <i>hiyosu</i>	Hyoscyamus	Henbane leaf	LFB (Latin <i>hyoscyamus</i>)	■■■■■
ピンセット <i>pinsetto</i>	Pincet	Tweezers	LFB (French <i>pincette</i>)	■■■■■
ピント <i>pinto</i>	Brandpunt	Focus (camera)	Abbreviated PDL	■■■■■
ブイ <i>bui</i>	Boei	Buoy	PDL	■■■■■
フーゼル <i>fūzeru</i>	Foezel	Fusel	PDL	■■■■■
フード <i>fūdo</i>	Hoed	Hood; Hat	PDL	■■■■■
プード <i>pūdo</i>	Pud	Pood	Dutch/Russian	■■■■■
フラネル or フランネル <i>furaneru/furan'neru</i>	Flanel	Flannel	PDL	■■■■■

プラチナ <i>purachina</i>	Platina	Platinum	PDL	■■■■□□
ブリキ <i>buriki</i>	Blik	Tin plate	PDL	■■■■□□
フリントガラス <i>furintogarasu</i>	Flintglas	Flint glass	PDL	■□□□□
プロイセン <i>puroisen</i>	Pruisen	Prussia	Dutch/German	■■■■□□
ヘクトメートル <i>hekuto</i>	Hectometer	Hectometre	LFB (French <i>hectometre</i>)	■■□□□
ペスト <i>pesuto</i>	Pest	Plague	PDL	■■■■□□
ヘット <i>hetto</i>	Vet	Beef tallow	SS ('vet' means 'fat')	■■□□□
ペリカン <i>perikan</i>	Pelikaan	Pelican	PDL	■■□□□
ベルギー <i>berugī</i>	België	Belgium	PDL	■■■■□□
ベレンス <i>berensu</i>	Berlijns blauw	Prussian blue	Abbreviated PDL	■■□□□
ペン <i>pen</i>	Pen	Pen	PDL	■■■■■
ベンガラ or ベニガラ <i>bengara/benigara</i>	Bengaal	Red iron oxide	Imported from Bengal, hence the name	■■□□□
ベンキ <i>penki</i>	Pek	Paint	PDL	■■■■□□
ヘンルーダ <i>henrūda</i>	Wijnkruid	Common rue	PDL	■■■■□□
ホース <i>hōsu</i>	Hoos	hose	PDL	■■■■□□
ボート <i>bōto</i>	Boot	Boat	PDL	■■■■□□
ボール盤 <i>bōruban</i>	Boor bank	Drill press	PDL	■□□□□
ホクシヤ or ホクシャ <i>hokushiya/hokusha</i>	Fuchsia	Fuchsia	LFB (Latin <i>fuchsia</i>)	■■□□□
ホック <i>hokku</i>	Hoek	Hook	PDL	■■□□□

ホッテントット <i>hottentotto</i>	Hottentot	Hottentot, Khoi People	PDL	■■□□
ホップ <i>hoppu</i>	Hop	Hops	PDL	■■■□
ポリープ <i>porīpu</i>	Poliep	Polyp	PDL	■■■□
ポルダー <i>porudā</i>	Polder	Polder	PDL	■□□□
ポンス <i>ponsu</i>	Pons	Punch; Squash	PDL	■■□□
ポンド <i>pondo</i>	Pond	Pound	PDL	■■■■□
ポンプ <i>ponpu</i>	Pomp	Pump	PDL	■■■■□
ボンボン <i>bonbon</i>	Bonbon	Bonbon	LFB (French <i>bonbon</i>)	■■■□
マナ or マンナ <i>mana/man'na</i>	Manna	Manna	PDL	■■■□
マグネシア <i>maguneshia</i>	Magnesia	Magnesia	PDL	■■□□
マグネシウム <i>mageneshiumu</i>	Magnesium	Magnesium	PDL	■■■□
マスチック <i>masuchikku</i>	Mastiek	Mastic gum	PDL	■□□□
マスト <i>masuto</i>	Mast	Mast	PDL	■■□□
マドロス <i>madorosu</i>	Matroos	Sailor	PDL	■■□□
マヨラナ <i>mayorana</i>	Majoraan	Marjoram	PDL	■■□□
マラリア or マラリヤ <i>mararia/marariya</i>	Malaria	Malaria	PDL	■■■□
マルス <i>marusu</i>	Mars	(Planet) Mars	PDL	■■□□
マンガン <i>mangan</i>	Mangaan	Manganese	PDL	■■■□
マンテル <i>manteru</i>	Mantel	Cloak	PDL	■■□□

ミーアキャット <i>mīakyatto</i>	Meerkat	Meerkat	English/Dutch	■■□□□
ムスク <i>musuku</i>	Muskus	Musk	<i>musuku</i> derived from old Dutch ‘musc’	■■□□□
メイド <i>mēdo</i>	Meid	Maid	SS (‘meid’ usually means ‘girl’)	■■□□□
メートル <i>mētoru</i>	Meter	Metre	LFB (French <i>mètre</i>)	■■■■■
メス <i>mesu</i>	Mes	Scalpel	SS (‘mes’ means ‘knife’)	■■■□□
メランコリア <i>merankoria</i>	Melancholie	Melancholy	PDL	■■□□□
メリッサ <i>merissa</i>	Melisse	Melissa	LFB (Latin <i>melissa</i>)	■■□□□
モートル <i>mōtoru</i>	Motor	Motor	PDL	■■□□□
モリブデン <i>moribuden</i>	Molybdeen	Molybdenum	PDL	■■□□□
モルヒネ <i>moruhine</i>	Morfine	Morphine	PDL	■■■□□
モルモット <i>morumotto</i>	Marmot	Guinea pig	PDL	■■□□□
ヤーパン <i>yāpan</i>	Japan	Japan (<i>arch.</i>)	PDL	■□□□□
ヤール (ド) <i>yāru(do)</i>	Yard	Yard	PDL	■■□□□
八重洲 <i>yaesu</i>	Jan Joosten van Lodensteyn	Yaesu (District in Tokyo)	Japanification of ‘Jan Joosten’, who lived in Tokyo in the 17 th century	■■□□□
ヤラッパ <i>yarappa</i>	Jalappe	Jalap	PDL	■■□□□
ヨーロッパ <i>yōroppa</i>	Europa	Europe	Dutch/Portuguese	■■■■■
ヨジウム <i>yojiumu</i>	Jodium	Iodine	PDL	■□□□□
ライデン 瓶 <i>raidenbin</i>	Leidse fles	Leyden jar	HL	■□□□□
ラケット <i>raketto</i>	Racket	Racket	PDL	■■■□□
ラテン <i>raten</i>	Latijn	Latin	Dutch/Portuguese	■■■■■

ランセット <i>ransetto</i>	Lancet	Lancet	PDL	■ ■ □ □ □
ランドセル <i>randoseru</i>	Ransel	Randoseru (type of children's backpack)	SS (Dutch 'ran(d)sel' originally was a type of military knapsack)	■ ■ ■ □ □
ランプ <i>ranpu</i>	Lamp	Lamp	PDL	■ ■ ■ ■ □
リチウム <i>richiumu</i>	Lithium	Lithium	PDL	■ ■ ■ □ □
リモナーデ <i>rimonāde</i>	Limonade	Lemonade	PDL	■ □ □ □ □
リンパ <i>rinpa</i>	Lympha	Lymph	PDL	■ ■ ■ ■ □
ルーデサック <i>rūdesakku</i>	Roedezak	Condom (<i>arch.</i>)	PDL	■ □ □ □ □
レッテル <i>retteru</i>	Letter	Label	PDL	■ ■ ■ □ □
レトルト <i>retoruto</i>	Retort	Retort	PDL	■ ■ ■ □ □
レンズ <i>renzu</i>	Lens	Lens	PDL	■ ■ ■ ■ ■
ロストル <i>rosutoru</i>	Rooster	Fire grade	PDL	■ ■ □ □ □

Table 2: Loan translations

For the loan translations, a literal morpheme-by-morpheme translation into English of both the Japanese and the Dutch words have been added under the Japanese and Dutch entries respectively in order to clarify the way in which each Dutch term was adapted into Japanese. Because all words in the list are loan translations, the assignment of loanwords subgroups was omitted, which resulted in the fourth column only containing notes.

Japanese (Literal translation)	Dutch (Literal translation)	English	Notes	Relevancy
アイスランド 苔 <i>aisurandogoke</i> (‘Iceland mos’)	IJslandse mos (‘Icelandic mos’)	Icelandic moss		■ □ □ □ □
亜鉛華 <i>aenka</i>	Zinkbloem (‘zinc flower’)	Zinc powder		■ □ □ □ □

(‘zinc flower’)				
胃液 <i>ieki</i> (‘stomach juice’)	Maagsap (‘stomach juice’)	Gastric juice		■■■■□□
硫黄華 <i>iōka</i> (‘sulphur flower’)	Zwavelbloem (‘sulphur flower’)	Sublimed sulphur		■□□□□
萎黄病 <i>iōbyō</i> (‘withered yellow sickness’)	Bleekzucht (‘pale sickness’)	Greensickness		■□□□□
胃痛 <i>itsū</i> (‘stomach pain’)	Maagkramp (‘stomach cramp’)	Gastralgia		■■□□□□
陰極 <i>inkyoku</i> (‘negative pole’)	Negatieve pool (‘negative pole’)	Cathode		■■□□□□
引力 <i>inryoku</i> (‘attraction force’)	Aantrekkingskracht (‘drawing force’)	Attraction; Pull		■■■■□□
塩酸 <i>ensan</i> (‘salt acid’)	Zoutzuur (‘salt acid’)	Hydrochloric acid		■■■■□□
遠心力 <i>enshinryoku</i> (‘distant centre force’)	Middelpuntvliedende kracht (‘centre-fleeing force’)	Centrifugal force		■□□□□
壊血病 <i>kaiketsubyō</i> (‘break blood sickness’)	Scheurbuik (‘break stomach’)	Scurvy		■□□□□
海軍 <i>kai gun</i> (‘sea armed force’)	Zeemacht (‘sea power’)	Navy		■■■■■
海葱 <i>kaisō</i> (‘sea onion’)	Zeeajuin (‘sea onion’)	Sea onion; White squill		■■□□□□
蝸牛殻 <i>kagyūkaku</i> (‘snail shell’)	Slakkenhuis (‘snail house’)	Cochlea		■□□□□
角膜 <i>kakumaku</i> (‘horn membrane’)	Hoornvlies (‘horn membrane’)	Cornea		■■■■□□
加速 <i>kasoku</i> (‘addition speed’)	Versnelling (‘making quicker’)	Acceleration		■■■■□□

甘汞 <i>kankō</i> (‘sweet mercury’)	Zoete kwik (‘sweet mercury’)	Calomel		■□□□
冠詞 <i>kanshi</i> (‘crown word’)	Lidwoord (‘joint word’)	Article		■□□□
環指 <i>kanshi</i> (‘ring finger’)	Ringvinger (‘ring finger’)	Ring finger		■□□□
慣性 <i>kansei</i> (‘accustom nature’)	Traagheid (‘slowness’)	Inertia		■□□□
可溶 <i>kayō</i> (‘can-dissolve’)	Oplosbaar (‘dissolve-able’)	Soluble		■□□□
機械学 <i>kikai gaku</i> (‘instrument study’)	Werktuigkunde (‘instrument study’)	Mechanics		■□□□
蟻酸 <i>gisan</i> (‘ant acid’)	Mierenzuur (‘ant acid’)	Formic acid		■□□□
偽膜 <i>gimaku</i> (‘false membrane’)	Schijnvlies (‘apparent membrane’)	Pseudo membrane		■□□□
嗅神経 <i>kyūshinkei</i> (‘smell nerve’)	Reukzenuw (‘smell nerve’)	Olfactory nerve		■□□□
求心力 <i>kyūshinryoku</i> (‘seek centre force’)	Middelpuntzoekende kracht (‘centre-seeking force’)	Centripetal force		■□□□
恐水病 <i>kyōsui byō</i> (‘fear water illness’)	Watervrees (‘water fear’)	Hydrophobia		■□□□
強膜 <i>kyōmaku</i> (‘hard membrane’)	Hardevlies (‘hard membrane’)	Sclera		■□□□
胸膜 <i>kyōmaku</i> (‘breast membrane’)	Borstvlies (‘breast membrane’)	Pleural cavity		■□□□
形容詞 <i>keiyōshi</i> (‘form appearance word’)	Bijvoeglijk naamwoord (‘added name word’)	Adjective		■□□□
血球 <i>kekkyū</i> (‘blood ball’)	Bloedbolletje (‘blood ball’)	Blood cell		■□□□

結膜 <i>ketsumaku</i> ('bind membrane')	Bindvlies ('bind membrane')	Conjunctival		■■■□□
犬歯 <i>kenshi</i> ('dog tooth')	Hondstand ('dog tooth')	Canine tooth		■■□□□
元素 <i>genso</i> ('origin element')	Grondstof ('fundament matter')	Chemical element		■■■■□
顕微鏡 <i>kenbikyō</i> ('appear minuteness glass')	Mikroskoop ('micro scope')	Microscope		■□□□□
虹彩 <i>kōsai</i> ('rainbow membrane')	Regenboogvlies ('rainbow membrane')	Iris		■■□□□
恒星日 <i>kōseiijitsu</i> ('fixed star day')	Sterredag ('star day')	Sidereal day		■□□□□
喉頭 <i>kōtō</i> ('throat head')	Strottenhoofd ('throat head')	Larynx		■■■□□
後脳 <i>kōnō</i> ('behind brain')	Achterhersenen ('behind brain')	Hindbrain		■□□□□
呼吸器 <i>kokyūki</i> ('breathing tool')	Ademhalingswerktuigen ('breathing tools')	Respiratory organs		■□□□□
鼓脹 <i>kochō</i> ('drum swell')	Trommelzucht ('drum swelling')	Flatulence; Bloat		■□□□□
鼓膜 <i>komaku</i> ('drum membrane')	Trommelvlies ('drum membrane')	Eardrum		■■■□□
酢酸 <i>sakusan</i> ('vinegar acid')	Azijnsuur ('vinegar acid')	Acetic acid		■■■□□
鎖骨 <i>sakotsu</i> ('key bone')	Sleutelbeen ('key bone')	Clavicle		■■■□□
座薬 <i>zayaku</i> ('seat medicine')	Zetpil ('place pill')	Suppository		■■□□□
酸素 <i>sanso</i> ('sour element')	Zuurstof ('sour matter')	Oxygen		■■■■■

三半規管 <i>sanhankikan</i> ('three half standard tube')	Driehalfrondebuizen ('three semi-circular tubes')	Semi-circular canals		■□□□
耳介 <i>jikai</i> ('ear shell')	Oorschulp ('ear shell')	Auricle		■●□□
視角 <i>shikaku</i> ('vision angle')	Gezichtshoek ('vision angle')	Visual angle		■●□□
視覚 <i>shikaku</i> ('see remember')	Gezicht ('vision')	Sense of sight		■■■■□
色素 <i>shikiso</i> ('colour element')	Kleurstof ('colour matter')	Pigment		■■■■□
篩骨 <i>shikotsu</i> ('sieve bone')	Zeefbeen ('sieve bone')	Ethmoid bone		■□□□
示指 <i>jishi</i> ('point out finger')	Wijsvinger ('point out finger')	Index finger		■●□□
視神経 <i>shishinkei</i> ('vision nerve')	Gezichtszenuw ('vision nerve')	Optic nerve		■□□□
実働 <i>jitsudō</i> ('real movement')	Ware beweging ('real movement')	Actual work	SS (has come to mean actual work, i.e. working hours)	■●□□
自動詞 <i>jidōshi</i> ('self-move word')	(Zelf-)bedrijvend werkwoord ('self-moving work-word')	Intransitive verb		■□□□
尺骨 <i>shakkotsu</i> ('Japanese foot bone')	Elleboogsbeen ('elbow bone')	Ulna		■●□□
修酸 <i>shūsan</i> ('Oxalate acid')	Zuringzuur ('oxalic acid')	Oxalic acid		■●□□
獣帯 <i>jūtai</i> ('animal belt')	Dierenriem ('animal belt')	Zodiac		■□□□
重土 <i>judo</i> ('heavy earth')	Zwaaraarde ('heavy earth')	Barium oxide		■□□□
十二指腸 <i>jūnichichō</i> ('twelve finger gut')	Twaalfvingerige darm ('twelve-fingered gut')	Duodenum		■■■■□

蒸留水 <i>jūryūsui</i> ('distillation water')	Overgehaald water ('distilled water')	Distilled water	■□□□
重力 <i>jūryoku</i> ('heavy force')	Zwaartekracht ('heavy force')	Gravity	■■■■□
種子骨 <i>shushikotsu</i> ('seed child bone')	Zaadbeentjes ('little seed bone')	Sasamoid bone	■□□□
酒石 <i>shuseki</i> ('sake stone')	Wijnsteen ('wine stone')	Cream of tartar	■■□□□
酒石酸 <i>shusekisan</i> ('sake stone acid')	Wijnsteenzuur ('wine stone acid')	Tartaric acid	■□□□□
硝酸 <i>shōsan</i> ('nitrate acid')	Salpeterzuur ('nitrate acid')	Nitric acid	■■■□□
硝子体 <i>shōshitai</i> ('glass body')	Glaslichaam ('glass body')	Vitreous humour	■□□□□
小脳 <i>shōnō</i> ('small brain')	Kleine hersenen ('small brains')	Cerebellum	■■■□□
植民 <i>shokumin</i> ('plant people')	Volksplanting ('people-planting')	Colonisation	■■■■□
助詞 <i>joshi</i> ('help word')	Hulpwerkwoord ('help work-word')	Grammatical Particle	■■■□□
処女膜 <i>shojomaku</i> ('virgin membrane')	Maagdenvlies ('virgin membrane')	Hymen	■□□□□
神経節 <i>shinkeisetsu</i> ('nerve knot')	Zenuwknoop ('nerve knot')	Nerve ganglion	■□□□□
水素 <i>suiso</i> ('water element')	Waterstof ('water matter')	Hydrogen	■■■■□
水溶液 <i>suiyōeki</i> ('water-like fluid')	Waterachtig vocht ('water-like fluid')	Aqueous solution	■□□□□
数詞 <i>sūshi</i> ('number word')	Telwoord ('count word')	Numeral	■■□□□

成分 <i>seibun</i> ('become part')	Bestanddeel ('compromise part')	Component		■■■■■
舌骨 <i>zekkotsu</i> ('tongue bone')	Tongbeen ('tongue bone')	Hyoid bone		■■□□□
接続詞 <i>setsuzokushi</i> ('link word')	Voegwoord ('link word')	Conjunction		■□□□□
前置詞 <i>zenchishi</i> ('before placement word')	Voorzetsel ('before placement')	Preposition		■□□□□
蠕動 <i>zendō</i> ('worm-crawling movement')	Wormgewijze beweging ('worm-like movement')	Vermiculation		■■□□□
前脳 <i>zen'nō</i> ('before brain')	Voorhersenen ('before brain')	Forebrain		■■□□□
想像力 <i>sōzōryoku</i> ('imagination power')	Verbeeldingskracht ('imagination power')	Imagination		■□□□□
大気圧 <i>taikiatsu</i> ('air pressure')	Luchtdruk ('air pressure')	Atmospheric pressure		■□□□□
代名詞 <i>daimeishi</i> ('substitute noun')	Voornaamwoord ('before name word')	Pronoun		■□□□□
炭酸 <i>tansan</i> ('coal acid')	Koolzuur ('coal acid')	Carbonic acid		■■■■■□
炭素 <i>tanso</i> ('coal element')	Koolstof ('coal matter')	Carbon		■■■■■□
弾力 <i>danryoku</i> ('stretch power')	Uitzettingsvermogen ('expansion power')	Elasticity		■■■■■□
恥骨 <i>chikotsu</i> ('shame bone')	Schaamtebeen ('shame bone')	Pubis bone		■■□□□
窒素 <i>chisso</i> ('obstruct element')	Stikstof ('choke element')	Nitrogen		■■■■■□
聴神経 <i>chōshinkei</i> ('hear nerve')	Gehoorzenuw ('hearing nerve')	Auditory nerve		■□□□□

張力 <i>chōryoku</i> ('snap power')	Veerkracht ('spring power')	Tensile Force	■■■□
槌骨 <i>tsuchikotsu</i> ('hammer bone')	Hamer ('hammer')	Malleus	■□□□
澱粉 <i>denpun</i> ('sediment flour')	Zetmeel ('set flour')	Starch	■■■□
橈骨 <i>tōkotsu</i> ('oar bone')	Speekbeen ('oar bone')	Radius bone	■■■□
動詞 <i>dōshi</i> ('movement word')	Werkwoord ('work word')	Verb	■■■■□
動脈 <i>dōmyaku</i> ('move vein')	Slagader ('beat vein')	Artery	■■■■□
吐根 <i>tokon</i> ('vomit root')	Braakwortel ('vomit root')	Ipecac	■□□□
軟骨 <i>nankotsu</i> ('flexible bone')	Kraakbeen ('crack bone')	Cartilage	■■■□
二頭筋 <i>nitōkin</i> ('two head muscle')	Tweehoofdige spier ('two-headed muscle')	Biceps	■□□□
乳劑 <i>nyūzai</i> ('milk medicine')	Melkdrank ('milk drink')	Emulsion	■■■□
乳酸 <i>nyūsan</i> ('milk acid')	Melkzuur ('milk acid')	Lactic acid	■■■□
乳糖 <i>nyūtō</i> ('milk sugar')	Melksuiker ('milk sugar')	Lactose	■■■□
尿酸 <i>nyōsan</i> ('urine acid')	Piszuur ('urine acid')	Uric acid	■■■□
粘液腫 <i>nen'ekishu</i> ('sticky fluid swelling')	Slijmgezwel ('slime swelling')	Myxoma	■□□□
粘膜 <i>nenmaku</i> ('sticky membrane')	Slijmvlies ('slime membrane')	Mucous membrane	■■■■□

脳膜 <i>nōmaku</i> (‘brain membrane’)	Hersenvlies (‘brain membrane’)	Meninges		■ ■ □ □
馬力 <i>bariki</i> (‘horse power’)	Paardenkracht (‘horse power’)	Horsepower		■ ■ ■ □
鼻翼 <i>biyoku</i> (‘nose wing’)	Neusvleugel (‘nose wing’)	Nostril		■ ■ □ □
副詞 <i>fukushi</i> (‘aiding word’)	Bijwoord (‘with-word’)	Adverb		■ ■ ■ □
沸点 <i>futten</i> (‘boil point’)	Kookpunt (‘boil point’)	Boiling point		■ ■ ■ □
分子 <i>bunshi</i> (‘part child’)	Molecuul (‘small mass’)	Molecule	LFB (French <i>molécule</i>)	■ ■ ■ ■ ■
扁桃腺 <i>hentōsen</i> (‘almond gland’)	Amandelen (‘almonds’)	Tonsils		■ □ □ □
硼素 <i>hōso</i> (‘borax element’)	Boraxstof (‘borax matter’)	Boron		■ ■ □ □
母斑 <i>bohan</i> (‘mother spot’)	Moedervlek (‘mother spot’)	Birthmark		■ ■ ■ □
名詞 <i>meishi</i> (‘name word’)	Naamwoord (‘name word’)	Noun		■ ■ ■ ■ □
盲腸 <i>mōchō</i> (‘blind intestine’)	Blindedarm (‘blind intestine’)	Appendix; Caecum		■ ■ ■ □
網膜 <i>mōmaku</i> (‘net membrane’)	Netvlies (‘net membrane’)	Retina		■ ■ ■ □
門脈 <i>monmyaku</i> (‘gate vein’)	Poortader (‘gate vein’)	Portal vein		■ ■ □ □
椰子油 <i>yashiyu</i> (‘palm oil’)	Palmolie (‘palm oil’)	Coconut oil	SS	■ □ □ □
夜盲症 <i>yamōshō</i> (‘night blind sickness’)	Nachtblind (‘night blind’)	Nyctalopia		■ □ □ □

誘因 <small>ゆういん</small> <i>yūin</i> ('entice cause')	Aanleidende oorzaak ('entice cause')	Incentive		■■■■□□
溶解 <small>ようかい</small> <i>yōkai</i> ('dissolve untie')	Oplossen ('dissolve'/'make loose')	Dissolution		■■■■□□
陽極 <small>ようきょく</small> <i>yōkyoku</i> ('positive pole')	Positieve pool ('positive pole')	Anode		■■□□□□
雷銀 <small>らいぎん</small> <i>raigin</i> ('thunder silver')	Donderzilver ('thunder silver')	Fulminating silver		■□□□□□
硫酸 <small>りゅうさん</small> <i>ryūsan</i> ('sulphur acid')	Zwavelzuur ('sulphur acid')	Sulphuric acid		■■■■□□
流動体 <small>りゅうどうたい</small> <i>ryūdōtai</i> ('flow move body')	Vloeistof ('flow matter')	Liquid		■□□□□□
磷酸 <small>りんきん</small> <i>rinsan</i> ('phosphoric acid')	Fosforzuur ('phosphoric acid')	Phosphoric acid		■■□□□□
涙管 <small>るいかん</small> <i>ruikan</i> ('tear tube')	Traanbuis ('tear tube')	Lachrymal duct		■□□□□□
涙腺 <small>るいせん</small> <i>ruisen</i> ('tear gland')	Traanklier ('tear gland')	Lachrymal gland		■■□□□□
肋膜 <small>ろくまく</small> <i>rokumaku</i> ('rib membrane')	Ribbevlies ('rib membrane')	Pleura		■■□□□□

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Appendices

Appendix 1 - Raw Data of the Dictionary Cross-Analysis and Corpus Analysis

The raw data for both the dictionary cross-analysis and the corpus analysis are combined in one Excel file. The way in which it was conducted as well as the meanings of the symbols used in it have been elaborated in section 3.3.

The Japanese words have been colour graded in accordance with the dictionary cross-analysis' findings on relevance. The corpus analysis' results also have been colour graded. Entries whose Dutch origin the *Nihon Kokugo Daijiten* or *Kōjien* confirms have been marked as green in the dictionaries' respective rows.

https://1drv.ms/x/s!Al6pEyoMjzKjgmX2ETBov3_nJBRJ?e=tvSNg5

Appendix 2 - Questionnaire

As was described in chapter 3.5., the questionnaire was conducted in Google Forms. Using the application's 'Print'-function, the following PDF file was created. Please note that the questions' order was randomised when the participants answered them. The English parts were added by the 'Print'-function.

JAPK12 : オランダ語から来た外来語のアンケート

私はルンド大学で日本学を勉強しているWillem Koen（ウィレム・クーン）と申します。
今、学士論文を書いています。日本語におけるオランダ語からの借用語量の影響について調べるためにアンケートを作成しました。

このアンケートでは、これまでの私の研究の結果と比較するために作られました。次の文はオランダ語から日本語になった外来語が含まれています。文にある星印が付いている語量の意味が分かるかどうかを尋ねています。

このアンケートで得られたデータは匿名で記録され、学内と学士論文にのみ使用されます。個人が特定されたり、他の目的で使用されたりすることはありません。

アンケートにかかる時間は2分ぐらいです。
ご協力、よろしくお願いします。

* Required

基本の情報

以下の情報を書き込んでください

1. 職業（大学生、会社員など）

2. 性別 *

Mark only one oval.

- ☐ 女性
- ☐ 男性
- ☐ 言いたくない

3. 年齢 *

Mark only one oval.

- ☐ 十代
- ☐ 二十代
- ☐ 三十代
- ☐ 四十代
- ☐ 五十代
- ☐ 六十代
- ☐ 七十代以上
- ☐ 言いたくない

4. 出身 *

Mark only one oval.

- ☐ 沖縄
- ☐ 九州
- ☐ 四国
- ☐ 中国
- ☐ 関西
- ☐ 中部
- ☐ 関東
- ☐ 東北
- ☐ 北海道
- ☐ 日本ではない
- ☐ 言いたくない

5. オランダ語の知識がありますか *

Mark only one oval.

- ☐ はい
- ☐ いいえ

質
問

次の文を読んで、星印が付いている（*このように*）言葉が分かるかどうか答えて下さい。終わったら、次のページで全部の言葉の意味を見ましょう。

6. 歴史的な*アルケミー*の意識に興味がある。 *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

7. 二十世紀の始めに日本から*エゲレス*まで旅行するのは一ヶ月以上かった。 *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

8. 子供が*オレーフ*が嫌いな傾向があるらしい。 *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

9. *ストローブワッフル*をオランダ以外でも買える？ *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

10. 通りは*フラフ*で飾られていた。 *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

11. この*ボトル*はすっぱい味がする。 *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

12. 彼は骨董品屋でこの古い*オルゴール*を買った。 *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

13. 故障しているので、*カラン*を使えなかった。 *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

14. *ヘット*を減らすほうがいい？ *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

15. 医者は*メス*を持っています。 *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

16. *ケイトル*は爆発する可能性があると聞いた。 *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

17. 小学校の時からいつも*ポットロード*で書いていた。 *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

18. これはすごく*ゴロート*な建物だね！ *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

19. *セーブ*が目にしみました *

Mark only one oval.

- ☐ 分かる
☐ 自信がない

20. 彼女は*コップ*にミルクを注いだ *

Mark only one oval.

- ☐ 分かる
- ☐ 自信がない

解答

以下の解答を見てみましょう。

アルケミー	- 錬金術 (金属を人工的手段による貴金属に転換する術のこと)
エゲレス	- 英国
オリーブ	- オリーブ
ストロークワッフル	- シロップが挟まれたワッフル
セーブ	- 石鹸
フラフ	- 旗
ボトル	- バター
オルゴール	- 自鳴琴 (機械仕掛けにより自動的に楽曲を演奏する楽器)
カラン	- 蛇口
コップ	- カップ
ヘット	- 牛脂
メス	- 外科手術に用いられる刃物
ケイトル	- ボイラー
ボットロード	- 鉛筆
ゴロート	- 大きい

何か驚きや発見がありましたか。私の他の研究によると、現代の日本人はこれらの語彙をすべて理解することは難しいという結果があります。

上記以外にもオランダ語を起源とする外来語は日本語の中にたくさんあります。

21. 答えを見て、解答中には「分かる」を選びましたが、誤解していたものがあれば教えてください。また、逆に、「自信がない」と答えたが、答えを見たら分かるものがあれば教えてください。

ご協力、ありがとうございました。

これでアンケートは終わりです。
ご協力、ありがとうございました。

アンケートに関する質問がありましたら、
Willemkoen@protonmail.com までお問い合わせください。

Appendix 3 - Raw Data of the Questionnaire Results

The raw data of the questionnaire results were compiled in a similar way to Appendix 1, i.e. in an Excel file. The way in which it was conducted as well as the meanings of the symbols used in it have been elaborated in chapter 3.5. Please note that several categories have been colour graded.

https://1drv.ms/x/s!Al6pEyoMjzKjgmb6-GuTu0dke_El?e=zhEgNf