Collocation Tendencies and Classification of Gairaigo Adjectives in Contemporary Japanese: Corpus-based Study

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(Degree)
博士（学術）

(Date of Degree)
2015-03-25

(Date of Publication)
2016-03-01

(Resource Type)
doctoral thesis

(Report Number)
甲第6362号

(URL)
https://hdl.handle.net/20.500.14094/D1006362

博士論文

平成２７年３月２５日

Collocation Tendencies and Classification of *Gairaigo* Adjectives in Contemporary Japanese: Corpus-based Study

（現代日本語における外来語形容詞のコロケーション傾向と分類：コーパスに基づいた研究）

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ACKNOWLEDGEMENTS

INTRODUCTION

The problem of active lexical borrowing from English and other European languages into Contemporary Japanese has been addressed from various perspectives. Some researchers were interested in the processes of loanwords assimilation (Kay, 1995; Irwin, 2011); others studied semantic changes (Daulton, 2008); still others had insights into the sociolinguistic nature of this phenomenon (Loveday, 1986, 1996). Most of the previous studies have been concerned with loanword nouns. However, loanword adjectives have not been sufficiently studied, in particular, the problem of constraints placed on the use loanword adjectives, and the differentiation between loanword adjectives and their near synonyms of Japanese or Chinese (or Sino-Japanese) origin. For example, there are a lot of near synonymic pairs like *hotto* and *atsui* meaning 'hot', *gurē* and *haiiro* meaning 'grey', *rongu* and *nagai* meaning 'long', etc. The differentiation between previously mentioned near synonyms poses a serious problem for both – the native speakers of Japanese, who are overwhelmed with the abundance of borrowed lexicon, and the learners of Japanese, who do not poses a native speakers' introspection to choose the appropriate near synonym.

This dissertation aims at clarifying the following research questions:

1. Is there any tendency in the collocation preferences of the loanword adjectives derived from English adjectives in Contemporary Japanese? Does this phenomenon have anything to do with the difference between loanword

adjectives and their near synonyms of Japanese or Chinese origins?

2. If there is a tendency in collocation patterns of English-origin loanword adjectives, what kind of tendency it is? Is there any relation between the origin of adjectives and the origin of the nouns they are used with? In other words, is there a tendency for homogeneity or for heterogeneity of the origin of words in loanword adjectives + nouns combinations in Contemporary Japanese?

3. Do all the English-based loanword adjectives follow the tendency observed (if it is observed)? Is there a possibility for classifying loanword adjectives in accordance with their collocation preferences?

The object of the given research is loanword adjectives (further also referred to as *gairaigo* adjectives) derived from English adjectives. Although in Contemporary Japanese there are words borrowed from other European languages, but we are primarily focused on English-origin adjectives, since they present the most numerous group of loanword adjectives in Contemporary Japanese. Although loanword adjectives can be used both attributively and predicatively, in the present research we will deal with loanword adjectives used in attributive positions, i.e. to modify nouns.

Present research is based on the quantitative data gathered from BCCWJ corpus (Balanced Corpus of Contemporary Written Japanese), and subjected to statistical analyses. Considering that any language is a rapidly developing system, influenced by various extra- and intralinguistic factors, and that any set of texts presents only a small sample of the whole scope of the

language, the present research has a lot of limitations. However, this research offers a new perspective on and a new approach to the problem of collocation tendencies of *gairaigo* adjectives, and their differentiation from near synonyms of other origins. The results of this study can find applications in the fields of JFL (Japanese as a Foreign Language) education, bibliography, as well as give new insights into the language contact studies.

This thesis consists of seven chapters. Chapter 1 introduces the main categories of the Contemporary Japanese lexicon and presents the background of the research questions. Chapter 2 gives an overview of the previous studies in the field of English loanwords in general, as well as introduces the issue of the differentiation between near synonyms of native and foreign origin. Chapter 3 addresses the problem of the object of the present research, explains the working hypothesis, and describes the methodology to be used in the further case studies. Chapter 4 presents the results of testing the working hypothesis on two sets of data: loan color term adjectives and a group of adjectives addressing the basic physical qualities. Chapter 5 investigates the differences between grammatical collocations of *gairaigo* adjectives and phrase-based *gairaigo* compounds, and demonstrates which type of the use of *gairaigo* adjectives (as a part of grammatical collocations or compounds) is more frequent in Contemporary Japanese. Chapter 6 introduces a new approach to the classification of loanword adjectives in Contemporary Japanese based on the results of the testing of our working hypothesis on data sets in case studies and a sample from a dictionary. In Chapter 7 we summarize

the results, draw general conclusions, and discuss the limitations and possible applications of the results of the present research.

CHAPTER 1

Gairaigo in the Contemporary Japanese Lexicon

This chapter presents general information about the structure of the Contemporary Japanese lexicon, and introduces some general terminology used in the paper, as well as the problem of differentiation between near synonyms of different origins.

1.1 Structure of the Contemporary Japanese Lexicon

The structure of the Japanese lexicon is a very complex and rapidly developing system. Japanese vocabulary is traditionally divided into three main strata of words (Irwin, 2011) based on their origin: (1) *wago*[1] – native Japanese words, (2) *kango* – words of Chinese origin, and (3) *gairaigo* - words borrowed from English and other languages (mostly European, but not only), excluding Chinese. In this paper we mostly follow Irwin's (2011) general description of each stratum as presented below.

(1) *Wago* can be literally translated as 'Japanese words'. Another term for native Japanese vocabulary is *yamato kotoba* or 'Yamato words', where 'Yamato' refers to the ancient name of Japan. This stratum includes the Japanese vocabulary, coming from the ancient Japanese language prior to the contact with the Chinese language. Nowadays, these words can be written

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[1] There are several transliteration systems, but in the present research we will follow Hepburn transliteration system to write Japanese words.

either in both *kana* and *kanji*, or in *kana* only, depending on their parts of speech. Examples of *wago* include *yama* 'mountain' and *kawa* 'river'.

(2) *Kango* means 'Han words'. The word 'Han' stands for Han dynasty of China (206 BCE – 220 CE) and indicates that these words are of Chinese origin. A lot of *kango* words were borrowed directly from Chinese; however, there is a numerous group of so-called *wasei kango* words, referring to the words developed in Japan following Chinese word formation patterns and readings. This stratum of Japanese vocabulary is also referred to as Sino-Japanese (Shibatani, 1990; Irwin, 2011). Examples of *kango* are such words as *goma* 'seasame' and *botan* 'peony'.

(3) *Gairaigo* or 'words coming from the outside' is one of the terms, along with *shakuyōgo* and *katakanago,* referring to the words borrowed mostly, but not exclusively from European languages. The main characteristic of *gairaigo* is that this category excludes Chinese origin words. There are some other terms referring particularly to the words of Western origin, e.g. *yōgo* (literally 'European words'). However, the term *gairaigo* is more frequently used to refer to this stratum. Examples of *gairaigo* include *tēburu* 'table' and *kēki* 'cake'.

Irwin (2011) also mentions two other types of words: mimetic (ideophonic or phonaesthetic) words and hybrid (*konshugo*) words. Although there are numerous approaches to the classification of mimetic words (e.g., Akita, 2009), in the present research the words of this type are not the focus of our attention, and we are following Irwin and include 'the mimetic stratum within the native' (Irwin, 2011). The examples of the mimetic words include

kirakira 'sparking', *fuwafuwa* 'soft', etc. The hybrid words are known in Japanese tradition as *konshugo* or 'combination words'. There are various patterns of combinations, e.g. *wago* and *kango*, *wago* and *gairaigo*, *kango* and *gairaigo*, etc. The examples of *konshugo* are *daidokoro* 'kitchen', *toriniku* 'chicken meat', *keshigomu* 'eraser'.

However, the above-mentioned strata do not cover all the variety of the Japanese lexical items. There are also miscellaneous groups of new morphological types of words such as *waseieigo* 'English made in Japan', e.g. *sararīman* 'white-collar businessman' and *ryakugo* 'abbreviated words', e.g. OL (pronounced as *oeru)* 'office lady'.

The quantitative distribution of each stratum also demonstrates an interesting tendency. Loveday (1986), based on the data by Japanese National Language Research Institute (1964), states that '[t]he number of Chinese loans (47.5%) exceeds that of native Japanese words: (36.7%)' (Loveday, 1986: p 25). The number of *gairaigo* is not that considerable. However, Stanlaw (1982) states that no less than 8% of contemporary Japanese vocabulary is of English origin.

1.2 Near Synonyms in the Contemporary Japanese Lexicon

The wide variety of word strata of the Contemporary Japanese lexicon described in the previous section leads to the existence of numerous near synonyms of different origins. For example, *gohan*（ご飯 'rice cooked and

served in Japanese style' and *raisu*（ライス）'rice cooked and served in a foreign style'; *kiken*（危険）- a Chinese origin word for 'risk' or 'danger' and *risuku*（リスク）- an English origin word for 'risk'. As one can infer from the examples, the differentiation between near synonyms of different origin in some cases is clear-cut, but in other cases is very confusing.

First of all, *kango*, *wago* and *gairaigo* are differentiated in contemporary written Japanese by the use of different writing systems: *kanji*, *hiragana*, and *katakana*, respectively[2]. For example, the concept of 'color' can be expressed by three words of different origins and in the written speech the differentiation is seen in the choice of writing systems: *shikisai* (色彩) is written in kanji or Chinese characters, *iro (*色/いろ) can be written in either a Chinese character, or hiragana syllabary, and *karā* (カラー) is written in katakana syllabary.

Secondly, there is a historically developed stylistic constraint for Chinese origin synonyms to be used mainly in written speech, as opposed to Japanese-origin words, which are widely used in oral speech. *Kango* words for centuries have been used as religious, political, astrological, administrative, and legal terminology (Irwin, 2011). On the other hand, *wago* words have been mostly used in everyday communication.

Another important feature of *kango* words is that they "are not

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[2] Note, that *wago* words can be written in both, *kanji* and *hiragana*. In general, the Japanese language allows of using different writing systems interchangeably for stylistic purposes, e.g. to draw the attention in commercial texts some *wago* words can be written in *katakana*.

considered by most Japanese, linguists or otherwise, to be 'loans' and are treated separately from the foreign stratum" (Irwin, 2011: p 7). This is partially related to the fact that some of the *kango* words were coined in Japan following Chinese word formation and pronunciation patterns.

However, the differentiation between *wago/kango* and constantly increasing *gairaigo* near synonyms in Contemporary Japanese is a more complicated issue. On the one hand, *gairaigo* are competing with *kango* near synonyms, since a lot of new scientific terms introduced into the Japanese language in 19th and 20th centuries were of European origin. On the other hand, *gairaigo* are also widely used in daily life, and, thus, are competing with *wago* as well, since a lot of phenomena related to food, clothing, furniture, etc., were imported from the USA and Europe.

As it was mentioned before, *gairaigo* rose in number notably and became widely used only in the second half of the 20th century: "English words have become especially important since WWII, and these loanwords have become genuine parts of the Japanese lexicon, found in daily conversation and the world of letters" (Daulton, 2008: p 11).

According to Loveday (1996), *gairaigo* words comprise about ten per cent of the Modern Japanese lexicon, but the ratio of *gairaigo* depends on the sphere of use. *Gairaigo* are rarely used in the discourse related to politics, traditional religions (Buddhism and Shinto) and law. On the other hand, the percentage of English loanwords is higher in daily routine, fashion, mass media language: *gairaigo* words "are particularly high in the areas of fashion, cosmetics, food, audio technology, sport, housing, music, art, business

management, and engineering." (Loveday, 1996: p 193). Thus, *gairaigo* are more and more often substituting native and Chinese origin words on a regular basis.

Contemporary Japanese is borrowing new words not only for new phenomena and concepts. The biggest challenge for the native vocabulary is the inflow of numerous loanwords with the same or almost the same meanings as already existing native or Sino-Japanese words. Since any language is a balanced and developing system we should assume that the process of this borrowing has some deeper purpose or meaning, and that such loanword near synonyms have their niche, stylistic, like *kango*, or pragmatic or some other, which should be clearly mentioned in the dictionaries. However, Dictionaries (for example, ***Katakanago Jiten Konsaizu*** (***The Concise Dictionary of Katakana Words***) etc.) in most cases do not state any clear differences in the meaning and use for the abovementioned near synonyms.

Thus, the problem of the clear differentiation between recently increased *garaigo* as opposed to the native words *wago* and long-term assimilated *kango* presents a quite recent and drastically increasing problem for both speakers and learners of Japanese.

1.3 English Loanwords and Sociolinguistic Factors

Stanlaw (2004, 2010) in some of his papers raises the problem of the influence of sociolinguistic factors on the use of English loanwords in the Japanese language. He states that "the number of English loanwords in any

speech event varies greatly by the age, gender, status, and education of the speakers and the topic being discussed" (Stanlaw, 2010: p 43). In the same paper Stanlaw also mentions the tendency for women to use more *gairaigo* than men, and that younger people use more *gairaigo* compared with the older people. In addition, the level of education is also an important factor, and people with higher education are inclined to use more English loanwords.

However, it is not only the gender, age and education of speakers that affects the frequency of the use of English loanwords in a written text or speech. Sociolinguists (Loveday, 1996; Stanlaw, 2010) claim that the number of English loanwords in a text also depends on the topic: for example, the discourse related to the computers, fashion or pop-music, etc., has more English origin vocabulary, compared with the one on traditional art, religion or history. Loveday (Loveday, 1996: p 193) mentions that "most technical, scientific, and commercial topics … depend on extensive English-based terminologies, as do the modern fields of sport, fashion, cosmetics, food, and music".

Therefore, there are numerous sociolinguistic factors influencing the use of *gairaigo* in Contemporary Japanese discourse and other speech events. There are still no clearly formulated constraints indicating when or who can and/or will use a lot of *gairaigo* and who cannot and/or will not do it. "Sometimes, under some conditions, for certain purposes, some people might use a lot of English loanwords; others, at other times, for other reasons might not use them quite so much at all." (Stanlaw, 2010: p 44).

However, the topic of the present research is not the factors influencing

the frequency of *gairaigo* use in Contemporary Japanese. We are primarily concerned with the problem of the use and differentiation between the loanword and *wago/kango* near synonyms. In particular, we are interested in the differentiation between near synonymic adjectives of different origin. We are focused on the adjectives since they present a relatively numerous group of near synonyms, and they are not fully investigated, compared to *gairaigo* nouns. However, the choice of the object of the present research is discussed in a more detail in the following chapters.

Therefore, we are focused not on the questions like "Who uses a lot of *gairaigo* and who does not?" or "In what fields we can find English loanwords?", but on the questions "When do we use the native near synonymic adjectival and when the loanword one?" and "Is there a connection between the origin of the adjectives and the origin of the noun it modifies?". The object and the hypothesis of the present research of the present research will be in explained in the following chapters.

1.4 English loanwords and Japanese Language Learners

The abundance of English loanwords leads to the difficulties not only for the native speakers, but also causes a lot of problems for Japanese language learners in the process of studying as it has been already mentioned.

Stanlaw singles out the following four problems that English loanwords pose for the learners of the Japanese language, whose native language is

English (Stanlaw, 2010: p 53-57)[3]:

"Problem 1: Students believe English loanwords mean the same thing as their original words do in English.

Problem 2: Students believe an English loanword can just substitute for a native Japanese term.

Problem 3: English loanwords seem simply random and arbitrary.

Problem 4: English loanwords seem to reflect a Japanese copy-cat mentality."

Out of four problems mentioned above, problems 1, 2 and 3 are especially acute in the case of differentiation between *gairaigo* and *wago/kango* near synonyms.

"Problem 1: Students believe English loanwords mean the same thing as they do in English."(Stanlaw, 2010: p 53)

Most of English loanwords in the process of borrowing lose some or all of the original meaning and develop new meanings or connotations in Japanese. There are hundreds of examples, such as '*pink*' and *pinku*, '*smart*' and *sumāto*, etc. However, most of the dictionaries do not manage to indicate the rapid changes in the semantic structure of English loanwords. In addition, the abundance of near synonyms of different origins leads to the difficulties when choosing the appropriate one in accordance with the meaning and context.

"Problem 2: Students believe an English loanword can just substitute

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[3] The problems described by Stanlaw are mostly applicable to Japanese learners whose native language is English, and/or other European languages. For Japanese learners whose native languge is Chinese, for example, *gairaigo* can pose different educational challenges.

for a native Japanese term." (Stanlaw, 2010: p 53) and "Problem 3: English loanwords seem simply random and arbitrary." (Stanlaw, 2010: p 54)

The present research tries to find a clear constraint that can help Japanese learners differentiate between native terms and English loanwords. That is why it is so important to clarify meaning and collocation tendencies of *gairaigo* adjectives in Japanese. *Gairaigo* and *wago/kango* near synonyms are close in meanings, but in most cases cannot substitute one another. Usually attention is paid to the cases when Japanese language learners try to use loanwords instead of native terms; however, the substitution of loanwords by native is not always appropriate as well. For example, in a phrase like 'hot black coffee', a *gairaigo* adjective cannot be substituted by native one, i.e. '*hotto burakku kōhī*' cannot be substituted by '*atsukute kuroi kōhī*'. Thus, the fact that gairaigo are appropriate in one context, but not appropriate in other, also proves that the use of loanwords is not arbitrary and random.

Thus, we can see that the problem of differentiation between *gairaigo* and *wago/kango* near synonyms requires a deeper insight, and the clarification of the collocation tendencies of *gairaigo* adjectives can contribute to the better understanding of this problem.

CHAPTER 2

Limitations of Previous Studies and

the Hypothesis of Referential Foreign vs. Native Dichotomy

In this chapter we give a brief overview of the previous approaches to studying *gairaigo*, discuss the sociolinguistic approach to the problem of differentiation between *wago/kango* and *gairaigo* near synonyms in Contemporary Japanese, and highlight the limitations of the existing hypothesis.

2.1 Previous Studies on *Gairaigo* and Sociolinguistic Approach to the Problem of Near Synonyms

English loanwords in Japanese have been a topic of various studies by both native and foreign linguists for more than 100 years. Some researchers are more interested in the assimilation processes of loanwords (Kay, 1995; Irwin, 2011); other linguists focus on semantic changes (Daulton, 2008); still others mainly study their sociolinguistic backgrounds and functions (Loveday, 1986; 1996). Native linguists are often concerned with sociolinguistic problems, such as the attitude toward the increase of *gairaigo* and their role in mass media (Miyata and Tanaka, 2006; Oshima, 2002), as well as how loanwords influence the English language education in Japan (Tomoda, 2005).

In the present research we are focused on the problem of differentiation between native and loanword near synonyms. This problem has been addressed

by a few native and foreign linguists so far. The most comprehensive results on this topic are presented by Leo Loveday. In his work ***Language Contact in Japan*** (1996), Loveday gives a historical overview starting with the contact of Japanese with the Chinese language and finishing by describing the roles, types and functions of English loanwords in Japanese mass media etc.

Most of *gairaigo* words are concrete nouns borrowed from the Western culture, which came to be used abundantly with the modernization of life in Japan. Along with concrete nouns, numerous abstract nouns and adjectives were also borrowed into the basic vocabulary. Loanwords integrated into the Japanese language had passed through assimilation processes: orthographical, phonetic, grammatical changes, etc.

Loveday considers that the occurrence of the synonymic *wago/kango* vs. *gairaigo* pairs is the result of the "Westernization of Japanese culture" and these pairs exist "in semantic opposition where a word referring to a Western phenomenon is English-based and 'complementary' with a word deriving from (Sino-) Japanese and referring to a related version of the phenomenon belonging to native culture." In other words, Loveday argues that the Japanese language reflects the parallelism existing in the Japanese culture, which has and in many cases preserves a clear division between native and foreign cultural objects and phenomena.

Therefore, in the present research we will call Loveday's hypothesis the Hypothesis of Referential Foreign vs. Native Dichotomy, where *gairaigo* is "a word referring to a Western phenomenon" while *wago/kango* is "referring to a related version of the phenomenon belonging to native culture."

Thus, Contemporary Japanese, he argues, has a clear-cut opposition between *wago/kango* and *gairaigo* near synonyms for concrete nouns, i.e., *gairaigo* concrete nouns are used to name foreign phenomena, while (Sino-) Japanese words are used to name native phenomena. He gives such examples as *tō/shōji* (= sliding door) – *doa* ('door'); *futon* (= quilted bedding) – *beddo* ('bed'), etc.

2.2 Limitations of Loveday's Study

In the previous section we have introduced Loveday's approach to the differentiation between native and foreign words which is based on the differentiation between the native and foreign referents.

However, Loveday's hypothesis is clear-cut only in case of concrete nouns when the referents are obvious, but it does not consider any abstract nouns and loanwords derived from English adjectives, which can be as well found in a great number in Contemporary Japanese. For example, how do we differentiate *gairaigo* and *wago/kango* near synonyms in cases like abstract nouns such as *risuku* 'risk' and *kiken* 'risk', *meritto* 'merit' and *riten* 'merit', or adjectives such as *howaito* 'white' and *shiroi* 'white', or *hotto* 'hot' and *atsui* 'hot', etc.? Moreover, Loveday's hypothesis does not clarify the differentiation between near synonymic adjectives of different origins when they are used to modify nouns. Thus, for example, if we want to say 'hot coffee' or 'hot *misoshiru* (miso soup)', which adjective and when should we use – native or loan? We will address some of these issues in our next chapter.

It has also been mentioned previously that Loveday is mostly focused on the socio-linguistic aspects of *gairaigo* role in Japanese. Thus, the methods he exercised in his study were based on questionnaires and unstructured language use in mass media. Therefore, the results of his study presented only one side of the phenomenon and lacked linguistic evidence.

2.3 Corpus-based Studies of *Gairaigo* and *Wago/Kango* Near Synonyms

In recent years with the development of corpus linguistics there has been a number of corpus-based studies investigating the differences between native and foreign near synonyms. The representative studies were conducted by Miyata and Tanaka, who researched the use of loanwords in public media using corpora developed by National Institute for Japanese Language and Linguistics. They studied the frequencies of use and collocation patterns of abstract nouns such as *risuku* 'risk' and *meritto* 'merit', as opposed to their native counterparts.

On the one hand, the results of their studies demonstrated that *gairaigo* near synonyms were used more often than *wago/kango* ones. However, there were some differences in the collocation patterns of *gairaigo* and *wago/kango* near synonyms.

There are three main limitations of Miyata and Tanaka's studies:
(1) Limited number of *gairaigo* (one per each study) under analysis. Although they analyzed a great amount of data on the particular pairs of near synonyms, the results of their studies cannot be considered as demonstrating a general

tendency for Contemporary Japanese.

(2) Due to the limited choice of the research object English adjectives derived *gairaigo* and their w*ago/kango* near synonyms were not investigated.

(3) In Miyata and Tanaka's research only newspapers (Asahi, Mainichi and Yomiuri) were used as corpus data. Therefore, the results of their studies can be limited to the particular register of Contemporary Japanese.

CHAPTER 3

Present Research: Objectives, Hypothesis, and Methodology

Chapter 3 presents the grammatical classification of adjectives in Japanese, clarifies the objectives of the present research, and introduces the working hypothesis and the methodology to be used for testing the hypothesis in the following chapters.

3.1 Classification of Adjectives in Contemporary Japanese

In Chapter 2 we have discussed that previous studies mostly deal with the differentiation of *gairaigo* and *wago/kango* near synonyms in the case of concrete nouns or a limited sample of abstract nouns. Therefore, there was not enough attention given to the problem of the use of *gairaigo* adjectives and their differentiation from *wago/kango* near synonyms.

First of all, we need to clarify what we will refer to as 'adjective' in the present research, and what morphological and syntactical properties adjectives in the Japanese language posses.

In the present research we will use the term adjective in its broad sense to refer to expressions that represent a certain quality, and can be used to modify nominals in Japanese. Nishiyama (1999) singles out two types of adjectives in Contemporary Japanese: canonical and nominal adjectives, which roughly correspond to *keiyōshi* 'adjective' and *keiyōdōshi* 'adjectival verb' in traditional Japanese grammar (cf. Hashimoto's *Kokugogaku Gairon*). The

category of nominal adjectives is also often referred to as 'adjectival nouns' in Western tradition (e.g., Martin, 1975; Shibatani, 1990). There is also a classification with alternative terminology used for the two abovementioned types of lexical categories: *i-keiyōshi* (i-adjectives corresponding to Nishiyama's canonical adjectives or *keiyōshi*) and *na-keiyōshi* (na-adjectives corresponding to nominal adjectives or *keiyōdōshi*) (e.g., Masuoka and Takubo, 1989). This latter classification is widely used in JFL (Japanese as a Foreign Language) education.

However, the main focus of the present research is not the problem of grammatical differentiation between lexical categories. We are primarily concerned with the problem of differentiation of the use of near synonyms of different origins used to modify nouns. Therefore, to keep the consistency of lexical categories, and taking into consideration that we also consider the process of word borrowing from the donor language (English) into the recipient language (Japanese), we will follow Nishiyama's classification of lexical categories and we will used the term 'adjective'.

As it was mentioned above following Nishiyama, Japanese adjectives can be divided into two types: canonical and nominal. Canonical adjectives, such as *taka-i* 'high' or *hiro-i* 'wide' inflect by themselves, while the nominal adjectival stems such as *shidzuka* 'quiet', *kirei* 'pretty' require the morpheme *-na* to inflect. This classification is based on the differences in the patterns of conjugation: '(w)hat is cross-linguistically categorized as "adjective" falls into two different conjugation patterns in Japanese:'

(1) *Canonical Adjectives (CA)*

a. yama-ga takai

mountain-Nom high.Pres

'The mountain is high.'

b. yama-ga takakatta

mountain-Nom high.Past

'The mountain was high.'

c. miti-ga hiroi

road-Nom wide.Pres

'The road is wide.'

d. miti-ga hirokatta

road-Nom wide.Past

'The road was wide.'

(2) *Nominal Adjectives (NA)*

a. yoru-ga sizuka-da

night-Nom quiet-cop.Pres

'The night is quiet.'

b. yoru-ga sidzuka-datta

night-Nom quiet-cop.Past

'The night was quiet.'

c. hon-ga kirei-da

book-Nom pretty-cop.Pres

'The book is pretty.'

d. hon-ga kirei-datta

book-Nom pretty-cop.Past

'The book was pretty.''

(Nishiyama, 1999: p183)

Morita (2010: p 106) further argues based on Nishiyama's classification that nominal adjectives 'are sub-divided into two types.' Morita presents inflectional patterns of nominal adjectives in the following way:

(3)   *Nominal adjectives*:

	sizuka- 'quiet' (*na*-adjective)	*byooki-* 'sick' (*no*-adjective)
Imperfective form	sizuka-daroo	byooki-daroo
Continuative form	sizuka-de	byooki-de
Predicative form	sizuka-da	byooki-da
Attributive form	sizuka-na	byooki-no
Hypothetical form	sizuka-nara	byooki-nara

(Morita, 2010: p 106)

Morita states that the difference between two types of nominal adjectives like *sidzuka-* and *byōki-* is found in their attributive forms; the morpheme *-na* attaches to the former type, the morpheme *-no* to the latter' (Morita, 2010: p 106).[4]

In Contemporary Japanese *wago* adjectives mostly belong to the canonical type of adjectives (e.g., *taka-i* 'high'), but also in *-na* nominal type (e.g., *shizuka-na* 'quiet'). In contrast, *kango* and *gairaigo* adjectives mostly belong to the nominal types (e.g., *genki-na* 'energetic', *byooki-no* 'sick', *pinku-na* 'pink', *yangu-no* 'young'). Further on in the present research we will be mostly referring to both canonical and nominal adjectives as just adjectives, since the differentiation between two types is irrelevant for the purpose of the present research. However, the difference in the patterns of conjugation will be reflected in the structure of patterns of adjective + noun combinations used for corpus search. This issue will be addressed in greater detail in following

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[4] For the purpose of the consistency of transliteration systems we have changed the transliteration of Japanese words in the references to match the transliteration system used in the present research.

sections.

3.2 Adjective + Noun Combinations as the Object of the Present Research

The present research aims at clarifying the tendencies of the collocation patterns of *gairaigo* adjectives and how those tendencies can help differentiating between the pairs of *wago/kango* vs. *gairaigo* near synonymic adjectives. Therefore, we will be looking not at separate adjectives, but at the adjective + noun combinations, i.e. cases when adjectives are used to modify nouns.

Consequently, in our study we deal not only with single words (nouns or adjectives), but with what we will further refer to as collocations or combinations. Although there are numerous definitions of the term 'collocation', we are taking a very general approach to this term, considering that the co-occurrence of constituting elements to be the main characteristic of a collocation (Poulsen, 2005).

Every language has its unique ways of combining words not only on syntactical and grammatical levels, but also on the semantic one. Out of all the possible word combinations some are more likely to occur and are found more frequently, whereas others are possible only in theory. There are various factors influencing the choice of the collocation partners. In the present study we argue that etymological factor can have the influence on the choice of the collocation partner in adjective + noun combinations. For the purpose of the present research we will call such combinations collocations, since the constituting

elements are found in the immediate closeness to one another in the texts of corpus; i.e. they tend to co-occur or to collocate together in the texts of Contemporary Japanese.

In the present research we will investigate two types of adjective + noun combinations found in Contemporary Japanese. They are exemplified in (1).

(1)   a.   *pinku(-na/-no) ribon*

            pink-NA/NO   ribbon

       b.   *pinku-ribon*

            pink-ribbon

(1a) represents Type 1 collocation, while (1b), Type 2, which are defined as below.

Type 1: Grammatical collocations – the combinations when *gairaigo* adjectives are used to modify nouns in accordance with the grammatical system of Contemporary Japanese, and, therefore, *gairaigo* adjectives as nominal adjectives are joint to the nouns by the use of the morphemes *-no* or *-na*. This type of combinations will be examined in greater detail in Chapter 4 of the present research.

Type 2: Morphological collocations – the combinations when *gairaigo* adjective stems are used to modify nouns directly without the use of any connecting morphemes, or in other words as a part of a compound. We will also refer to this type of adjective + noun combinations as phrase-based

compounds, since it appears to be based on English phrasal combination (e.g., *pink ribbon*). The definition and the characteristics of phrase-based compounds will be introduced in Chapter 5 of the present research. We will demonstrate the difference of this type of compounds from other types, existing in Japanese.

3.3 Research Questions of the Present Study

The previous sections introduced the general notions to be used in the present research. This section formulates the research questions that our study will try to answer.

It has been mentioned that the use of *gairaigo* adjectives has not been thoroughly studied in the previous works. Therefore, we can single out the following research questions:

(1) Is there any tendency in the choice of collocation partners for English-based *gairaigo* adjectives when they are used to modify nouns in Contemporary Japanese, in comparison to their Japanese near synonyms?

(2) If there is a tendency discovered, what kind of tendency is it? Is there any co-relation between the origins of the adjectives and the origins of the nouns they are used with? In other words, is there a tendency for homogeneity or heterogeneity of the origins of words in *gairaigo* adjective + noun collocations in Contemporary Japanese?

(3) Do all the *gairaigo* adjectives follow the discovered tendency? Is there a possibility for classifying *gairaigo* adjectives in accordance with their collocation preferences?

To our knowledge, the above mentioned issues have not been previously addressed; therefore, we will try to find a way to answer the formulated research questions. The following sections present our working hypothesis and the methodology used to investigate the problem.

3.4 Working Hypothesis and the Extension of Loveday's Hypothesis of Referential Foreign vs. Native Dichotomy

First of all we will reconsider Loveday's hypothesis of Referetial Foreign vs. Native Dichotomy introduced in Chapter 2. We suggest presenting Loveday's hypothesis schematically in the following way in Figure 1.

Foreign object	Native object
Gairaigo noun	*Wago/kango* word
(*gairaigo* near synonym)	(*wago/kango* near synonym)
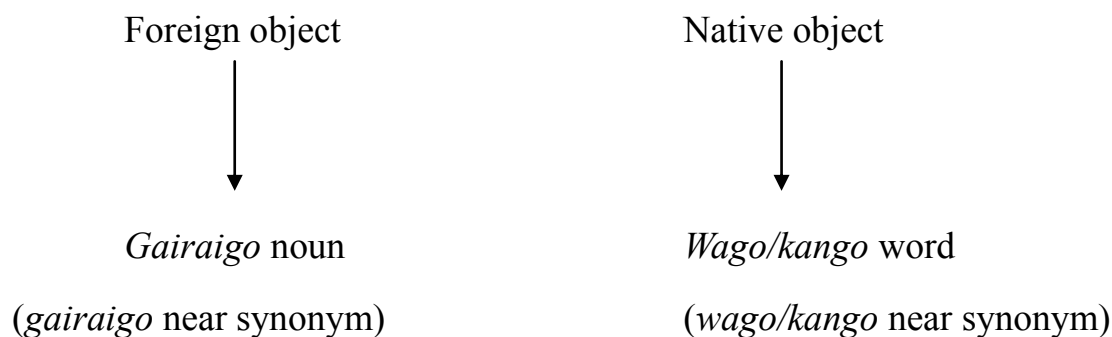
Figure 1 Loveday's Hypothesis of Referential Foreign vs. Native Dichotomy

However, the differentiation at the level of adjectives is not that clear. We assume that the same way as *gairaigo* nouns are used to refer to foreign objects or phenomena (Loveday's hypothesis), *gairaigo* adjectives are used for the description of qualities foreign objects or phenomena (the extension of

Loveday's hypothesis). Therefore, *gairaigo* adjectives are more likely to modify and collocate with *gairaigo* nouns rather than *wago/kango* nouns. For example, *buraun no jaketto* 'brown jacket' would present a better collocation than *buraun no haori* 'brown haori'[5]. We present the extension of Loveday's hypothesis in the following Figure 2.

Gairaigo adjectives   ←——————→   *Gairaigo* Nouns

Properties   ←——————→   Foreign Objects
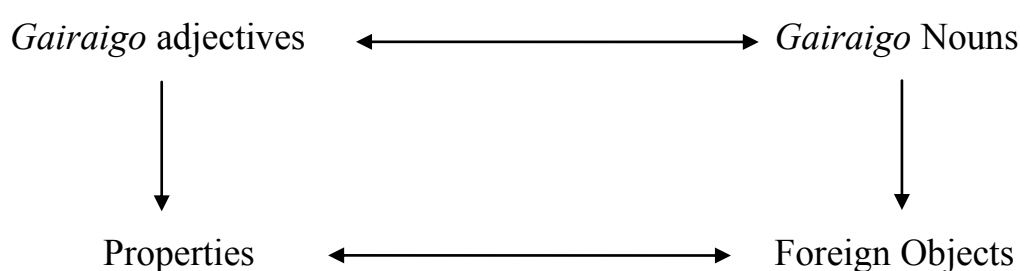
Figure 2 Extension of Loveday's Hypothesis to the Level of *Gairaigo* Adjectives

In other words, we hypothesize that the Japanese language has a tendency for homogeneity of the origin for the members of collocations in case of *gairaigo* adjectives, i.e. *gairaigo* adjectives tend to be used more often with *gairaigo* nouns, rather than *wago/kango* nouns. We call this hypothesis Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives (HCHGA).

This tendency for homogeneity is expressed on two levels: linguistic (the etymological connection between the words, i.e. the connection between the origin of words), and extra-linguistic (the connection between the origin of referents and the words). In the present research we will investigate only the

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[5] Haori is a traditional Japanese jacket-like clothing

linguistic level of the abovementioned homogeneity.

The important difference between Loveday's original hypothesis and our hypothesis is that the former one refers to the difference in the use of single words (concrete nouns), while the later one considers combinations of adjectives and nouns. Therefore, our hypothesis deals with more general and higher linguistic levels.

We will test Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives (HCHGA) in the following chapters on different groups of *gairaigo* adjectives.

3.5 Methodology

The main method of the present research is corpus-based analysis. The corpus used for the study is Balanced Corpus of Contemporary Written Japanese (BCCWJ). This corpus will be described in greater detail in the following section 3.6.

As it has been mentioned in section 3.1 in the present research we are focused on combinations of adjectives and nouns. In section 3.2 we have described two types of adjective + noun combinations that are the focus of our study. Therefore, in different chapters we will investigate two different types of adjective + noun combinations by using BCCWJ.

In Chapter 4 our objective is to find out if *gairaigo* adjectives have a tendency to be used with *gairaigo* nouns, rather than *wago/kango* nouns in grammatical collocations. We will compare the patterns of the use of *gairaigo*

adjectives and corresponding *wago/kango* near synonymic adjectives to determine the difference in their use.

Therefore, in the process of the corpus search we will investigate several patterns of the attributive use of *gairaigo* and *wago/kango* adjectives described in section 3.1. Thus, *gairaigo* adjectives will require the use of *-no/-na* morphemes to be used in grammatical collocations, whereas among *wago/kango* adjectives some require the use of *-no/-na* morphemes (nominal adjectives), and those ending in *-i* do not (canonical adjectives).

In Chapter 4 to test the differences of the types of nouns following *gairaigo* and *wago/kango* adjectives in grammatical collocations BCCWJ was used to examine the following collocation patterns:

(1) *Gairaigo* adjective (with *-no/-na*) + *gairaigo* noun

(2) *Gairaigo* adjective (with *-no/-na*) + *wago/kango* noun

(3) *Wago/kango* adjectives (with *-no/-na/-i*) + *gairaigo* noun

(4) *Wago/kango* adjectives (with *-no/-na /-i*) + *wago/kango* noun

In Chapter 5 we will address the problem of the use of *gairaigo* adjectives as a part of compound words, or, what we call in the present research, morphological collocations. The objective of Chapter 5 is to determine which type of collocations – grammatical or morphological (with or without *-no/-na* morphemes) – is more frequent in Contemporary Japanese. Therefore, we will search BCWWJ to determine the use of *gairaigo* for the following patterns:

Gairaigo adjective (with *-no/-na*) + *gairaigo* noun

Gairaigo adjective (with *-no/-na*) + *wago/kango* noun

Gairaigo adjective (without *-no/-na*) + *gairaigo* noun

Gairaigo adjective (without *-no/-na*) + *wago/kango* noun

The results of the corpus search for both sets of patterns are further analyzed with the help of statistic methods (Chi-square test and Binomial test) to determine if there are statistically relevant results that can support our hypothesis.

3.6 Overview of Balanced Corpus of Contemporary Written Japanese

In the present research we will use one of the components of KOTONOHA corpus developed by National Institute for Japanese Language and Linguistics (often abbreviated as NINJAL). We will base our study on a balanced corpus of contemporary written Japanese (further often referred to as BCCWJ) containing one hundred million words. According to NINJAL '(t)he compilation of BCCWJ started in 2006 as a five-year project, and is supported partly by a Grant-in-Aid for Scientific Research on Priority Area from MEXT (Japanese ministry of education): Japanese Corpus.'[6]

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[6] The information about BCCWJ development and its structure are based on the official information retrieved from http://www.ninjal.ac.jp/english/products/bccwj/

Figure 3 demonstrates the structure of BCCWJ. It consists of three subcorpora: the Publication Subcorpus, the Library Subcopus and the Special-purpose subcorpus.

PUBLICATION SUBCORPUS Books,magazines, and newspapers published during 2001-2005 **35 million words**	LIBRARY SUBCORPUS Books catalogued at more than 13 publiclibraries in Tokyo area, and published after 1985 **30 million words**
SPECIAL-PURPOSE SUBCORPUS Whitepaper text,Internet text,Diet minutes,Best selling books,etc. **35 million words**	
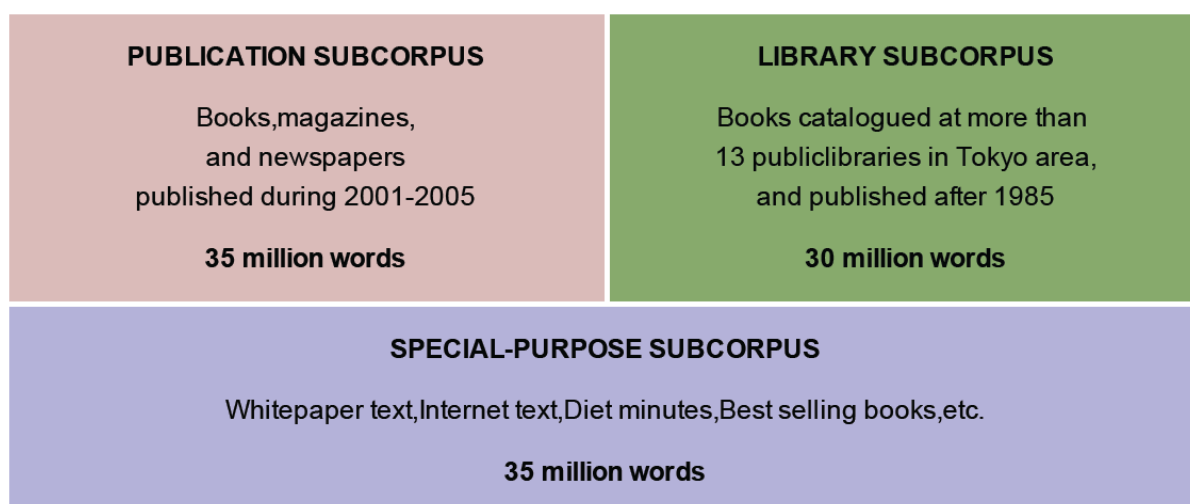
Figure 3 Structure of the BCCWJ[7]

As shown in Figure 3, the samples of each Subcorpus are extracted from various sources. The samples of Publication Subcorpus are taken 'randomly from the population of all books, magazines, and major newspapers published in the years 2001-2005.' The Library Subcorpus contains 'all books that are catalogued at more than 13 metropolitan libraries in Tokyo.' The Special-purpose Subcorpus includes 'series of mutually unrelated mini corpora that are required for specific research purposes of the NINJAL research groups. The mini corpora include governmental white papers, textbooks, laws,

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[7] Figure 3 illustrating the structure of BCCWJ is taken from the official webpage of BCCWJ development http://www.ninjal.ac.jp/english/products/bccwj/

bestselling books, and text from the Internet (provided by the courtesy of Yahoo! Japan Inc). Each of these mini corpora contains text of several million words.'

There are several search systems that can be applied for data gathering from BCCWJ: "*Shonagon*", "*Chunagon*" and NINJAL-LWP (LagoWordProfiler) for BCCWJ (abbreviated as NLB). In the present research we used "*Chunagon*" (a system for more complex searches which is also publicly available, but on request).

The choice of BCCWJ is motivated by the fact that it contains one of the largest and balanced samples of Contemporary Japanese. Thus, we can consider that the results of the research based on BCCWJ are likely to be less biased towards some particular style or register. The only limitation of BCCWJ is the fact that it is the corpus of written Japanese; therefore, the results for spoken Japanese can be different.

CHAPTER 4

Testing of Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives on Two Case Studies

This chapter describes the procedure of data gathering, testing of Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives (HCHGA), and analysis of collocation preferences for two groups of *gairaigo* adjectives: loanword color terms and some *gairaigo* adjectives referring to basic physical properties.

4.1 Choice of *Gairaigo* Adjectives for Case Studies

In Chapter 3 we have introduced and explained the Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives (HCHGA). To demonstrate the tendencies of collocation patterns for *gairaigo* adjectives we will compare them with the collocation patterns of near synonymic *wago/kango* adjectives.[8] Therefore, for the case study we need to choose *gairaigo* adjectives that:

(1) Have corresponding *wago/kango* adjectives;
(2) Have a long history of use in Japanese
(3) Have relatively frequent use.

Therefore, we choose two following groups of *gairaigo* adjectives

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[8] The methodology and results of testing the collocation preferences of *gairaigo* adjectives based on BCCWJ were previously presented in Bordiovskaya (2012a), Bordilovskaya (2012b), and Bordilovskya (2013)

to test HCHGA:

Case Study 1: Adjectives referring to color terms:

howaito(-no/-na) 'white' vs. *shiro(-i/-no)* 'white';

burakku(-no/-na) 'black' vs. *kuro(-i/-no)* 'black';

reddo(-no/-na) 'red' vs. *aka(-i/-no)* 'red';

ierō(-no/-na) 'yellow' vs. *kiiro(-i/-no)* 'yellow',

buraun(-no/-na) 'brown' vs. *chairo(-i/-no)* 'brown',

pāpuru (-no/-na) 'purple' vs. *murasakiiro (-no)* 'purple',

pinku(-no/-na) 'pink' vs. *momoiro(-no)* 'pink,

gurē (-no/-na) 'grey' vs. *haiiro (-no)* 'grey'.

Case Study 2: Adjectives referring to Basic physical properties:

hotto(-no/-na) 'hot' vs. *atsu(-i)* 'hot';

yangu(-no/-na) 'young' vs. *waka(-i)* 'young';

rongu(-no/-na) 'long' vs. *naga(-i)* 'long';

shōto (-no/-na) 'short' vs. *mijika(-i)* 'short'.

All the adjectives tested in the Case Study 1 and Case study 2, have corresponding *wago/kango* near synonyms. In addition all the *gairaigo* adjectives were borrowed from English into Japanese during Meiji period, and, thus, all the case study *gairaigo* adjectives have a long history of the assimilation to the Japanese language to find their semantic and grammatical niche. Moreover, all the selected *gairaigo* adjectives are frequently used in Contemporary Japanese, both spoken and written. Therefore, we consider the

choice of the *gairaigo* adjectives for testing our hypothesis appropriate and motivated.

In the following sections, first of all, we will test HCHGA on a set of adjectives referring to color terms. Then, we will test HCHGA on a set of adjectives referring to physical properties, to determine if our findings are unique qualities of *gairaigo* color term adjectives, in particular, or *gairaigo* adjectives in general.

4.2 *Gairaigo* and Japanese Color Term Nomenclature

There are various groups of adjectives in any language, but one of the central places among the adjectives is occupied by the color terms. The Japanese language is not an exception. Therefore, the Japanese color nomenclature, and the influx of *gairaigo* adjectives corresponding to basic color terms and competing with *wago/kango* near synonymic adjectives is not a new topic of study (Stanlaw, 1997).

Stanlaw (1997) stated that "the Japanese colour lexicon actually consists of two sets of mutually exclusive terms, one of native origin, the other borrowed from English." His research demonstrates that some of Japanese *wago/kango* color term adjectives (such as *momoiro* 'pink', *daidaiiro* 'orange') are replaced by English-based loanword adjectives (*pinku* 'pink' and *orenji* 'orange', respectively). He also suggested that the replacement took place "in

reverse order to the Berlin and Kay evolutionary sequence"[9] (Stanlaw, 1997).

The major finding by Stanlaw is that in Contemporary Japanese some of the loanword color adjectives are more salient in the minds of the Japanese than native color adjectives, where the substitution of native color terms for loanwords develops in a certain order.

The shortcoming of Stanlaw's study is that he did not discuss any semantic and stylistic differences between native and loanword color adjectives, and constraints on *gairaigo* color terms use.

Considering the importance of color term adjectives and absence of any explicated rules of application, we will test our Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives, and focus our case study on illuminating the regularities which can provide a hint for such explicit rules.

4.2.1 The Objective of the Case Study

Our objective is to test the Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives (HCHGA) on a group of color term adjectives in Contemporary Japanese. We suggest that *gairaigo* color adjectives are more often followed by *gairaigo* nouns, thus, exhibiting a tendency for homogeneity of the origins of the collocation elements. On the other hand, as additional results we can expect that *wago/kango* are either more often followed by *wago/kango* nouns, or do not express any particular preference for the origin of

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[9] Berlin and Kay (1991) hypothesized and showed the evidence that as languages evolve they develop new basic color terms in a strict chronological sequence.

nouns they are used with.

4.2.2 Method and Materials: Corpus-based analysis

The number of *wago/kango* vs. *gairaigo* near synonymic pairs is considerably numerous. Therefore, to verify our hypothesis we need to reduce the number of pairs for the abovementioned corpus analysis test. Since we are interested in the presence of correlation between adjectives and nouns they modify, the object of research is *gairaigo* adjectives derived from English adjectives and Japanese words corresponding to them. As it has been mentioned in the section 4.1 of this Chapter 4, the case study group consists of eight frequently used *gairaigo* adjectives used as color terms in Contemporary Japanese: *howaito*(*-no/-na*) 'white', *burakku*(*-no/-na*) 'black', *reddo*(*-no/-na*) 'red', *ierō*(*-no/-na*) 'yellow', *buraun*(*-no/-na*) 'brown', *pāpuru*(*-no/-na*) 'purple', *pinku*(*-no/-na*) 'pink', *gurē*(*-no/-na*) 'grey'. They correspond to (Sino-) Japanese color terms *shiro(-i/-no)* 'white', *kuro(-i/-no)* 'black', *aka(-i/-no)* 'red', *kiiro(-i/-no)* 'yellow', *chairo(-i/-no)* 'brown', *murasakiiro(-no)* 'purple', *momoiro(-no)* 'peach pink', *haiiro(-no)* 'grey', respectively. We have excluded *gairaigo* color terms have a clear-cut correspondence to *wago/kango* near synonyms, that is why *gurīn(-no/-na)* 'green' and *burū(-no/-na)* 'blue' were excluded from the study as their correspondence to native color terms (*ao(-i)* and *midoriiro(-no)*) is ambiguous.

Thus, the object of research is a group of eight *gairaigo* adjectives: *howaito*(*-no/-na*), *burakku*(*-no/-na*), *reddo*(*-no/-na*), *ierō*(*-no/-na*),

buraun(*-no/-na*)*, pāpuru*(*-no/-na*)*, pinku*(*-no/-na*)*, gurē*(*-no/-na*) corresponding to color categories WHITE, BLACK, RED, YELLOW, BROWN, PURPLE, PINK and GREY, respectively.

The choice of the case study group is motivated by following reasons:

- all of the abovementioned *gairaigo* adjectives have long-term assimilation to the Japanese language (since Meiji period, more than 100 years);

- case study loanword adjectives referring to color terms belong basic vocabulary, and, thus, they can give a wider outlook at the structure of Contemporary Japanese vocabulary.

The corpus-based analysis of *gairaigo* collocation patterns is the main method of the analysis in the present case study. The corpus used for data collection is KOTONOHA BCCWJ corpus (Balanced Corpus of Contemporary Written Japanese) available on-line. "*Chunagon*" search system was used to conduct the corpus search since it allows of more elaborate patterns of filtering the results.

KOTONOHA BCCWJ corpus was searched to compare the frequencies for four following collocation patterns following the methodology described in Chapter 3. Thus, we investigate the following structures:

(1)   *Gairaigo* adjective (with *-no/-na*) + *gairaigo* noun

(2)   *Gairaigo* adjective (with *-no/-na*) + *wago/kango* noun

(3)   *Wago/kango* adjectives (with *-no/-na/-i*)[10] + *gairaigo* noun

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[10] We have described two types of Japanese adjectives in the previous sections. Thus, we use brackets to indicate that we will include the na/no morpheme in the patterns for investigation only when necessary, i.e. in case *wago/kango* near synonymic adjectives are nominal adjectives.

(4)   *Wago/kango* adjectives (with *-no/-na /-i*) + *wago/kango* noun

Short Unit Search (*tantan'i-kensaku*) was used for both *gairaigo* and *wago/kango* adjectives. However, the procedure was slightly different, since *wago/kango* adjectives can be written with both *kanji* and *hiragana,* and adjectives with *–i* and those with *–na/-no* require different treatment.

Adjectives ending in *-i* (some of *wago/kango* adjectives) were examined as follows:

1. Firstly, Orthographic Form (*shojikei-shutsugenkei*) was selected and *wago/kango* adjective was inputted as a key in its *kanji* form, e.g. 白い 'white'.

2. Next, a collocation condition on the context following the key was selected to be a noun within 1 unit from the key. The context before and after the key was 10 units each.

3. Finally, the number of tokens of adjective+noun collocations was calculated, and the collocations of adjectives with the meaning different from the color term, e.g. *shiroi me de miru* 'look at someone with disapproval', were eliminated.

4. Then, the procedure described above was repeated, with the *hiragana* form of the same *wago/kango* adjective examined, e.g. しろい 'white'.

5. In the end all tokens corresponding to the search conditions (origin of the nouns following the adjective: *wago/kango* or *gairaigo*) were summarized.

Adjectives requiring *-na/-no* connecting morphemes to modify nouns (some *wago/kango* adjectives and all *gairaigo* adjectives) were examined as

follows:

1. Orthographic Form (*shojikei-shutsugenkei*) was selected and *gairaigo* adjective was inputted as a key in it*s katakana* form, e.g. ホワイト 'white'.

2. Next, a collocation condition on the context following the key within 1 unit from the key was also selected as Orthographic Form (*shojikei-shutsugenkei*) and a connecting morpheme in *hiragana* was inputted, e.g. の (*-no*).

3. After that another collocation condition on the context following the key was selected to be a noun within 2 units from the key. The context before and after the key was 10 units each.

4. Finally, the number of tokens of adjective+noun collocations was calculated, and the collocations of adjectives with the meaning different from the color term, e.g. ホワイトの意見 'White's opinion', were eliminated.

5. Then the procedure was repeated in case of な (*-na*) connecting morpheme.

6. In the end all tokens corresponding to the search conditions (origin of the nouns following the adjective: *wago/kango* or *gairaigo*) were summarized.

It has been previously mentioned that the collocations when case study *gairaigo* adjectives were referring to a person's name (like in *howaito no iken* 'the opinion of Mr. White') or other irrelevant examples were eliminated from the search results. The decisions about the elimination of combinations from

the count were based on the analysis of the context the adjectives under study were used in.

4.2.3 Results and Data Analysis

Collocation Frequency Data.   The collocation frequency data for each color term are presented in Tables 1 through 8[11]. The main means for statistic analysis is the Chi-square test of independence of categorical data and the Binomial test.

Howaito(-no/-na) **vs.** ***shiro(-i/-no)*** **pair.** The results on *howaito*(*-no/-na*) and *shiro*(*-i/-no*) collocations are presented in Table 1.

Table 1: *Howaito* (*-no/-na*) vs. *shiro(-i/-no)* collocations

Adjective	*Gairaigo* nouns (%)	*Wago/Kango* nouns (%)	Total
Howaito(-no/-na)	23 (77%)	7 (23%)	30 (100%)
Shiro(-i/-no)	1254 (18%)	5797 (82%)	7051 (100%)
Total	1277	5804	7081

[11] The search of BCCWJ was conducted during 2012-2013, due to the process of maintainance the contents of the BCCWJ could have been sligly edited. Therefore, the current search of BCCWJ can present slightly different results. It is also important to take into consideration the search tool used applied since the results of Shonagon and NINJAL-LWP for BCCWJ may slightly vary.

The Chi-square test of independence of categorical data has been applied to the data in Table 1. The Chi-square test revealed statistically significant dependence between origin of adjectives and origin of nouns (χ^2(1, 7081) = 66.14, p < 0.001).

The Binomial test for pairs (*howaito* with (*-no/-na*) + *gairaigo* noun) vs. (*howaito* with (*-no/-na*) + *wago/kango* noun) reveals significant difference in frequencies between the use of *howaito*(*-no/-na*) with *gairaigo* nouns and *wago/kango* nouns (23 to 7 respectively) (p<0.05). Therefore, for *howaito*(*-no/-na*) there is an obvious preference to be used to modify *gairaigo* nouns.

Thus, in comparison with *shiro*(*-i/-no*), *howaito* (*-no/-na*) is more inclined to collocate with *gairaigo* nouns, rather than *wago/kango* nouns.

The examples of collocations of *howaito* (*-no/-na*) with *gairaigo* nouns include: *howaito no uesutan būtsu* 'white western boots', *howaito no T-shatsu* 'white Tshirt', etc. The examples of collocations of *howaito* (*-no/-na*) with *wago/kango* nouns include *howaito no kutsu* 'white shoes' and *howaito no seihin* 'white products', etc.

***Burakku(-no/-na)* vs. *kuro(-i/-no)* pair.** The results for *burakku*(*-no/-na*) and *kuro*(*-i/-no*) collocations are presented in Table 2.

Table 2: *Burakku* (*-no/-na*) vs. *kuro*(*-i/-no*) collocations

Adjective	*Gairaigo* nouns (%)	*Wago/Kango* nouns (%)	Total
Burakku(*-no/-na*)	14 (70%)	6 (30%)	20 (100%)
Kuro(*-i/-no*)	1085 (25%)	3275 (75%)	4360(100%)
Total	1099	3281	4380

The Chi-square test of independence of categorical data has been applied to the data in Table 2. The Chi-square test revealed statistically significant dependence between the origin of adjectives and the origin of nouns (χ^2(1, 4382) = 19.22, p < 0.001). The Binomial test for pair (*burakku* with (*-no/-na*) + *gairaigo* noun) vs. (*burakku* with (*-no/-na*) + *wago/kango* noun) reveals no significant difference in frequencies (p=0.115>0.05).

Thus, there is statistical evidence, that in comparison with *kuro*(*-i/-no*), *burakku*(*-no/-na*) is more inclined to collocate with *gairaigo* nouns, rather than *wago/kango* nouns.

The examples of collocations of *burakku*(*-no/-na*) with *gairaigo* nouns include: *burakku no bodi* 'black body' and *burakku no inku* 'black ink', etc. The examples of collocations of *burakku*(*-no/-na*) with *wago/kango* nouns include: *burakku no kiji* 'black material', *burakku no toryō* 'black paint', etc.

***Reddo*(*-no/-na*) vs. *aka*(*-i/-no*) pair.** The result for *reddo*(*-no/-na*) vs. *aka*(*-i/-no*) collocations are presented in Table 3.

Table 3: *Reddo(-no/-na)* vs. *aka* (*-i/-no*) collocations

Adjective	*Gairaigo* nouns (%)	*Wago/Kango* nouns (%)	Total
Reddo(-no/-na)	2 (50%)	2 (50%)	4 (100%)
Aka(*-i/-no*)	751(21%)	2872 (79%)	3623 (100%)
Total	753	2874	3627

The Chi-square test of independence of categorical data has been applied to the data in Table 3. The Chi-square test did not reveal statistically significant dependence between the origin of adjectives and the origin of nouns (χ^2(1, 3627) = 0.11 p > 0.001). In this case, the sample size for pairs including *reddo*(*-no/-na*) is only 4 occurrences. Therefore, due to small sample size the proper analysis of pairs (*reddo* with (*-no/-na*) + *gairaigo* nouns) vs. (*reddo* with (*-no/-na*) + *wago/kango* nouns) cannot be conducted.

The examples of collocations of *reddo*(*-no/-na*) with *gairaigo* nouns include: *reddo no beruto* 'red belt', *reddo no pāru* 'red pearl'. The examples of collocations of *reddo*(*-no/-na*) with *wago/kango* nouns include: *reddo no kawa* 'red leather', *reddo no madowaku* 'red window frame'.

Ierō (-no/-na) vs. kiiro(-i/-no) pair. Next, we consider *ierō* (*-no/-na*) vs. *kiiro*(*-i/-no*) collocation data. The results are presented in Table 4.

Table 4: *Ierō* (*-no/-na*) vs. *kiiro*(*-i/-no*) collocations

Adjective	*Gairaigo* nouns (%)	*Wago/Kango* nouns (%)	Total
Ierō(*-no/-na*)	16 (67%)	8 (33%)	24 (100%)
Kiiro(*-i/-no*)	354 (24%)	1139 (76%)	1493(100%)
Total	370	1147	1517

The Chi-square test of independence of categorical data has been applied to the data in Table 4. The Chi-square test revealed statistically significant dependence between origin of adjectives and origin of nouns (χ^2(1, 1517) = 21.36, p < 0.001). The Binomial test for pair (*ierō* with (*-no/-na*) + *gairaigo* nouns) vs. (*ierō* with (*-no/-na*) + *wago/kango* nouns) reveals no significant difference in frequencies (p=0.152>0.05).

Therefore, in comparison with *kiiro*(*-i/-no*), *ierō*(*-no/-na*) is more inclined to collocate with *gairaigo* nouns, rather than *wago/kango* nouns.

The examples of collocations of *ierō*(*-no/-na*) with *gairaigo* nouns include: *ierō no wampīsu* 'yellow dress', *ierō no ribon* 'yellow ribbon', etc. The examples of collocations of *ierō*(*-no/-na*) with *wago/kango* nouns include: *ierō no reidzōko* 'yellow fridge', *ierō no fuku* 'yellow clothes', etc.

Buraun(*-no/-na*) vs. chairo(*-i/-no*) pair. The results for *buraun*(*-no/-na*) vs. *chairo*(*-i/-no*) collocations are presented in Table 5.

Table 5: *Buraun*(*-no/-na*) vs. *chairo*(*-i/-no*) collocations

Adjective	*Gairaigo* nouns (%)	*Wago/Kango* nouns (%)	Total
Buraun(*-no/-na*)	26 (65%)	14 (35%)	40 (100%)
Chairo(*-i/-no*)	112 (21%)	426 (79%)	538(100%)
Total	138	440	578

The Chi-square test of independence of categorical data has been applied to the data in Table 5. The Chi-square test revealed statistically significant dependence between origin of adjectives and origin of nouns (χ^2(1, 578) = 37.59, p < 0.001).   The Binomial test for pair (*buraun* with (*-no/-na*) + *gairaigo* nouns) vs. (*buraun* with (*-no/-na*) + *wago/kango* nouns) reveals no significant difference in frequencies (p=0.081>0.05).

Thus, in comparison with *chairo*(*-i/-no*), *buraun(-no/-na)* is more inclined to collocate with *gairaigo* nouns, rather than *wago/kango* nouns.

The examples of collocations of *buraun*(*-no/-na*) with *gairaigo* nouns include: *buraun no messhubaggu* 'brown mesh bag', *buraun no mafurā* 'brown scarf', etc. The examples of collocations of *buraun* (*-no/-na*) with *wago/kango* nouns include: *buraun no kami* 'brown hair', *buraun no kutsu* 'brown shoes', etc.

Pāpuru(*-no/-na*) vs. murasakiiro(*-no*) pair. Table 6 presents the results for *pāpuru*(*-no/-na*) vs. *murasakiiro*(*-no*) collocations.

Table 6: *Pāpuru*(-*no/-na*) vs. *murasakiiro*(-*no*) collocations

Adjective	*Gairaigo* nouns (%)	*Wago/Kango* nouns (%)	Total
Pāpuru(-*no/-na*)	12 (71%)	5 (29%)	17 (100%)
Murasakiiro(-*no*)	102 (14%)	646 (86%)	748(100%)
Total	114	651	765

The Chi-square test of independence of categorical data has been applied to the data in Table 6. The Chi-square test revealed statistically significant dependence between origin of adjectives and origin of nouns (χ^2(1, 765) = 38.14, p < 0.001). The Binomial test for pair (*pāpuru* with (-*no/-na*) + *gairaigo* nouns) vs. (*pāpuru* with (-*no/-na*) + *wago/kango* nouns) reveals no significant difference in frequencies (p=0.143>0.05).

Thus, in comparison with *murasakiiro*(-*no*), *pāpuru*(-*no/-na*) is more inclined to collocate with *gairaigo* nouns, rather than *wago/kango* nouns.

The examples of collocations of *pāpuru*(-*no/-na*) with *gairaigo* nouns include: *pāpuru no bara* 'purple rose', *pāpuru no jaketto* 'purple jacket', etc. The examples of collocations of *pāpuru*(-*no/-na*) with *wago/kango* nouns include: *pāpuru no iro* 'purple color', *pāpuru no yōki* 'purple container', etc.

Gurē (-*no/-na*) vs. haiiro(-*no*) pair. The search results for *gurē* (-*no/-na*) vs. *haiiro*(-*no*) collocations are presented in Table 7.

Table 7: *Gurē*(*-no/-na*) vs. *haiiro*(*-no*)   collocations

Adjective	*Gairaigo* nouns (%)	*Wago/Kango* nouns (%)	Total
Gurē(*-no/-na*)	139 (58%)	102 (42%)	241 (100%)
Haiiro(*-no*)	66 (11%)	535 (89%)	601 (100%)
Total	205	637	842

The Chi-square test of independence of categorical data has been applied to the data in Table 7. The Chi-square test revealed statistically significant dependence between origin of adjectives and origin of nouns (χ^2(1, 842) = 201.104, p < 0.001). The Binomial test for pairs (*gurē* with (*-no/-na*) + *gairaigo* nouns) vs. (*gurē* with (*-no/-na*) + *wago/kango* nouns) reveals significant difference in frequencies (one-tail p=0.01<0.05).

Therefore, *gurē*(*-no/-na*) is more inclined to collocate with *gairaigo* nouns, rather than *wago/kango* nouns in comparison with *haiiro* (*-no*).

The examples of collocations of *gurē*(*-no/-na*) with *gairaigo* nouns include: *gurē no sūtsu* 'grey suit', *gurē no pantsu* 'grey pants', etc. The examples of collocations of *gurē*(*-no/-na*) with *wago/kango* nouns include: *gurē no seifuku* 'grey uniform', *gurē no bōshi* 'grey hat', etc.

Pinku(*-no/-na*) vs. momoiro(*-no*) pair. Finally, the results for *pinku*(*-no/-na*) vs. *momoiro*(*-no*) collocations are presented in Table 8.

Table 8: *Pinku* (*-no/-na*) vs. *momoiro*(*-no*) collocations

Adjective	*Gairaigo* nouns (%)	*Wago/Kango* nouns (%)	Total
Pinku(*-no/-na*)	347 (45%)	351 (55%)	698 (100%)
Momoiro(*-no*)	15 (21%)	56 (79%)	71 (100%)
Total	362	407	769

The Chi-square test of independence of categorical data has been applied to the data in Table 8. The Chi-square test revealed statistically significant dependence between the categorical data (χ^2(1, 769) = 20.00, p < 0.001). The Binomial test for pairs (*pinku with* (*-no/-na*) + *gairaigo* nouns) vs. (*pinku with* (*-no/-na*) + *wago/kango* nouns) does not reveal any significant difference in frequencies (one-tail p=0.454>0.05).

The results for *pinku*(*-no/-na*) demonstrate the exception from other *gairaigo* color term adjectives, since *pinku*(*-no/-na*) is insignificantly more often found in collocations with *wago/kango* nouns, rather than *gairaigo* nouns.

The examples of collocations of *pinku*(*-no/-na*) with *gairaigo* nouns include: *pinku no ribon* 'pink ribbon', *pinku no waishatsu* 'pink shirt', etc. The examples of collocations of *pinku with* (*-no/-na*) with *wago/kango* nouns include: *pinku no kuchibeni* 'pink lipstick', *pinku no hanabira* 'pink petals', etc.

4.2.4 Discussion and Conclusion

Testing of the Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives (HCHGA) on a group of *gairaigo* color terms demonstrated that there is a clear tendency in the structure of collocations: collocations when *gairaigo* adjectives are modifying *garaigo* nouns are more frequent than collocations when *gairaigo* adjectives are modifying *wago/kango* nouns. Thus, we can conclude that Contemporary Japanese has a preference for homogeneity of origins of elements in grammatical collocations when *gairaigo* adjectives are used to modify nouns.

Moreover, our statistical analysis also shows that *wago/kango* adjectives are more often followed by *wago/kango* nouns, rather than *gairaigo* nouns. Thus, we can suggest that there can be a tendency for homogeneity of origin for the collocations of *wago/kango* adjectives as well. In all eight cases considered, we have provided statistical evidence for such bias to exist for *wago/kango* adjectives. However, these results can be also explained by the fact that there are more *wago/kango* nouns than *gairaigo* nouns in Contemporary Japanese [12], and, therefore, the possibility of *wago/kango* adjective + *wago/kango* noun collocation is more probable, than the possibility of *wago/kango* adjective + *gairaigo* noun collocation. Nevertheless, determining the preference for homogeneity of origin for *wago/kango* adjectives is not the objective of our research, so we leave these results open for various interpretations at this stage.

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[12] It has been mentioned in previous chapters that *gairaigo* comprise only about 10% of the Japanese vocabulary.

There were two exceptions detected in the process of testing of the HCHGA in case of *gairaigo* color term adjectives.

The first exception is *reddo*(*-no/-na*). In the case of *reddo*(*-no/-na*), the sample size was too small, therefore, the deviation from the HCHGA pattern can be explained by the small sample size, and this problem can be resolved by the increase of data set.

Another exception from the HCHGA was the use of *pinku*(*-no/-na*), which demonstrated almost even distribution in the use between *gairaigo* and *wago/kango* nouns. However, there are several reasons motivating the difference of *pinku*(*-no/-na*) from other color terms. First of all, the native near synonym of *pinku*(*-no/-na*) – *momoiro*(*-no*) – has long-termed sexual connotation, and is often used not in its color meaning. Therefore, initially *pinku*(*-no/-na*) was used as a neutral substitute to indicate pinkish colors without the sexual connotation. Our results demonstrate that the frequency of the use of *pinku*(*-no/-na*) is higher than the one of *momoiro*(*-no*), and this is in coherence with the fact that *pinku*(*-no/-na*) has become to be used more often in Contemporary Japanese. However, in the course of semantic assimilation *pinku*(*-no/-na*) has also developed the sexual connotation to its meaning due to the influence of *momoiro*(*-no*). Secondly, it is important to keep in mind that *gairaigo* (of all the parts of speech) comprise about 10% of all the Japanese lexicon, therefore, almost even distribution of the use *gairaigo* nouns and *wago/kango* nouns with *pinku*(*-no/-na*) can be interpreted as partially supporting HCHGA, since the difference between the values is not statistically significant, although the total number of nouns of *gairaigo* nouns is

considerably smaller than the total number of *wago/kango* nouns.

To sum up, in general, for six pairs out of eight, except for *reddo* (*-no/-na*) vs. *aka*(*-i/-no*) *and pinku*(*-no/-na*) *vs. momoiro*(*-no*), we have found statistical evidence for dependencies in categorical data. Therefore, we consider that this volume of evidence is enough to support the Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives, derived from original Loveday's Foreign vs. Native Dichotomy in Referents (Loveday, 1996).

On the other hand, our hypothesis refers to the structure consisting of two words, i.e., adjective + noun, while Loveday's research (Loveday, 1996) dealt only with concrete *gairaigo* and *wago/kango* nouns referring either to foreign or native objects respectively. Thus, the case study of color terms near synonymic adjectives has illustrated the existence of the Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives at the high linguistic level, i.e., syntactical level of the collocations of *gairaigo* adjectives.

4.3 Further Testing of HCHGA on Other *Gairaigo* Adjectives

This section presents data on the further testing of HCHGA on a set *gairaigo* adjectives different from color term adjectives.

4.3.1 Objectives and Methodology

The previous section demonstrates the results of corpus search confirming the existence of Homogeneous Collocation Hypothesis for

Gairaigo Adjectives (HCHGA) and its influence on the collocating tendencies of *gairaigo* color term adjectives. Thus, we have demonstrated how HCHGA is realized for a specific group of *gairaigo* adjectives.

In this section we present data on *gairaigo* adjectives other than color terms. As it was explained in section 4.1 of the current chapter we will test HCHGA on a group of 4 pairs of frequently used *gairaigo* and *wago/kango* near synonymic adjectives: *hotto(-no/-na)* 'hot' vs. *atsu(-i)* 'hot', *yangu(-no/-na)* 'young' vs. *waka(-i)* 'young', *rongu(-no/-na)* 'long' vs. *naga(-i)* 'long', *shōto(-no/-na)* 'short' vs. *mijika(-i)* 'short'. Some of the case study adjectives have more than one meaning, but we will focus on the primarily physical meanings of the adjectives under study, based on the context presented in the corpus. Thus, for *hotto(-no/-na)* vs. *atsu(-i)* pair we will count the collocations with meaning '(high) temperature', for *yangu(-no/-na)* vs. *waka(-i)* we take into consideration collocation with the meaning 'young age', for *rongu(-no/-na)* vs. *naga(-i)* and *shōto(-no/-na)* vs. *mijika(-i)* we will study collocations with the meaning 'physical length'.

Our objective in the present section is same as in the case of previous case study group of color term adjectives, i.e. to investigate if there is a preference for homogeneity of origin for *gairaigo* adjective + noun collocations, i.e. *gairaigo* adjectives are more often used to modify *gairaigo* nouns, but not *wago/kango* nouns.

In the present section we follow same methodology as in the case study of color term adjectives described in Chapter 4, section 4.2.4. Thus, KOTONOHA BCCWJ was searched with the help of *"Chunagon"* search

system to compare the frequencies for four following collocation patterns:

(1) *Gairaigo* adjective (with *no/na*) + *gairaigo* noun

(2) *Gairaigo* adjective (with *no/na*) + *wago/kango* noun

(3) *Wago/kango* adjectives (with *-i*) + *gairaigo* noun

(4) *Wago/kango* adjectives (with *–i)* + *wago/kango* noun

The results of the corpus search were analyzed to find out if there are any statistically significant dependencies between the origin of the adjectives, and the origin of the nouns they were used with.

4.3.2 Results and Data Analysis

Hotto(-no/-na) **vs.** ***atsu(-i)*** **pair.** The results for *hotto(-no/-na)* and *atsu(-i)* collocations are presented in Table 9.

Table 9: *Hotto(-no/-na)* vs. *atsu(-i)* collocations

Adjective	*Gairaigo* noun (%)	*Wago/Kango* noun (%)	Total
Hotto(-no/-na) 'hot' (physical temperature)	6 (75%)	2 (25%)	8 (100%)
Atsu(-i) 'hot' (physical temperature)	132 (19%)	563 (81%)	695 (100%)
Total	138	565	703

The Chi-square test of independence of categorical data has been applied to the data in Table 9. The Chi-square test revealed statistically significant dependence between origin of adjectives and origin of nouns for *hotto(-no/-na)* vs. *atsu(-i)* ($\chi^2(1,703) = 12.37$, p=0.0004 <0.001).

The examples of collocations of *hotto(-no/-na)* with *gairaigo* nouns include: *hotto no kapuchīno* 'hot cappuccino', *hotto no kappu* 'hot cup', etc. The examples of collocations of *hotto(-no/-na)* with *wago/kango* nouns include: *hotto na tabemono* 'hot food', *hotto na beihan* 'hot cooked rice'.

Yangu(-no/-na) vs. waka(-i) pair. The results for *yangu(-no/-na)* and *waka(-i)* collocations are presented in Table 10.

Table 10: *Yangu(-no/-na)* vs. *waka(-i)* collocations

Adjective	*Gairaigo* noun (%)	*Wago/Kango* noun (%)	Total
Yangu(-no/-na) 'young' (age wise)	7 (100%)	0 (0%)	7 (100%)
Waka(-i) 'young' (age wise)	306 (3%)	9886 (97%)	10292 (100%)
Total	313	9986	10299

The Chi-square test of independence of categorical data has been

applied to the data in Table 10. The Chi-square test revealed statistically significant dependence between origin of adjectives and origin of nouns for *yangu(-no/-na)* vs. *waka(-i)* (χ^2(1,10299) = 191.76, p <0.001).

The examples of collocations of *yangu(-no/-na)* with *gairaigo* nouns include: *yangu no redī* 'young lady', *yangu no fuasshon* 'young fashion', etc.

Rongu (-no/-na) vs. naga(-i) pair. The results for *rongu (-no/-na)* and *naga(-i)* collocations are presented in Table 11.

Table 11: *Rongu (-no/-na)* vs. *naga(-i)* collocations

Adjective	*Gairaigo* noun (%)	*Wago/Kango* noun (%)	Total
Rongu(-no/-na) 'long' (physical length)	16 (61,5%)	10 (38,5%)	26 (100%)
Naga(-i) 'long' (physical length)	397 (14%)	2389 (86%)	2786 (100%)
Total	413	2399	2812

The Chi-square test of independence of categorical data has been applied to the data in Table 11. The Chi-square test revealed statistically significant dependence between origin of adjectives and origin of nouns for *rongu(-no/-na)* vs. *naga(-i)* (χ^2(1,2812) = 42.27, p <0.001).

The examples of collocations of *rongu(-no/-na)* with *gairaigo* nouns include: *rongu no uebuheā* 'long wave hair', *rongu na shiruetto* 'long

silhouette', etc. The examples of collocations of *rongu(-no/-na)* with *wago/kango* nouns include: *rongu no kami* 'long hair', *rongu na take* 'long length/size'.

Shōto(-no/-na) vs. mijika(-i) pair. The results for *shōto(-no/-na)* and *mijika(-i)* collocations are presented in Table 12.

Table 12: *Shōto(-no/-na)* vs. *mijika(-i)* collocations

Adjective	*Gairaigo* noun (%)	*Wago/Kango* noun (%)	Total
Shōto(-no/-na) 'short' (physical length)	12 (100%)	0	12 (100%)
Mijika(-i) 'short' (physical length)	240 (16%)	1290 (84%)	1530 (100%)
Total	252	1290	1542

The Chi-square test of independence of categorical data has been applied to the data in Table 12. The Chi-square test revealed statistically significant dependence between origin of adjectives and origin of nouns for *shōto(-no/-na)* vs. *mijika(-i)* (χ^2(1,1542) = 55.89, p = 0.001).

The examples of collocations of *shōto(-no/-na)* with *gairaigo* nouns include: *shōto no kāruhea* 'short curly hair', *shōto no fuā* 'short fur', etc.

4.3.3 Discussion and Conclusion

In section 4.2 of the current Chapter 4 we tested the Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives (HCHGA) on *gairaigo* adjectives referring to color terms in Contemporary Japanese. Section 4.3 of the current Chapter 4 shows that not only loanword color term adjectives, but some other loanword adjectives also demonstrate a preference for homogeneous collocations over heterogeneous ones, i.e. *gairaigo* adjectives are used to modify *gairaigo* nouns, but not *wago/kango* nouns.

As it was mentioned in the previous section, the Chi-square test revealed statistically significant dependence between the origin of adjectives and the origin of nouns for *hotto(-no/-na)* vs. *atsu(-i)*, *yangu(-no/-na)* vs. *waka(-i)*, *rongu(-no/-na)* vs. *naga(-i)*, and for *shōto(-no/-na)* vs. *mijika(-i)*. Out of four *gairaigo* adjectives examined two (*yangu(-no/-na)* and *shōto(-no/-na)*) were found only in collocations with *gairaigo* nouns. Other two (*hotto(-no/-na)* and *rongu(-no/-na)*) showed a clear-cut preference to be followed by *gairaigo* nouns as well. Therefore, we can say that *gairaigo* adjectives are more often used to modify *gairaigo* nouns in comparison with *wago/kango* near synonymic adjectives.

Furthermore, all four *wago* adjectives: *atsu(-i)*, *waka(-i)*, *naga(-i)* and *mijika(-i)* significantly ($p<0.001$) more often collocate with *wago/kango* nouns. For *yangu (-no/-na)* and *shōto (-no/-na)* it was possible to find collocations only with *gairaigo* nouns.

Therefore, our results demonstrate that both *gairaigo* and *wago/kango*

tend to collocate more often with nouns of the same origin. These results confirm HCHGA for the selected sample of *gairaigo* adjectives different from basic color terms.

4.4 General Conclusion of Testing HCHGA for Two Case Studies

The results of testing of the Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives (HCHGA) on two sets of adjectives in case studies presented in Chapter 4 prove that some *gairaigo* adjectives in Contemporary Japanese have the tendency for homogeneous collocations, i.e. they are used to modify *gairaigo* nouns rather than *wago/kango* nouns in grammatical collocations.

These results can contribute to a better understanding of the problem of differentiation between near synonymic *gairaigo* and *wago/kango* adjectives. For example, if we need to choose between two near synonymic adjectives of different origins, we should consider the origin of the noun they will modify as one of constraints.

Moreover, the results of our corpus study have also demonstrated the tendency for homogeneity of the origins of elements in case of *wago/kango* adjectives as well. Our findings show that *wago/kango* adjectives more often modify *wago/kango* nouns, than *gairaigo* nouns. However, we have already mentioned that these findings could be motivated by the fact that the number of *wago/kango* in general is greater than the number of *gairaigo* nouns. We suggest that the problem of homogeneity of origin in case of *wago/kango*

adjectives requires further research.

To sum up, our results of testing of HCHGA on different *gairaigo* adjectives show that our hypothesis can be applied to a wide range of loanword adjectives in Contemporary Japanese, and is not a unique quality of a particular semantic group, e.g. loanword color terms.

CHAPTER 5

Gairaigo Collocations and Phrase-based *Gairaigo* Compounds

This chapter introduces two patterns of *gairaigo* adjective + *gairaigo* noun combinations found in Contemporary Japanese: (1) grammatical *gairaigo* collocations (investigated in Chapter 4 of the present research), and (2) *gairaigo* compounds (investigated in greater detail in the current chapter of the research). In addition, we will demonstrate the difference in the frequencies of the usage of two compositional patterns mentioned before, based on the corpus data from KOTONOHA BCCWJ corpus.

5.1 *Gairaigo* Collocations and *Gairaigo* Compounds

In the process of the corpus search for testing of the Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives (HCHGA), which is described in Chapter 4 of the present research, we have extracted many cases when *gairaigo* adjectives were followed by *gairaigo* and *wago/kango* nouns without -*no* or -*na* morphemes. Such structures are traditionally treated as loanword compounds. In order to investigate this phenomenon in greater detail we revisit the classification of *gairaigo* compounds taking into consideration lexical categories in the donor language (English) and recipient language (Japanese). According to Irwin (2011: p 143) *gairaigo* compounds are traditionally divided into two types, based on the structural differences in the donor language:

- imported compounds (compound words in the donor language which are

borrowed as compounds into the recipient language, e.g. hot-pants in English and *hottopantsu* in Japanese);

- assembled compounds (simple words in the donor language which are assembled into compounds in the recipient language, e.g. hot and blanket in English and *hottoburanketto* 'electric heating blanket' in Japanese).

We can demonstrate this classification in the following way as presented in Figure 4

Donor Language (English)   Recipient Language (Japanese)

| English compounds E.g. hot-pants | → | Imported *gairaigo* compounds E.g. *hottopantsu* |
| English simple words E.g. white, day | → | Assembled *gairaigo* compounds E.g. *howaitodē* 'return of the favor after Valentine's day on March,14th' |
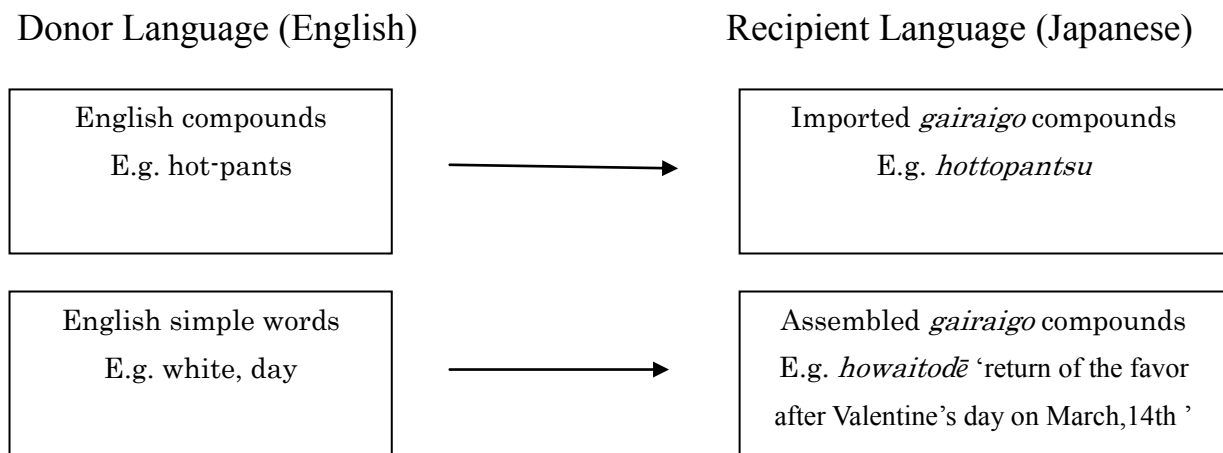
Figure 4 Traditional classification of *gairaigo* compounds in Japanese

However, the abovementioned classification does not treat the cases when grammatical combinations, but not compound words are borrowed from English to Japanese. As mentioned in Chapter 2, compounds such as *hottokōhī* appear to be based on an English phrases, e.g. *hot coffee*.

In the present research we will follow the classification of word combinations in English described in Paulsen (2005, p. 59), which divides English word combinations into free collocations, restrained collocations and

idioms (figurative and pure). Thus, by adding new elements to Figure 4, we demonstrate the limitations of the traditional classification of *gairaigo* compounds described by Irwin.

Donor Language (English)   Recipient Language (Japanese)

English compounds E.g. hot-pants	→	Imported *gairaigo* compounds E.g. *hottopantsu*
English simple words E.g. white, day	→	Assembled *gairaigo* compounds E.g. *howaitodē* 'return of the favor after Valentine's day on March,14th '
Free collocations E.g. hot coffee — Restrained collocations E.g. dark chocolate — Idioms (figurative and pure) E.g. last straw	→ → →	?

Figure 5 Limitations of the traditional classification of *gairaigo* compounds in Japanese

As Figure 5 shows the traditional classification of *gairaigo* compounds

does not reflect those Japanese compounds which are based on English free collocations, restrained collocations and idioms.

In the Figure 6 we will demonstrate what happens to different word combinations in the process of borrowing from English to Japanese. We will also show how lexical categories correspond to one another in the donor language (English) and recipient language (Japanese).

English compounds E.g. hot-pants	→	Imported *gairaigo* compounds E.g. *hottopantsu* 'hot-pants',
English simple words E.g. white, day	→	Assembled *gairaigo* compounds E.g. *howaitodē* 'return of the favor after Valentine's day on March, 14th '
Free collocations E.g. hot coffee Restrained collocations E.g. dark chocolate Idioms (figurative and pure) E.g. last straw	→	Phrase-based *gairaigo* compounds E.g. *hottokōhī* 'hot coffee', *dākuchokorēto* 'dark chocolate', *rasutosutorō* 'last straw'

Figure 6 The correspondence between lexical categories in Donor Language (English) – Recipient Language (Japanese)

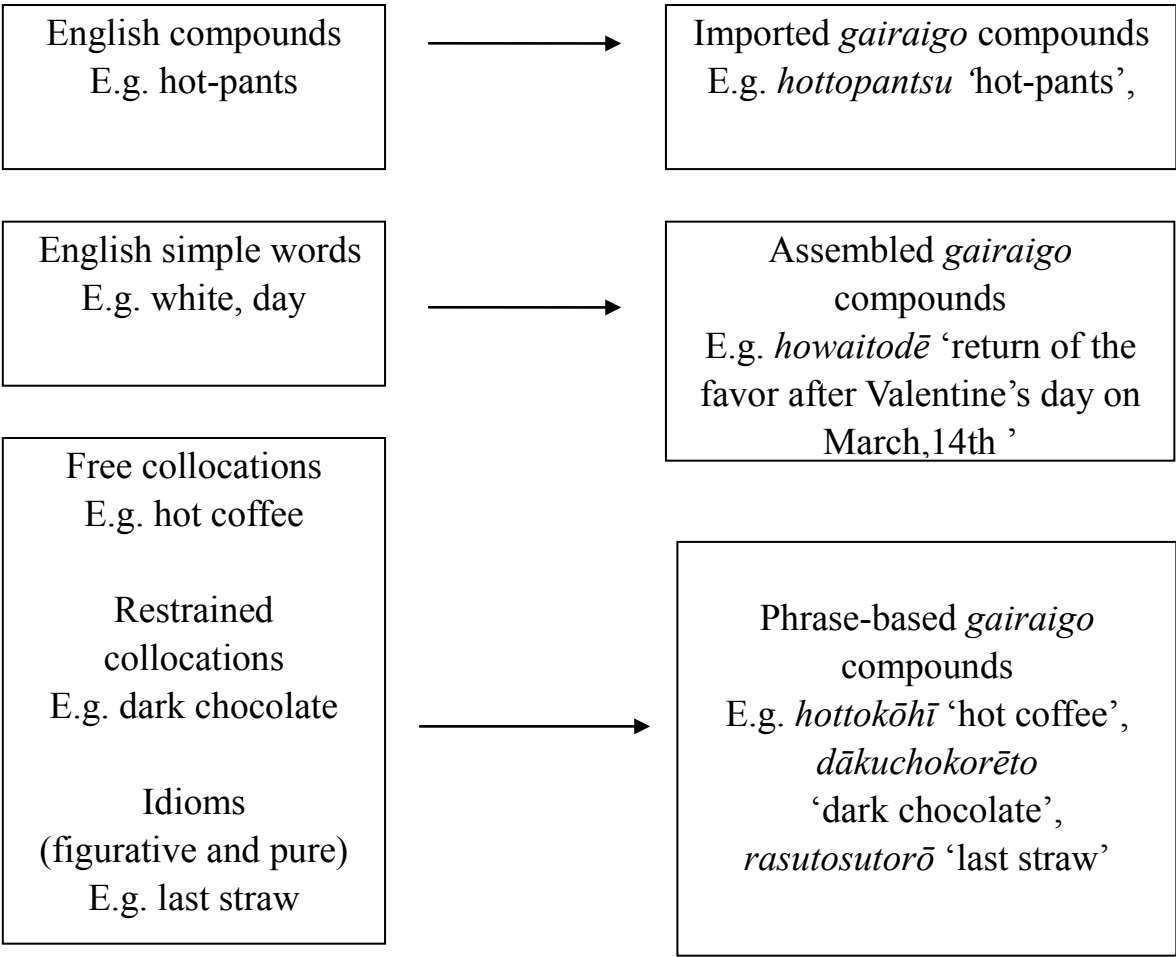Figure 6 demonstrates that we suggest extending the existing classification of *gairaigo* compounds by adding a new type: phrase-based *gairaigo* compounds, reflecting the phrasal origin of this type of compounds in the donor language (English).

Moreover, the compounds derived from phrasal constructions, especially from free collocations, are different from the previously mentioned types (imported and assembled), since the constituting elements are still relatively easily separated, and often used in a number of compounds and even as separate adjectives in the recipient language. For example, the adjective *hotto* can be used in predicative positions, as well as an attribute in collocations with nouns (with morphemes *-na* and *-no*), e.g. *hotto na kafeore* 'hot cafe au lait', and in a number of *gairaigo* compounds: *hottokōhī* 'hot coffee', *hottotī* 'hot tea', *hottodorinku* 'hot drink', etc. Thus, we suggest to separate *gairaigo* compounds derived from phrasal construction in English from imported and assembled compounds. We will refer to them as phrase-based compounds, since this term reflects the difference of the origin in the donor language. From the morphological point of view, we can call such constructions morphological collocations, since some elements tend to co-occur together more often than others.

If we apply Kageyama's lexical integrity test (2001) we will see that, although the elements of phrase-based compounds appear relatively independent, they have the connection between the elements suggesting their compound nature. Lexical integrity means that we can not apply the grammatical rules to an element within the word. We will demonstrate the

lexical integrity of phrase-based compounds by the following examples. There are two compounds in Japanese: *hottokōhī* 'hot coffee' and *aisukōhī* 'iced coffee'. To define if they are compounds or phrases, we try to coordinate the elements with the use of Japanese 'and' conjunctions: *to* 'and' and *ya* 'and'. Compare the examples in (1) 1a and 1b:

(1)
1a. *hotto to/ya aisu no kōhī*   'hot and iced coffee'
1b. **hotto to/ya aisukōhī*   'hot and iced coffee'

The difference between (1a) and (1b) is the use of morpheme *-no* before the word *kōhī*. Unlike English, where *hot coffee* and *iced coffee* are collocations, and *hot* and *iced* can be coordinated by the use of English conjunction *and*, (i.e., *hot and iced coffee*) the Japanese requires the use of morpheme *-no* to allow of coordination in case of *hotto* and *aisu*. That indicates that *hottokōhī* and *aisukōhī* are compounds in Japanese.

There is also phonological evidence that allows of determing if a combination of two words is a compound or a phrase. This evidence stems from the change of accent patterns of words when they form a compound (Kubozono, 2006; Kubozono and Tanaka, 2010). When used separately each gairaigo word possesses its own accent. Consider the examples in (2) 2a and 2b:

(2)

2a. *Pín.ku* 'pink'[13]

2b. *Rí.bon* 'ribbon'

However, when these two *gairaigo* words are joined together to form a compound, the first word loses its accent. Thus, we can prove that the combination of the words is a compound, not a phrase, if the accentuation pattern is changed. See the example in (3):

(3)

Pin.ku.rí.bon 'pink ribbon'

Therefore, taking into consideration two abovementioned qualities of Japanese compounds (lexical integrity and accentuation change), we will consider morphological collocations as compounds in Contemporary Japanese, although they are based on phrases in the donor language (English).

5.2 Testing HCHGA on a group of Phrase-based *Gairaigo* Compounds

In this section we will test if morphological collocations follow the Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives, i.e. we will investigate if the elements of phrase-based compounds with one element being *gairaigo* adjective indicate a tendency for homogeneity of constituting elements. In other words, we will try to determine if *gairaigo* adjectives are

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[13] Dots indicate syllable doundaries. The diacritic indicates the vowel after the pitch falls immediately.

more often found in morphological collocations (i.e. phrase-based compounds when an adjective modifies a noun without connecting morphemes *-no/-na*) with the second element being a *gairaigo* noun, or it is not the case.

For this case study we will use two groups of *gairaigo* adjectives tested for HCHGA in case of collocations in the previous Chapter 4. First of all, we will test HCHGA on phrase-based compounds to determine nouns of which origin (*gairaigo* or *wago/kango*) are usually found as second elements in such compounds. Therefore, we will test HCHGA in case of phrase-based compounds on the following list of twelve *garaigo* adjectives widely used in Contemporary Japanese: *howaito* 'white', *burakku* 'black', *reddo* 'red', *ierō* 'yellow', *buraun* 'brown', *pāpuru* 'purple', *pinku* 'pink', *gurē* 'grey', *hotto* 'hot', *yangu* 'young', *rongu* 'long', and *shōto* 'short'. Balanced Corpus of Contemporary Written Japanese corpus (BCCWJ) was searched for two patterns:

(1) *Gairaigo* adjective (without *-no/-na*) + *gairaigo* noun
(2) *Gairaigo* adjective (without *-no/-na*) + *wago/kango* noun

The procedure of the BCCWJ corpus search is slightly different from the one used for grammatical collocations in Chapter 4. In Chapter 5 we only test *gairaigo* adjectives. The procedure of testing the collocation tendencies of *gairaigo* adjectives in morphological collocations was as follows:

1. Short Unit Search (*tantan'i-kensaku*) of "*Chunagon*" search system was

used to input the key (*gairaigo* adjective).

2. Firstly, Orthographic Form (*shojikei-shutsugenkei*) was selected and *gairaigo* adjective was inputted as a key in its *katakana* form, e.g. ホワイト 'white'.

3. Next, a collocation condition on the context following the key was selected to be a noun within 1 unit from the key. The context before and after the key was 10 units each.

4. Finally, the number of tokens was calculated, and the tokens with the meaning different from the color term and/or compounds in the donor language (English), e.g. *howaitohausu* 'The White House', were eliminated.

5. In the end all tokens corresponding to the search conditions (origin of the nouns following the adjective: *wago/kango* or *gairaigo*) were summarized.

The results of the BCCWJ corpus search are presented in Table 13 below.

Table 13 Testing of HCHGA on a group of phrase-based compounds

Gairaigo Adjective	Phrase-based Compounds	
	Wago/Kango Noun	*Gairaigo* Noun
howaito ('white')	9	122
burakku ('black')	15	62
reddo ('red')	5	36
ierō ('yellow')	4	97
buraun ('brown')	7	46
pāpuru ('purple')	5	28
gurē ('grey')	22	48
pinku ('pink')	245	194
hotto ('hot')	6	155
yangu ('young')	6	48
rongu ('long')	24	318
shōto ('short')	37	130

The Binomial test for *howaito*, *burakku*, *reddo*, *ierō*, *buraun*, *pāpuru*, *gurē*, *hotto*, *yangu*, *rongu* and *shōto* reveals statistically significant difference in frequencies ($p < 0.0001$). Therefore, we can say that in phrase-based *gairaigo* compounds the origin of both elements is usually homogeneous, i.e. *gairaigo* adjectives tend to be used in phrase-based compounds with the second element being *gairaigo* noun rather than *wago/kango* noun. However, there is one exception from the above mentioned pattern: *pinku* which exhibits a tendency

to be used in phrase-based compounds with *wago/kango* nouns, rather than *gairaigo* nouns. The use of *pinku* does not demonstrate the variety of types: out of 245 tokens, *pinku* is used in compounds with *–iro* (色'color') in 239 cases, thus, demonstrating the preferences for limited types of *wago/kango* nouns to collocate with.

5.3 Comparison of the Frequency Distribution between Gairaigo Collocations and *Gairaigo* Phrase-based Compounds

In this section by the means of corpus analysis we test HCHGA in case of two patterns of *gairaigo* adjective + *gairaigo* noun combinations, and investigate which type (with or without *-no/-na* morphemes, i.e. *gairaigo* collocations or phrase-based *gairaigo* compounds, respectively) is more common. We will search BCCWJ to compare two types of the use of *gairaigo* adjective:

- Type 1: Phrase-based *Gairaigo* Compounds

(Morphological collocations)

Gairaigo adjective without *–no/-na* + *Gairaigo* noun

e.g. (*hottokōhī 'hot coffee', rongusukāto* 'long skirt', etc.).

- Type 2: *Gairaigo* Collocations

(Grammatical collocations)

Gairaigo adjective with *-no/-na* + *Gairaigo* noun

e.g. (*yangu no redisu* 'young ladies', *hotto na kafe ore* 'hot café au lait' etc.)

Imported and assembled *gairaigo* compounds, as well as proper names such as *howaitohausu* 'The White House', *hottopantsu* 'hot-pants', etc. were excluded from the count. We took into consideration only cases of free collocations in English borrowed into Japanese. The results of corpus search are presented in Table 14.

Table 14 Corpus data results for the distribution of frequencies of Type 1 and Type 2 patterns of the use of *gairaigo* adjectives

Gairaigo adjective	Type 1 Morphological *Gairaigo* Collocations (Phrase-based Compounds) (*gairaigo* nouns)	Type 2 Grammatical *Gairaigo* Collocations (*gairaigo* nouns)
howaito ('white')	122	23
burakku ('black')	62	14
reddo ('red')	36	2
ierō ('yellow')	97	16
buraun ('brown')	46	26
pāpuru ('purple')	28	12
gurē ('grey')	48	139
pinku ('pink')	194	347
hotto ('hot')	155	6
yangu ('young')	48	7
rongu ('long')	318	16
shōto ('short')	130	12

We have compared the proportions of *gairaigo* adjectives with *gairaigo* nouns for patterns of Types 1 and 2. In nine cases out of fourteen, for *howaito*

(p<0.0001), burakku (p<0.0001), *reddo* (p<0.0001), *ierō* (p<0.0001), *buraun* (one-tail p=0.012<0.05)*, pāpuru* (one-tail p=0.0083<0.05), *hotto* (p<0.0001)*, yangu* (p<0.0001)*, rongu* (p<0.0001) *and shōto* (p<0.0001) Binomial test reveals significant difference in proportions. According to Table 14, Type 2 *gairaigo* grammatical collocations with *gairaigo* nouns are outnumbered by Type 1 phrase-based *gairaigo* compounds, i.e., *gairaigo* adjectives and *gairaigo* nouns are found more often in phrase-based compounds, than in collocations using *-no/-na* morphemes.

However, some *gairaigo* adjectives have demonstrated a tendency to be used in Type 2 collocations, rather than Type 1. Thus, for *pinku* and *gurē* Binomial test reveals significant difference in proportions (p<0.0001). These results are in coherence with the results from the previous Chapter 4 which demonstrated the tendency that *pinku* and *gurē* are used more often compared to their native near synonymic counterparts: *momoiro* and *haiiro*. Therefore, we can suggest that these two *gairaigo* adjectives are more widely used in grammatical collocations than morphological ones. Still in either case they are significantly often followed by *gairaigo* nouns.

The results of testing of the HCHGA on both types of *gairaigo* adjectival combinations confirm the HCHGA in the case of phrase-based *gairaigo* compounds. Therefore, we can definitely conclude that *gairaigo* words still demonstrate a strong tendency for homogeneous co-occurrence even in cases of constituting a compound word.

5.4 Discussion and Conclusion

This chapter demonstrated that *gairaigo* adjectives can be found not only as simple loanwords used in collocations (with a help of *-na/-no* connecting morphemes), but also as constituting elements of *gairaigo* compounds.

We have showed the limitations of the existing classification of *gairaigo* compounds and suggested to extend it by adding a new type of *gairaigo* compounds found in Contemporary Japanese – phrase-based *gairaigo* compounds. Although traditionally only two types of loanword compounds were singled out in Contemporary Japanese – imported compounds and assembled compounds, we demonstrated that the existing classification is not complete. Phrase-based *gairaigo* compounds are phrases (free or restrained collocations or idioms) in the donor language, as opposed to compounds and separate words in case of imported and assembled *gairaigo* compounds, respectively. Thus, the elements of such phrase-based compounds can be often used separately, and can be found in a number of compounds with different nouns as second elements. These qualities demonstrate a resemblance of the phrase-based *gairaigo* compounds to *gairaigo* collocations.

Therefore, we can suggest that the existence of the phrase-based *gairaigo* compounds shows that in some cases Japanese is borrowing not only separate words and morphemes, but preserves the original syntactic relations between the borrowed words. This can indicate that the elements are combined together not as Japanese elements (i.e., following the grammatical rules and

syntactical patterns of the Japanese language), but as they were combined in the donor language (i.e., following the grammatical rules and/or syntactical patterns existing (or existed) in English. Thus, even at the grammatical and syntactical levels Japanese tries to differentiate between the use of native and borrowed words and combinations of such words.

The tendency for homogeneity of the elements in combinations is not a characteristic of *gairaigo* combinations only. This tendency is widely found in *wago + wago* elements and *kango + kango* element combinations in the Japanese language. One of the examples is the tradition of reading the combinations of two Chinese characters following either *on-yomi* (Chinese-style pronunciation of characters accepted in Japan in the process of borrowing characters), or *kun-yomi* (Japanese-style pronunciation of characters). Thus, the general rule is to read both characters in one style *on-yomi* and *on-yomi* or *kun-yomi* and *kun-yomi*. Therefore, the tendency of gairaigo elements to occur together is in coherence with the structure of the Japanese language.

However, any tendency in practically any language often has exceptions. There were several examples of hybrid compounds, i.e., compounds consisting of elements of different origin such as *rongutake* (ロング丈) 'long length' is a combination of a *gairaigo* adjective *rongu* 'long' and *wago* noun *take* 'length'. Other examples include such compounds as *yangutaikai* (ヤング大会) 'tournament for young (people)', and *yangutanto* (ヤング担当) 'a person in charge of young (people)'. These combinations are

similar in nature to the hybrid readings of some words consisting of two Chinese characters. There are two types of such hybrid readings: *jyū-bako yomi* (重箱読み) and *yu-tō yomi* (湯桶読み). In case of *jyū-bako yomi* the first Chinese character is pronounced with *on-yomi* (Chinese reading of the character which is accepted in Japan), and second is pronounced with *kun-yomi* (Japanese native reading of the character). *Yu-tō yomi* is the opposite way, when the first Chinese character is read by *kun-yomi* (Japanese native reading), and the second one by *on-yomi* (Chinese reading accepted in Japan). The cases of words read in *jyū-bako or yomi yu-tō yomi* styles are quite rare and they are exceptions. The same tendency is found in hybrid compounds consisting of *garaigo and wago/kango* elements. We can consider that the mixing of elements of different origin is not new to the Japanese language, but it has always been more of an exceptional rather than usual way of combining elements.

CHAPTER 6

Classification of *Gairaigo* Adjectives Based on HCHGA

In previous chapters we introduced Homogenious Collocation Hypothesis for Gairaigo Adjectives (HCHGA). We demonstrated that some *gairaigo* adjectives follow HCHGA when they are used to modify *gairaigo* nouns. In this chapter we present a new approach to the problem of the classification of *gairaigo* adjectives based on the results of testing HCHGA presented in previous chapters.

6.1 Testing of HCHGA on a Sample from a Dictionary

The research results presented in previous chapters suggest that some of *gairaigo* adjectives can exhibit collocation preferences and patterns different from *wago/kango* adjectives.

In this chapter we will try to define if all *gairaigo* adjectives follow HCHGA, or if there are some *gairaigo* adjectives that do not demonstrate a clear preference for homogeneity in collocations.

In previous case studies we tested HCHGA only on groups of *gairaigo* adjectives frequently found in written and spoken Japanese, and having some near synonymic *wago/kango* counterparts. However, in the chapter we will take a sample of *gairaigo* adjectives of English origin without filtering them from the point of view of the frequency of their use and the existence of *wago/kango* near synonyms. We believe that testing HCHGA on such a sample

can give us more objective understanding of how and to what extent HCHGA can be applied.

Firstly, we singled out *gairaigo* adjectives derived from English adjectives to make a sample list for our case study. In previous chapters we studied *gairaigo* adjectives that are commonly used in everyday speech, however, for the present case study we use ***Sanseido's Concise Dictionary of Katakana Words, 3rd edition*** to list up all *gairaigo* adjectives starting with Japanese letters ア(A) and イ(I), and registered in Contemporary Japanese. The total list contains 72 *gairaigo* adjectives originated from English adjectives, 28 starting with letter ア(A), and 44 starting with letter イ(I). The full list of the extracted *gairaigo* adjectives is presented Table 16, in Appendix 1.

The following step of our case study is to determine if all the *gairaigo* adjectives on the list are following HCHGA or not, and what kind of collocation pattern: grammatical or morphological is more preffered. Balanced Corpus of Contemporary Written Japanese (BCCWJ) was searched to clarify the patterns and preferences of the use of the listed *gairaigo* adjectives.

To determine if a *gairaigo* adjective follows HCHGA or not, we searched BCCWJ using "Chunagon" search system for four following patterns of use:

(1) *Gairaigo* adjective (with *-no/-na*) + *gairaigo* noun
(2) *Gairaigo* adjective (with *-no/-na*) + *wago/kango* noun
(3) *Gairaigo* adjective (without *-no/-na*) + *gairaigo* noun

(4) *Gairaigo* adjective (without *-no/-na*) + *wago/kango* noun

First of all, the grammatical collocation patterns of *gairaigo* adjectives were examined. To test *gairaigo* adjectives requiring *-na/-no* connecting morphemes to modify nouns in case of grammatical collocations the following procedure was applied:

1. Orthographic Form (*shojikei-shutsugenkei*) was selected and *gairaigo* adjective was inputted as a key in it*s katakana* form, e.g. アグレッシブ 'agressive'.

2. Next, a collocation condition on the context following the key within 1 unit from the key was also selected as Orthographic Form (*shojikei-shutsugenkei*) and a connecting morpheme in *hiragana* was inputted, e.g. の (*-no*).

3. After that another collocation condition on the context following the key was selected to be a noun within 2 units from the key. The context before and after the key was 10 units each.

4. Finally, the number of tokens was calculated, and the tokens with the unappropriate meaning or form, e.g. *arugessibu no X* 'aggressive X', were eliminated.

5. Then the procedure was repeated in case of な (*-na*) connecting morpheme.

6. In the end all tokens corresponding to the search conditions were

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summarized.

Next *gairaigo* adjectives were tested for their collocation preferences in case of morphological collocations. The procedure of testing the collocation tendencies of *gairaigo* adjectives in morphological collocations was as follows:

1. Short Unit Search (*tantan'i-kensaku*) was used to input the key (*gairaigo* adjective).

2. Firstly, Orthographic Form (*shojikei-shutsugenkei*) was selected and *gairaigo* adjective was inputted as a key in its *katakana* form, e.g. インスタント 'instant'.

3. Next, a collocation condition on the context following the key was selected to be a noun within 1 unit from the key. The context before and after the key was 10 units each.

4. Finally, the number of tokens was calculated, and the tokens with uappropriate form and/or compounds in the donor language (English), were eliminated.

5. In the end all tokens corresponding to the search conditions were summarized.

6.2 Results and Analysis

The results of corpus search for *gairaigo* adjectives starting with letters ア(A) and イ (I) with the total number of counts of 4 or more are presented in Table 15. The whole list of *gairaigo* adjectives is presented in Table 16 in

Appendix 1.

Table 15 The results of BCCWJ search for case study *gairaigo* adjectives

	Gairaigo modifier	English meaning	+ *Gairaigo* nouns		+*Wago/Kango* nouns	
			with *-no/-na*	without *-no/-na*	with *-no/-na*	without *-no/-na*
1	*aguressibu* アグレッシブ	Aggressive	6	1	12	0
2	*āban* アーバン	Urban	0	85	1	7
3	*abusutorakuto* アブストラクト	Abstract	2	0	2	1
4	*aberēji* アベレージ	Average	0	25	0	0
5	*amerikan* アメリカン	American	3	49	3	6
6	*aromatikku* アロマティック	Aromatic	0	4	1	0
7	*antacchaburu* アンタッチャ	Untouchable	1	2	4	0

	ブル					
8	*ierō* イエロー	Yellow	16	97	8	4
9	*ījī* イージー	Easy	1	0	8	0
10	*iregyurāru* イレギュラー	Irregular	5	1	13	1
11	*insutanto* インスタント	Instant	4	176	10	68
12	*insutorumentaru* インストルメ ンタル	Instrumental	1	3	2	0
13	*indasuoriaru* インダストリ アル	Industrial	0	24	0	1
14	*intānashonaru* インターナシ ョナル	International	7	24	15	9
15	*intānaru* インターナル	Internal	0	5	0	0
16	*intarakutibu* インタラクテ	Interactive	8	1	11	3

	ィブ					
17	*integuraru* インテグラル	Integral	0	4	0	0
18	*independento* インデペンデ ント	Independe nt	0	1	1	2
19	*interijento* インテリジェ ント	Intelligent	0	13	2	9
20	*intenshibu* インテンシブ	Intensive	0	6	0	0
21	*indoa* インドア	Indoor	5	9	7	6
22	*infōmaru* インフォーマ ル	Informal	7	16	20	3

The results of the BCCWJ corpus search presented in Table 15 show that while some *gairaigo* adjectives follow HCHGA, other *gairaigo* adjectives do not exhibit any particular collocation preference to be followed by either by *gairaigo* or *wago/kango* nouns.

Gairaigo adjectives following HCHGA, i.e. *gairaigo* adjectives that show the tendency to be used to modify *gairaigo* nouns, rather than

wago/kango nouns are: *āban* in 92% of cases is followed by *gairaigo* nouns (85 cases out 92), *aberēji* in 100% of cases (25 out 25), *amerikan* in 85% of cases (52 out of 61), *aromatikku* in 80% of cases (4 out of 5), *ierō* in 90% of cases (113 out of 125), *insutanto* in 70% of cases (180 out of 258), *indasutoriaru* in 96% of cases (24 out of 25), *intānashonaru* in 55% of cases (29 out of 53), *intānaru* in 100% (5 out of 5), *interijento* in 54 % of cases (13 out of 24), *intenshibu* in 100% of cases (6 out of 6), and *integuraru* in 100% (4 out of 4).

The Binomial test reveals statistically significant difference in the distribution of frequencies for *āban*, *aberēji*, *amerikan*, *ierō*, *insutanto*, *indasutoriaru* (p<0.0001), *intānaru* (p=0.0313<0.05), and *intenshibu* (p=0.0156<0.05). Thus, for the abovementioned *gairaigo* adjectives there is an obvious preference for homogeneity of the origin of the adjective and the noun it modifies.

Gairaigo adjectives that do not exhibit any particular collocation preferences, and, thus, are not following HCHGA, are: *aguresshibu* (7 *gairaigo* nouns vs. 12 *wago/kango* nouns), *abusutorakuto* (2 *gairaigo* nouns vs. 3 *wago/kango* nouns), *antacchaburu* (3 *gairaigo* nouns vs. 4 *wago/kango* nouns), *ījī* (1 *gairaigo* noun vs. 8 *wago/kango* nouns), *iregyurā* (6 *gairaigo* nouns vs. 14 *wago/kango* nouns), *insutorumentaru* (4 *gairaigo* nouns vs. 2 *wago/kango* nouns), *intarakutibu* (9 *gairaigo* nouns vs. 14 *wago/kango* nouns), *independento* (1 *gairaigo* noun vs. 3 *wago/kango* nouns), *indoa* (14 *gairaigo* nouns vs. 13 *wago/kango* nouns), *infōmaru* (23 *gairaigo* nouns vs. 23 *wago/kango* nouns).

The results also indicate that *gairaigo* adjectives following HCHGA are more often used to modify *gairaigo* nouns without *-no/-na* morphemes. Thus, such *gairaigo* adjectives are more often found in phrase-based *gairaigo* compounds, rather than in collocations.

On the other hand, *gairaigo* adjectives not following HCHGA are usually used with a connecting particle *-na*, similar to the Japanese nominal *na*-adjectives.

6.3 HCHGA-based Approach to the Classification of *Gairaigo* Adjectives

Based on the above mentioned results we suggest a new approach to the classification of *gairaigo* modifiers, depending on the absence or presence of the tendency for homogeneity of elements of collocations in which these *gairaigo* adjectives are frequently found. In other words, we can single out a class of *gairaigo* adjectives that are more often found in combinations (grammatical and morphological collocations) with *gairaigo* nouns, and another class of *gairaigo* adjectives that do not demonstrate a particular preference for the origin of the nouns they are used to modify.

Taking into consideration two abovementioned characteristic, we suggest the following classes of *gairaigo* adjectives:

Class 1 *gairaigo* adjectives: non-restrained class

- Class 1 *gairaigo* adjectives that do not demonstrate any preference for a

collocation partner (noun) of the particular origin, i.e. they are followed by both *gairaigo* and *wago/kango* nouns.

One of the additional characteristics of this class of *gairaigo* adjectives is that they demonstrate the preference for grammatical collocations, in particular, the use of *na*-morpheme when modifying nouns.

The example of Class 1 *gairaigo* adjectives is the word *iregyurā* 'irregular'. The search of BCCWJ shows 76 tokens of the word *iregyurā* irregular', and in 20 cases the word was used as a modifier in collocations or a component of phrase-like compounds. The distribution of its use demonstrates that *iregyurā* can be followed by both *gairaigo* and *wago/kango* nouns, and can also be found in all combinations: with and without *-no/-na* connectors. However, out of 20 tokens *iregyurā* was followed by *wago/kango* nouns in 14 cases, and in 13 cases it was used with *-na*/-no morphemes, as Japanese nominal adjectives.

Class 2 *gairaigo* adjectives: restrained class

- Class 2 *gairaigo* adjectives have limitations on their collocation partners, because they follow HCHGA. Thus, the *gairaigo* adjectives of Class 2 are more often followed by *gairaigo* nouns, rather then *wago/kango* nouns.

Interestingly, these *gairaigo* adjectives are often used without any

connective morphemes in phrase-based *gairago* compounds (morphological collocations), thus, they preserve the syntactic structure of the source collocations that existed in the donor language (English).

The example of Class 2 *gairaigo* adjectives is the word *ierō* (yellow), which demonstrates a clear tendency for the restrained type. There are 514 tokens of *ierō* in BCCWJ, and in 125 cases *ierō* was used as a modifier or a part of phrase-based compounds. Out of 125 cases in 113 cases *ierō* was followed by *gairaigo* nouns. This shows the clear tendency for homogeneity of the adjective's origin and the origin of the noun it is used with.

6.4 Discussion: Reasons for the Differences between Class 1 & Class 2

The fact that some *gairaigo* adjectives follow HCHGA and some do not, can be explained by the different reasons for borrowing Class 1 and Class 2 adjectives. Thus, Class 1 *gairaigo* adjectives (non-restrained type) were borrowed to introduce new concepts that did not have a sufficient representation in Japanese, while Class 2 *gairaigo* adjectives were borrowed as parts of donor language (English) collocations for a more adequate description of loanword nouns in the recipient language (Japanese).

Another reason for the existing difference between Class 1 and Class 2 *gairaigo* adjectives can be explained by the different degree if assimilation to the Japanese grammar. Thus, Class 1 *gairaigo* adjectives – the non-restrained class – tend to be used more often as Japanese adjectives in grammatical collocations. This indicates their higher degree of assimilation to the Japanese

grammatical and syntactic systems. Whereas, Class 2 *gairaigo* adjectives – the restrained class – tend to be used in phrase-based compounds, keeping stronger links with the donor language (English).

If the degree of assimilation is the main factor leading to the existence of Class 1 and Class 2, then with the further development of the Japanese language, and longer assimilation of Class 2 adjectives, some of them can potentially move to Class 1.

6.5 Possible Subclasses of Class 1 and Class 2 *Gairaigo* Adjectives

The previous sections introduced how *gairaigo* adjectives in Contemporary Japanese can be divided into two classes based on their collocation preferences, i.e. if they tend to be followed by *gairaigo* nouns or not. However, if we take a closer look at the collocation preferences within each class, we can see some additional characteristics that can be used for the division of *gairaigo* adjectives of Class 1 and Class 2 into further subclasses.

For example, Class 1 *gairaigo* adjectives such as *infōmaru* 'informal' and *intānashonaru* 'international' when followed by *gairaigo* nouns are often found in morphological collocations (phrase-based compounds 16 tokens out of 23 and 24 tokens out of 31, respectively), but when they are used with *wago/kango* nouns, they are often found in grammatical collocations, i.e. modify *wago/kango* nouns with the use of- *no/-na* morphemes (20 tokens out of 23 for *infōmaru*, and 15 tokens out of 24 for *intānashonaru)*. On the other hand, such Class 1 *gairaigo* adjectives as *intarakutibu* 'interactive' and

iregyurā 'irregular' are mostly found in grammatical collocations with both *gairaigo* and *wago/kango* nouns (total of 19 and 18, respectively), and rarely found in phrase-based compounds (total of 4 for *intarakutibu,* and total of 2 for *iregyurā*). Therefore, we can suggest that within Class 1 there are subclasses of non-restrained *gairaigo* adjectives preferring different structural patterns of collocations either grammatical or morphological ones, depending on the origin of the noun they are followed by.

If we have a closer look at Class 2 *gairaigo* adjectives we can also see two possible subclasses: restrained *gairaigo* adjectives mostly found in morphological collocations (phrase-based compounds) with *gairaigo* nouns, and restrained *gairaigo* adjectives found in both structural types, i.e., grammatical and morphological collocations. There are a lot of examples of the first subclass – restrained *gairaigo* adjectives found mostly in phrase-based compounds: *āban* 'urban' (85 out 85), *aberēji* 'average' (25 out 25), *amerikan* 'American' (49 out 52), *insutanto* 'instant' (176 out of 180), and *indasutoriaru* 'industrial' (24 out 24). The only example of the second possible subtype we can find is *ierō* 'yellow'. However, if we look back at Chapters 4 and 5 we can find more examples of this subtype, such as *pinku* 'pink', and *gurē* 'grey'.

Therefore, we can anticipate a possibility of the further and more detailed classification of *gairaigo* adjectives into subclasses of Class 1 and Class 2, based on the origin of the nouns they are often used with, and the type of the collocation pattern there are often found in. The possible sublasses of *gairaigo* adjectives are presented in Figure 7 for Class 1 *gairaigo* adjectives and Figure 8 for Class 2 *gairaigo* adjectives.
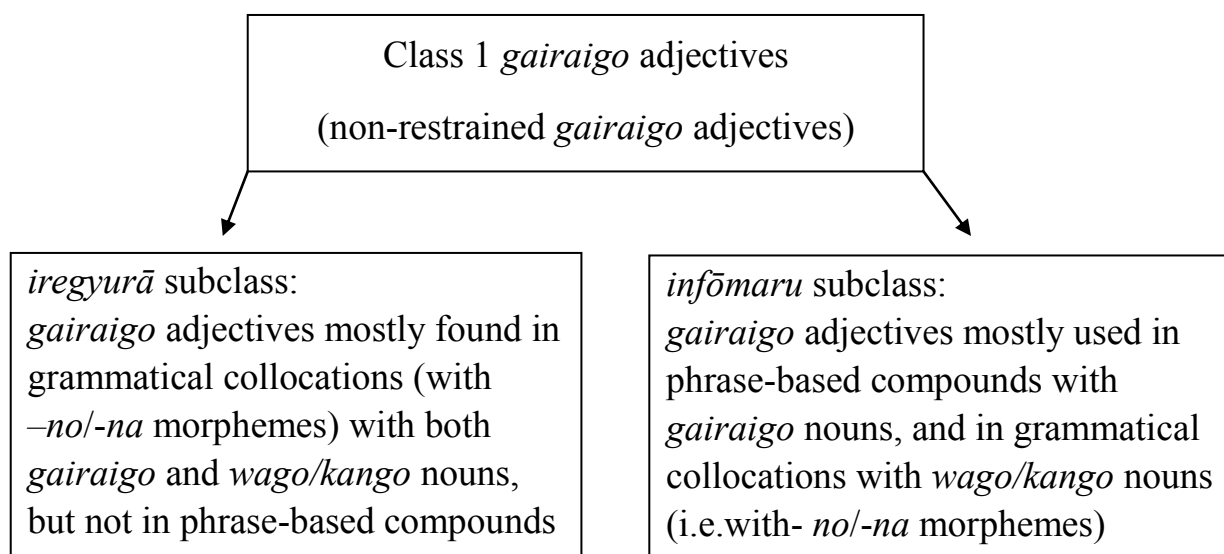
Figure 7 Possible Subclasses of Class 1 *Gairaigo* Adjectives

Class 1 (non-restrained) subclass 1*(iregyurā* subclass*) gairaigo*

adjectives are: aguresshibu, *abusutorakuto*, *ījī*, *iregyurā*, and *intarakutibu.*

Class 1 (non-restrained) subclass 2*(infōmaru* subclass*) gairaigo*

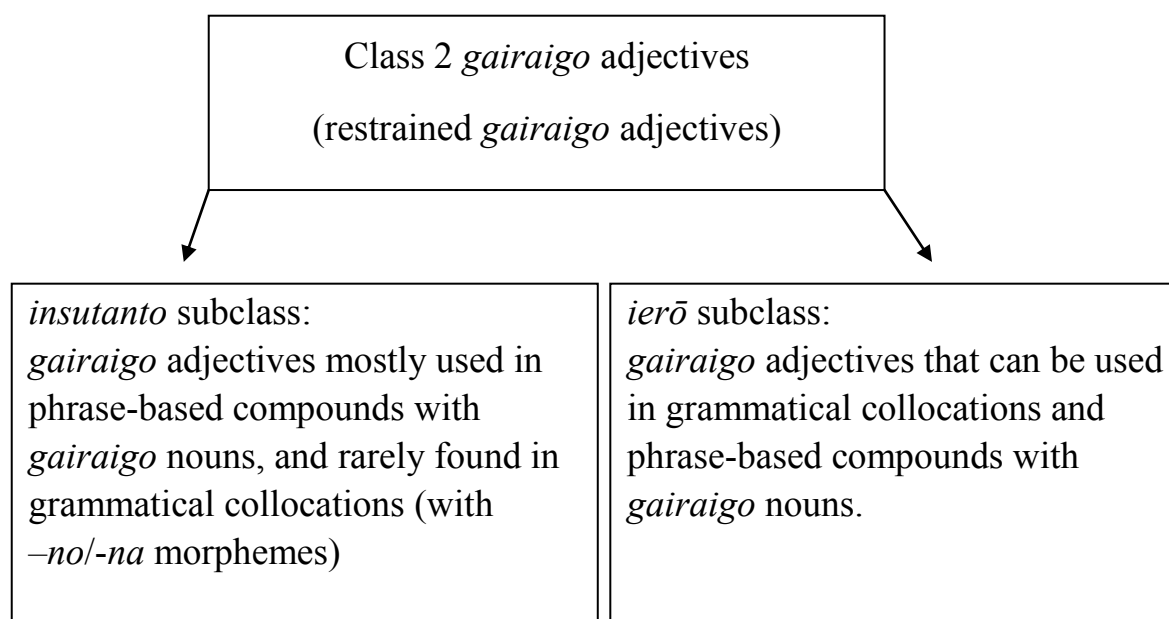*adjectives are: antacchaburu*, *insutorumentaru*, *indoa*, and *infōmaru.*

Figure 8 Possible Subclasses of Class 2 *Gairaigo* Adjectives

Class 2 (restrained) subclass 1 *(insutanto* subclass*) gairaigo adjectives are: āban*, *aberēji*, *amerikan*, *aromatikku*, *insutanto*, *indasutoriaru*, *intānashonaru*, *intānaru*, *interijento*, *intenshibu*, and *integuraru*.
Class 2 (restrained) subclass 2 *(ierō* subclass*) gairaigo adjectives are: ierō*.

6.6 Conclusion

In Chapter 6 we have introduced a new approach to the classification of *gairaigo* adjectives in Contemporary Japanese, based on HCHGA. We studied a sample list of English-origin loanword adjectives taken from a dictionary of loanwords, to demonstrate that not all *gairaigo* adjectives follow HCHGA. This allowed us of singling out two classes of *gairaigo* adjectives in Contemporary Japanese: the non-restrained class – *gairaigo* adjectives having no preferences to be used with a noun of the particular origin, and restrained class – *gairaigo* adjectives primarily used with *gairaigo* nouns.

We have also suggested a possibility for the further classification of *gairaigo* adjectives of both Class 1 and Class 2; however, this further classification requires more quantitative data to be used for a deeper analysis of the phenomena. Therefore, at this stage of the research a more detailed classification is presented only as a suggestion based on the data set under study.

CHAPTER 7

General Discussion and Conclusion

In Chapter 7 we will discuss a number of the problems related to the methodology and results of the present research. We will also suggest the objectives for further research, and possible applications of the results of the present research, as well as introduce some general discussion and concluding remarks.

7.1 Research Limitations

One of the main limitations of the present research is that it is based on several sets of corpus data. The results of any corpus-based study are limited to the sample presented in the corpus. In the present research we have dealt with KOTONOHA Balanced Corpus of Contemporary Written Japanese. Therefore, our data are biased towards the written Japanese, although we can suggest that similar tendencies can be found in spoken Japanese, at least in case of standard Japanese (*hyōjungo*). Therefore, testing the Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives (HCHGA) on data sets from other corpuses of Contemporary Japanese, including spoken Japanese and corpuses of the Japanese language in Meiji, Taishō or Shōwa periods, can be one of the directions for the further research on the problem of *gairaigo* collocations. In addition, corpus data present only a part of the whole scope of Contemporary Japanese, to improve the quality of analysis it is important to integrate native

speakers' introspection-based analysis.

Another limitation is related to the fact that for the purpose of our study, HCHGA was tested only on a limited number of *gairaigo* adjectives. However, to prove that this tendency is true for a greater number of *gairaigo* adjectives, more data on various loanwords need to be analyzed. Ideally, all English-based *gairaigo* adjectives need to be listed and tested to determine if they follow HCHGA. This will allow of classifying them into the classes described in Chapter 6. Moreover, we cannot exclude the possibility of the existence of some hybrid classes or exceptions.

It is also important to mention that in the present research we studied only the cases when *gairaigo* adjectives are used to modify nouns. Therefore, we do not know what collocation preferences other parts of speech borrowed from English into Japanese can have. However, the number of verbs and adverbs borrowed from English is not considerable, and verbs often have to undergo deeper grammatical changes in the process of assimilation to Japanese. Therefore, they may not be appropriate as an object for further research of this problem.

Finally, the present research demonstrates the distribution of the use of *gairaigo* adjectives synchronically. However, contemporary frequencies and patterns of the use of *gairaigo* adjectives have developed over a period of time they have been functioning in the Japanese language. Their original collocation preferences could have been different from the current situation. Some of the loanwords adjectives were borrowed from English in Meiji period, whereas others were borrowed in recent years. Thus, the diachronic insight into the process of *gairaigo* adjectives' distribution in Japanese can give a new

perspective on this problem.

Therefore, main directions for the further research of the problem of *gairaigo* collocation in Contemporary Japanese are: the increase of the data set (both in quantity and quality), incorporating diachronic data into the study, and elaboration of a new methodology to process data from spoken Japanese.

7.2 The Possible Applications of the Present Research

In Chapter 1 of the present research we addressed the issue of the use of *gairaigo* and Japanese language education. We discussed that the existence of synonymic rows of words of different origins (*wago*, *kango* and *gairaigo*) causes a lot of difficulties for non-native speakers of Japanese, who do not have so-called 'language sense' that native speakers posses.

We believe that the results of the present research can be applied for clarification of some patterns and characteristics of the use of *gairaigo* adjectives found in Contemporary Japanese. For example, testing the Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives (HCHGA) on a larger sample of *gairaigo* adjectives can indicate their belonging to Class 1 (non-restricted) or Class 2 (restricted), and provide Japanese language learners with more information on the appropriate use of *gairaigo* adjectives in accordance with the intrinsic structure of the Japanese language.

Moreover, we suggest that collocation preferences is one of the decisive characteristics allowing of differentiating between the near synonyms of different origins (*wago, kango, gairaigo*), so frequently found in Contemporary

Japanese.

7.3 General Discussion and Conclusion

The issues of the appropriate use of *gairaigo* adjectives, their collocation preferences, and the differentiation between native and foreign near synonymic adjectives in Contemporary Japanese cause a lot of difficulties for both native speakers and Japanese language learners. In the present research we have introduced a new approach to determining the patterns of collocations and possible differentiation between (Sino-)Japanese and English-origin near synonymic adjectives.

The present research introduced the Homogeneous Collocation Hypothesis for *Gairaigo* Adjectives (HCHGA) and demonstrated that HCHGA can be applied for several sets of data: loan color terms, a group of *gairaigo* adjectives referring to physical qualities, and a list *gairaigo* adjectives extracted from a dictionary (starting from Japanese syllabic letters 'A' and 'I'). We have shown that there is an obvious bias in patterns of the collocations with *gairaigo* adjectives, i.e., *gairaigo* adjectives were followed by *gairaigo* nouns more often than by *wago/kango* nouns.

Therefore, we suggested that *gairaigo* adjectives are more often used to modify *gairaigo* nouns, rather than *wago/kango* nouns. However, by testing HCHGA on a sample from a dictionary we have found out that not all loanword adjectives have a tendency to be primarily used in collocations with *gairaigo* nouns. Therefore, the formulation and testing of HCHGA on *gairaigo*

adjectives, led us to the conclusion that they can be divided into two classes: restricted (following HCHGA) and non-restricted (not following HCHGA).

Based on the abovementioned results we can make several general suggestions about the nature of the Contemporary Japanese language.

First of all, the fact that some *gairaigo* adjectives demonstrate the tendency for homogeneity in collocations is in coherence with the quality of the Japanese language for differentiating lexis on numerous levels. The Japanese language differentiates vocabulary used for various levels of politeness, as well as written and spoken language. In the same way Japanese uses different vocabulary for speech events dealing with different topics. On top of that, the Japanese language tends to separate native origin and foreign origin phenomena, and not only in the choice of nouns referring to them, but also adjectives describing their qualities. This tendency of differentiating similar cultural phenomena of different origins has been discussed by Loveday and other sociolinguists. This differentiation can be found even in the case of a traditional Japanese meal such as cooked rice. Depending on the way it is served, coocked rice can be called *gohan* - Japanese style (in a bowl) or *raisu* Western style (on a flat plate.). Similar differentiation is found in case of hot drinks of different origin, while foreign drinks, such as coffee or tea are commonly used with the *garaigo* adjective for 'hot' *hotto*, more traditional drinks such as *ocha* 'green tea' are more naturally used with native adjectives *atsui* 'hot' or *atatakai* 'warm'. Another example from our results shows that if one uses *gairaigo* nouns such as *sukāto* 'skirt' or *hea* 'hair' it is more natural to use *rongu* for 'long' or *shōto* for 'short' instead of *nagai* or *mijikai*, respectively.

Therefore, the results of our corpus search for *gairaigo vs. wago/kango* near synonymic adjectives are in consistence with this tendency, demonstrating that loanword color terms and loanword adjectives referring to physical qualities are more often used to modify loanword nouns.

Secondly, the existence of two classes of *gairaigo* adjectives: following HCHGA and not following HCHGA can also be interpreted as the fact that Contemporary Japanese differentiates functions of *gairaigo*: introducing new phenomena vs. differentiating cultural phenomena. Thus, *gairaigo* adjectives of non-restrained class, i.e. not following HCHGA are probably used to introduce new concepts or alternative euphemisms for existing native words having strong connotations. However, *gairaigo* adjectives of restrained class, i.e. following HCHGA, are used to modify *gairaigo* nouns and/or for stylistic purposes, because English in Japan is considered to be the language of prestige.

Thirdly, in the process of the corpus search a new type of *gairaigo* compounds – phrase-based compounds (what we also referred to as morphological collocations) – was introduced. This new type of *gairaigo* compounds broadens the existing classification of imported and assembled *gairaigo* compounds. The phrase-based *gairaigo* compounds present free collocations in the donor language (English), and become compounds in the recipient language (Japanese). The elements composing phrase-based compounds usually can be used as separate modifiers, and are often found in several compounds.

In contrast to the previous studies based on questionnaires our approach stems from statistical analysis of corpus data. The corpus-based method employed for the data collection is different from Loveday's approach

(Loveday, 1996). We consider that this method offers a more profound quantitative analysis of the gathered data. To our knowledge, such approach to analysis of loanword collocations has not yet been implemented elsewhere.

Although our method is different from the methods employed by other researchers, the findings of the present study research are in coherence with extensive studies on loanwords conducted by Loveday (Loveday, 1996) and Stanlaw (Stanlaw, 1997). Therefore, our method exhibits successful application for two different tasks, thus our method symbiotically amalgamates abilities and power of inference of the previously considered research approaches. Furthermore, we consider that the results of our study can be used as a starting point for constructing the explicit rules to articulate the native-like linguistic sense.

Therefore, the results of our study have a potential of giving a new insight into the nature of functioning of loanwords in Contemporary Japanese. In addition, our research based on a sample from Contemporary Japanese has reliable practical outcome that can contribute to both: deeper understanding of assimilation processes of English loanword adjectives in Contemporary Japanese and teaching Japanese as a foreign language to non-native speakers.

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Corpus Database

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Appendix 1 Table 16 Sample List of *Gairaigo* Adjectives from a Dictionary

Reference: from Sanseido's Concise Dictionary of Katakana Words, 3rd edition, 2005

	Gairaigo modifier	English meaning	+*Gairaigo* noun		+*Wago/Kango* noun	
			with –*no/-na*	without –*no/-na*	with –*no/-na*	without –*no/-na*
1	*agurī* アグリー	Ugly	0	0	0	0
2	*aguressibu* アグレッシブ	Aggressive	6	1	12	0
3	*ājento* アージェント	Urgent	0	0	0	0
4	*asurecchiku* アスレッチク	Athletic	0	0	0	0
5	*asekushuaru* アセクシュアル	Asexual	0	0	0	0
6	*ātifisharu* アーティフィシャル	Artificial	0	1	0	0
7	*anonimasu* アノニマス	Anonymous	0	0	1	0
8	*āban* アーバン	Urban	0	85	1	7
9	*abusutorakuto* アブストラクト	Abstract	2	0	2	1

10	*abeiraburu* アベイラブル	Available	0	0	0	0
11	*aberēji* アベレージ	Average	0	25	0	0
12	*amikaburu* アミカブル	Amicable	0	0	0	0
13	*amyūjingu* アミュージング	Amusing	0	0	0	0
14	*amējingu* アメージング	Amazing	0	0	2	0
15	*amerikan* アメリカン	American	3	49	3	6
16	*amōraru* アモーラル	Amoral	0	0	0	0
17	*aroganto* アロガント	Arrogant	0	0	0	0
18	*aromatikku* アロマティック	Aromatic	0	4	1	0
19	*ankonshasu* アンコンシャス	Unconscious	0	0	0	0
20	*ankonbenshonaru* アンコンベンショ	Unconventional	0	0	0	0

	ナル					
21	*ansāton* アンサートン	Uncertain	0	0	0	0
22	*anshinkaburu* アンシンカブル	Unthinkable	0	0	0	0
23	*antacchaburu* アンタッチャブル	Untouchable	1	2	4	0
24	*anhappī* アンハッピー	Unhappy	0	0	1	0
25	*anbigyuasu* アンビギュアス	Ambiguous	1	0	0	0
26	*anbirībaburu* アンビリーバブル	Unbelievable	0	0	0	0
27	*anpurēyaburu* アンプレーヤブル	Unplayable	0	0	0	0
28	*anrīsunaburu* アンリーズナブル	Unreasonable	0	0	0	0
30	*ierō* イエロー	Yellow	16	97	8	4
31	*igunoranto* イグノラント	Ignorant	0	0	0	0
32	*ījī* イージー	Easy	1	0	8	0
33	*ījīgoingu*	Easy-going	0	0	0	0

	イージーゴイング					
34	*idiomatikku* イディオマティック	Idiomatic	0	0	1	0
35	*inobētibu* イノベーティブ	Innovative	0	0	1	0
36	*imōraru* イモーラル	Immoral	0	0	0	0
37	*irashonaru* イラショナル	Irrational	0	0	0	0
38	*irīgaru* イリーガル	Illegal	0	0	1	0
39	*iru* イル	Ill	0	0	0	0
40	*iregyurāru* イレギュラー	Irregular	5	1	13	1
41	*irojikaru* イロジカル	Illogical	0	0	0	0
42	*inkurūshibu* インクルーシブ	Inclusive	0	3	0	0
43	*inkurediburu* インクレディブル	Incredible	0	3	0	0
43	*insutanto*	Instant	4	176	10	68

	インスタント					
44	*insutinkutibu* インスティンクティブ	Instinctive	0	0	0	0
45	*insutorumentaru* インストルメンタル	Instrumental	1	3	2	0
47	*intakuto* インタクト	Intact	0	0	0	0
48	*indasuoriaru* インダストリアル	Industrial	0	24	0	1
49	*intānashonaru* インターナショナル	International	7	24	15	9
50	*intānaru* インターナル	Internal	0	5	0	0
51	*intarakutibu* インタラクティブ	Interactive	8	1	11	3
52	*intaresutingu* インタレスティング	Interesting	0	0	0	0
53	*indisupensaburu*	Indispensab	0	0	0	0

	インディスペンサ ブル	le				
54	*indibijyuaru* インディビジュア ル	Individual	0	0	0	0
55	*intimēto* インティメート	Intimate	0	0	1	0
56	*integuraru* インテグラル	Integral	0	4	0	0
57	*independento* インデペンデント	Independen t	0	1	1	2
58	*interijento* インテリジェント	Intelligent	0	13	2	9
59	*interekuchuaru* インテレクチュア ル	Intellectual	0	1	2	0
60	*intenshibu* インテンシブ	Intensive	0	6	0	0
61	*intenshonaru* インテンショナル	Intentional	0	0	0	0
62	*indoa* インドア	Indoor	5	9	7	6
63	*intorinshikku*	Intrinsic	0	0	0	0

	イントリンシック					
64	*intoreranto* イントレラント	Intolerant	0	0	0	0
65	*innosento* インノセント	Innocent	0	0	0	0
66	*inpāsanaru* インパーソナル	Impersonal	0	0	0	0
67	*inhyūman* インヒューマン	Inhuman	0	0	0	0
68	*infinitto* インフィニット	Infinite	0	0	0	0
69	*infōmaru* インフォーマル	Informal	7	16	20	3
70	*inpuresshibu* インプレッシブ	Impressive	0	0	0	0
71	*inperiaru* インペリアル	Imperial	0	0	0	0
72	*inpōtanto* インポータント	Important	0	0	0	0