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A Study of Loan Color Terms Collocation in Modern Japanese

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Abstract

The Japanese lexicon consists of Japanese-origin words (WAGO), Chinese-origin words (KANGO) and words borrowed from English and other European languages (GAIRAIGO). The acquisition of words from three sources results in the abundance of near synonyms without any clear rules when a particular synonym should be used. Loveday has hypothesized that WAGO/KANGO and GAIRAIGO concrete nouns are used to address similar phenomena of Japanese and Western origins, respectively. This is referred as Hypothesis of Foreign vs. Native Dichotomy (HFND). However, the matter of abstract nouns, adjectivals and their collocations remains unstudied. In contrast to the previous studies, based on questionnaires, our approach stems from statistical analysis of corpus data. Our results illuminate a distinguishable bias in the structure of collocations – nouns and adjectivals of the same origin tend to appear together more often than the ones of the different origins. Our finding implies extension of HFND to the level of collocations.

Keywords: cognitive linguistics, Modern Japanese, loanwords, corpus study

Introduction

The structure of the Japanese lexicon is a very complex and rapidly developing system. It consists of Japanese-origin words (WAGO), Sino-(Chinese)origin words (KANGO) and words borrowed from English and other European languages (GAIRAIGO). The adoption of words from Chinese has a long history, while borrowing of GAIRAIGO loanwords intensified starting from Meiji period (1868 - 1912).

However, GAIRAIGO increased 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).

The acquisition of words from three sources (WAGO, KANGO and GAIRAIGO) results in the abundance of near synonyms. The differentiation between such synonyms in some cases is clear-cut. For example, there is a historically developed stylistic constraint for Sino-origin synonyms to be used mainly in written speech as opposing to Japanese-origin words, which are widely used in oral speech.

However, the differentiation between WAGO/KANGO and GAIRAIGO near synonyms in Modern Japanese is a more complicated issue.

English loanwords in Japanese have been a topic of various studies by both native and foreign linguists for about 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), third mainly study sociolinguistic background and functions (Loveday, 1986, 1996).

At present, the number of GAIRAIGO is increasing rapidly and loanwords penetrate into different spheres of life. Dictionaries (Katakanago Jiten Consaizu (The Concise Dictionary of Katakana Words), etc.) in most cases do not state any clear differences in the meaning and usage for the abovementioned near synonyms.

On the other hand, the experience of studying and communicating in Japanese shows that it is not possible to substitute WAGO/KANGO and GAIRAIGO near synonyms freely.

Many of GAIRAIGO words are concrete nouns borrowed from Western culture that 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 difficult assimilation processes: orthographical, phonetic, grammatical changes etc.

The issue of loanwords increase and native words substitution has always been a topic not only of semantic but also of sociolinguistic research. The comprehensive results on this topic are presented by Loveday (1996). In this work, Loveday gives a historical overview starting with the contact of Japanese with the Chinese language and finishing by describing the role, types and functioning of English loans in Japanese mass media, etc.

According to Loveday (1996), GAIRAIGO words comprise about 10 per cent of the Modern Japanese lexicon. Although, the ratio of GAIRAIGO depends on the sphere of usage. GAIRAIGO are rarely used in official documents, political, religious, law lexicon. 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).

Loveday (1996) considers that the occurrence of the synonymic WAGO-GAIRAIGO pairs is the result of the "Westernization of Japanese culture". Such 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".

Therefore, Loveday (1996) has hypothesized Foreign vs. Native Dichotomy: 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, Modern Japanese 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-originated phenomena, while (Sino-) Japanese words are used to name native-originated phenomena. Loveday provides the following examples: *tō/shōji* (= sliding door) – *doa* ('door'); *futon* (= quilted bedding) – *beddo* ('bed'), etc.

On the other hand, Loveday's study does not consider any abstract nouns and adjective-derived (adjectivals) loanwords. However, GAIRAIGO abstract nouns and adjectivals are also of extreme importance.

One of the central places among the adjectivals is occupied by the color terms. Japanese color nomenclature is not a new object for studying. There was some research on loan color terms in Modern Japanese as well.

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 native color terms (such as MOMO-IRO (pink), DAIDAI-IRO (orange)) are replaced by English loanwords (PINKU and ORENJI respectively). He also suggested that the replacement took place "in reverse order to the Berlin and Kay evolutionary sequence"[1] (Stanlaw, 1997).

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

The shortcoming of Stanlaw's study is that neither the semantic and stylistic differences between native and loan words nor constraints on color terms usage are discussed.

The layer of loan color terms in modern Japanese has been poorly investigated. At present the correct application of loan color terms for non-native speakers, who do not posses any implicit rules or so-called native speakers' linguistic sense of intuition, is a difficult task.

Considering the importance of color terms and absence of any explicit roles of application, we focus our study on illuminating the regularities which can provide a hint for such explicit rules.

Extended Hypothesis

Loveday's hypothesis is easily applicable to concrete nouns. However, Loveday's research does not cover the

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[1] Berlin and Kay (1991) speculate that as languages evolve, they develop new basic color terms in a strict chronological sequence.

differences between GAIRAIGO derived from adjectives describing existing cultural phenomena and their WAGO/KANGO counterparts. For example, a phenomenon of 'white' color has already existed before borrowing GAIRAIGO adjectival HOWAITO, which is used to address the same color. The same is true for phenomena other than basic color terms. For instance, YANGU and WAKAI, which both refer to 'young' attribute.

In present study we focus on the descriptive role of adjectivals, therefore we consider the collocation of nouns and adjectivals in attributive positions. Consequently, in our study we focus not on the single words (nouns), but on collocations: pairs of nouns and adjectivals.

Our hypothesis is the extension of Loveday's Foreign vs. Native Dichotomy for collocations of nouns and adjectives/adjectivals. We assume that GAIRAIGO adjectivals are used for the description of foreign-originated phenomena and, thus, are more likely to collocate with GAIRAIGO nouns in attributive position. Similarly, WAGO/KANGO adjectives are used to describe the native-originated phenomena, that is, we expect WAGO/KANGO adjectives to be more inclined to collocate with WAGO/KANGO nouns rather than with GAIRAIGO nouns.

We call this hypothesis to be Extended Hypothesis of Foreign vs. Native Dichotomy (EHFND).

The important difference between Loveday's original hypothesis and our *extended hypothesis* is that the former one refers to the difference in usage of single words (concrete nouns), while the later one considers collocations. Therefore, our extended hypothesis deals with a more general linguistic level of collocation.

Thus, the problem is to differentiate the usage of collocations between GAIRAIGO and WAGO/KANGO near synonyms in Modern Japanese. To our knowledge, this matter has not been previously addressed.

Methodology

Objectives

Our primary objective is to test Extended hypothesis for the color terms in Modern Japanese. The secondary objective is to examine the matter of substitution of native color terms for the GAIRAIGO ones.

Materials: Corpus-based analysis

The objective of the given research is to define the tendency of collocation of English adjectives borrowed and assimilated to Modern Japanese.

The number of WAGO/KANGO vs. GAIRAIGO near synonymic pairs is considerably numerous. Since we are interested in the presence of correlation between attributes and words they modify the object of research is GAIRAIGO adjectivals derived from English adjectives and Japanese words corresponding to them, we focus on basic color terms. For the purpose of the present study, we have selected eight loan basic color terms, which are frequently used in attributive position: HOWAITO, BURAKKU,

REDDO, IERO:, BURAUN, PA:PURU, PINKU, GURE:/GUREI. They correspond to (Sino-) Japanese color terms SHIROI (white), KUROI (black), AKAI (red), KIIRO (yellow), CHAIRO (brown), MURASAKIIRO (purple), MOMOIRO (pink), HAIIRO (grey), respectively.

The reasons for choosing these color terms are

- all of the abovementioned GAIRAIGO color terms have long-term assimilation to the Japanese language (since Meiji period, more than 100 years);
- these GAIRAIGO color terms have a clear-cut correspondence to WAGO/KANGO near synonyms, that is why GURI:N (green) and BURU: (blue) were excluded from the study as their correspondence to native color terms (AOI and MIDORIIRO) is ambiguous;
- selected loanwords belong to one semantic category 'basic color terms', that is why they give a wider outlook of the Modern Japanese vocabulary.

Method

The corpus-based analysis of GAIRAIGO collocation patterns is the main method of the analysis in the present study. The corpus used for data collection is KOTONOHA corpus (Balanced Corpus of Contemporary Written Japanese) available on-line[2]. This corpus was selected because it is considered to be a well-balanced corpus of Modern Japanese, including not only printed sources (such as newspapers, magazines and literature), but also web resources (such as Yahoo blogs and Yahoo answers).

KOTONOHA corpus was searched to compare the frequencies for four following collocation patterns: 1) attributive GAIRAIGO + NO + GAIRAIGO noun; 2) attributive GAIRAIGO + NO + WAGO/KANGO noun; 3) attributive WAGO/KANGO + (NO)[3] + GAIRAIGO noun; and 4) attributive WAGO/KANGO + (NO) + WAGO/KANGO noun.

The cases when selected GAIRAIGO were referring to a person's name (like HOWAITO NO IKEN - 'the opinion of Mr. White'), where eliminated from the search results. The idiomatic expressions like 'blue blood', 'White House', 'black funds', etc. have been excluded from the study as well.

Results and Data Analysis

Collocation Frequency Data. The collocation frequency data for each color term are presented in Tables 1 through 8. The main means for statistic analysis are Chi-square test of independence of categorical data and Binomial test. However, if the conditions of Chi-square application were violated, Fisher's exact test was used instead.

HOWAITO vs. SHIROI pair. The results on HOWAITO and SHIROI collocations are presented in Table 1.

Table 1: HOWAITO vs. SHIROI collocation.

	Gairaigo nouns (%)	Wago/kango nouns (%)	Total
Howaito	23 (77%)	7 (23%)	30 (100%)
Shiroi	47 (30%)	109 (70%)	156 (100%)
Total	70	116	186

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 adjective/adjectival and origin of noun ($\chi^2(1, 186) = 23.218$, $p < 0.001$). On the other hand, the Binomial test for pairs (HOWAITO + GAIRAIGO nouns) vs. (HOWAITO + WAGO/KANGO nouns) reveals significant difference in frequencies ($p<0.05$). The Binomial test for pairs (SHIROI + GAIRAIGO nouns) vs. (SHIROI + WAGO/KANGO nouns) also reveals significant difference in frequencies ($p<0.001$). Therefore, for HOWAITO and SHIROI, there is obvious preference of WAGO/KANGO nouns vs. GAIRAIGO.

The Binomial test reveals significant difference ($p<0.001$) in frequencies of HOWAITO vs. SHIROI appearance – 30 vs. 156 hits, respectively. Therefore, SHIROI is used more often.

BURAKKU vs. KUROI pair. The results for BURAKKU and KUROI collocations are presented in Table 2.

Table 2: BURAKKU vs. KUROI collocations.

	Gairaigo nouns (%)	Wago/kango nouns (%)	Total
Burakku	14 (70%)	6 (30%)	20 (100%)
Kuroi	87 (23%)	295 (77%)	382 (100%)
Total	101	301	402

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 origin of adjective/adjectival and origin of noun ($\chi^2(1, 402) = 22.531$, $p < 0.001$). On the other hand, the Binomial test for pair (BURAKKU + GAIRAIGO nouns) vs. (BURAKKU + WAGO/KANGO nouns) reveals no significant difference in frequencies ($p=0.115>0.05$). However, the Binomial test for pair (KUROI + GAIRAIGO nouns) vs. (KUROI + WAGO/KANGO nouns) reveals significant difference in frequencies ($p<0.001$). Therefore, for KUROI there is obvious preference of WAGO/KANGO nouns vs. GAIRAIGO. Although the same tendency is developing for the BURAKKU, there is no statistical evidence to support our hypothesis.

The Binomial test reveals significant difference (p<0.001) in frequencies of BURAKKU vs. KUROI appearance – 20 vs. 382 hits, respectively. Therefore, KUROI is used more often.

REDDO vs. AKAI pair. The results for REDDO and AKAI collocations are presented in Table 3.

Table 3: REDDO vs. AKAI collocations.

	Gairaigo nouns (%)	Wago/kango nouns (%)	Total
Reddo	2 (50%)	2 (50%)	4 (100%)
Akai	87 (26%)	247 (74%)	334 (100%)
Total	89	249	338

The Chi-square test of independence of categorical data is not applicable for the data from Table 3, since for two cells the expected count (2) less than 5. Therefore, Fisher's exact test has been applied. This test has reveals no significant dependencies (p=0.284>0.05).

In this case, the sample size for pairs including REDDO is only 4 occurrences. Therefore, due to small sample size the proper analysis of pairs (REDDO+GAIRAIGO nouns) vs. (REDDO+WAGO nouns) cannot be conducted. On the other hand, we have tested the frequencies of pairs (AKAI+GAIRAIGO nouns) vs. (AKAI+WAGO nouns). The Binomial test reveals statistically significantly difference (p < 0.001). This result illustrates a bias towards preference of WAGO nouns to be used with AKAI.

The Binomial test reveals significant difference (p<0.001) in frequencies of REDDO vs. AKAI appearance – 4 vs. 334 hits, respectively. Therefore, AKAI is used more often.

IERO: vs. KIIRO pair. Next, we consider IERO: and KIIRO collocation data. The results are presented in Table 4.

Table 4: IERO: vs. KIIRO collocations.

	Gairaigo nouns (%)	Wago/kango nouns (%)	Total
Iero:	16 (67%)	8 (33%)	24 (100%)
Kiiro	136 (32%)	294 (68%)	430 (100%)
Total	152	302	454

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 adjective/adjectival and origin of noun (χ^2(1, 454) = 12.531, p < 0.001). On the other hand, the Binomial test for pair (IERO: + GAIRAIGO nouns) vs. (IERO: + WAGO/KANGO nouns) reveals no significant difference in frequencies (p=0.152>0.05). However, the Binomial test for pair (KIIRO + GAIRAIGO nouns) vs. (KIIRO + WAGO/KANGO nouns) reveals significant difference in frequencies (p<0.001). Therefore, for KIIRO there is obvious preference of WAGO/KANGO nouns vs. GAIRAIGO. Although the same tendency is developing for

IERO:, there is no statistical evidence to support our hypothesis. The Binomial test reveals significant difference (p<0.001) in frequencies of IERO: vs. KIIRO appearance – 24 vs. 430 hits, respectively. Therefore, KIIRO is used more often.

BURAUN vs. CHAIRO pair. The results for BURAUN and CHAIRO collocations are presented in Table 5.

Table 5: BURAUN vs. CHAIRO collocations.

	Gairaigo nouns (%)	Wago/kango nouns (%)	Total
Buraun	26 (65%)	14 (35%)	40 (100%)
Chairo	110 (28%)	289 (72%)	399 (100%)
Total	136	303	439

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 adjective/adjectival and origin of noun (χ^2(1, 439) = 23.822, p < 0.001). On the other hand, the Binomial test for pair (BURAUN + GAIRAIGO nouns) vs. (BURAUN + WAGO/KANGO nouns) reveals no significant difference in frequencies (p=0.081>0.05). However, the Binomial test for pair (CHAIRO + GAIRAIGO nouns) vs. (CHAIRO + WAGO/KANGO nouns) reveals significant difference in frequencies (p<0.001). Therefore, for CHAIRO there is obvious preference of WAGO/KANGO nouns vs. GAIRAIGO. Although the same tendency is developing for BURAUN, there is no statistical evidence to support our hypothesis.

The Binomial test reveals significant difference (p<0.001) in frequencies of BURAUN vs. CHAIRO appearance – 40 vs. 399 hits, respectively. Therefore, CHAIRO is used more often.

PA:PURU vs. MURASAKIIRO pair. Table 6 presents the results for PA:PURU and MURASAKIIRO collocations.

Table 6: PA:PURU vs. MURASAKIIRO collocations.

	Gairaigo nouns (%)	Wago/kango nouns (%)	Total
Pa:puru	12 (71%)	5 (29%)	17 (100%)
Murasakiiro	50 (24%)	161 (74%)	211 (100%)
Total	62	166	228

The Chi-square test of independence of categorical data is not applicable for the data from Table 6, since for one cell the expected count equals 5. Therefore, Fisher's exact test has been applied. This test has revealed significant dependencies (p<0.001).

On the other hand, the Binomial test for pair (PA:PURU + GAIRAIGO nouns) vs. (PA:PURU + WAGO/KANGO nouns) reveals no significant difference in frequencies (p=0.143>0.05). However, the Binomial test for pair (MURASAKIIRO + GAIRAIGO nouns) vs.

(MURASAKIIRO + WAGO/KANGO nouns) reveals significant difference in frequencies (p<0.001). Therefore, for MURASAKIIRO there is obvious preference of WAGO/KANGO nouns vs. GAIRAIGO. Although the same tendency is developing for PA:PURU, there is no statistical evidence to support our hypothesis.

The Binomial test reveals significant difference (p<0.001) in frequencies of PA:PURU vs. MURASAKIIRO appearance – 17 vs. 211 hits, respectively. Therefore, MURASAKIIRO is used more often.

GURE:/GUREI vs. HAIIRO pair. The search results for GURE:/GUREI and HAIIRO collocations are presented in Table 7.

Table 7: GURE:/GUREI vs. HAIIRO collocations.

	Gairaigo nouns (%)	Wago/kango nouns (%)	Total
Gure:/Gurei	207 (60%)	136 (40%)	343 (100%)
Haiiro	66 (23%)	225 (74%)	291 (100%)
Total	273	361	634

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 adjective/adjectival and origin of noun (χ^2(1, 634) = 91.114, p < 0.001). On the other hand, the Binomial test for pairs (GURE:/GUREI + GAIRAIGO nouns) vs. (GURE:/GUREI + WAGO/KANGO nouns) reveals significant difference in frequencies (p<0.001). The Binomial test for pairs (HAIIRO + GAIRAIGO nouns) vs. (HAIIRO + WAGO/KANGO nouns) also reveals significant difference in frequencies (p<0.001). Therefore, for both GURE:/GUREI and HAIIRO, there is obvious preference of WAGO/KANGO nouns vs. GAIRAIGO.

The Binomial test reveals significant difference (p=0.043<0.05) in frequencies of GURE:/GUREI vs. HAIIRO appearance – 343 vs. 291 hits, respectively. Therefore, GURE:/GUREI is used more often.

PINKU vs. MOMOIRO pair. Finally, the results for PINKU and MOMOIRO collocations are presented in Table 8.

Table 8: PINKU vs. MOMOIRO collocations.

	Gairaigo nouns (%)	Wago/kango nouns (%)	Total
Pinku	232 (58%)	169 (42%)	401 (100%)
Momoiro	15 (35%)	28 (65%)	43 (100%)
Total	247	197	444

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 origin of adjective/adjectival and origin of noun (χ^2(1, 444) = 8.303, p < 0.001). On the other hand, the Binomial test for pairs (PINKU + GAIRAIGO nouns) vs. (PINKU + WAGO/KANGO nouns) reveals significant difference in frequencies (p<0.001). The Binomial test for pairs (MOMOIRO + GAIRAIGO nouns) vs. (MOMOIRO + WAGO/KANGO nouns) also reveals significant difference in frequencies (p<0.001). Therefore, for PINKU and MOMOIRO, there is obvious preference of WAGO/KANGO nouns vs. GAIRAIGO.

The Binomial test reveals significant difference (p<0.001) in frequencies of PINKU vs. MOMOIRO appearance – 401 vs. 43 hits, respectively. Therefore, PINKU is used more often.

Discussion and Conclusion

In present study we have introduced a new approach to differentiation between (Sino-)Japanese and English-origin near synonyms. In contrast to the previous studies, which were based on questionnaires, our approach stems from statistical analysis of corpus data.

We have shown that there is an obvious bias in the structure of collocations: nouns and adjectives/adjectivals of the same origin (WAGO/KANGO or GAIRAIGO) tend to appear together more often than nouns and adjectives/adjectivals of different origins. In all eight cases considered, we have found statistical evidence for such bias to exist for WAGO/KANGO adjectives. For GAIRAIGO adjectivals, in the case of HOWAITO, GURE:/GUREI and PINKU it was also possible to support this assumption with statistical evidence. In the case of REDDO, the sample size was too small. In five remaining cases, there was no statistical evidence, but the same tendency of preferring GAIRAIGO nouns against WAGO/KANGO nouns by GAIRAIGO adjectivals can be observed.

In general, for seven pairs out of eight, except for REDDO vs. AKAI, we have found statistical evidence for dependencies in categorical data.

Summarizing, we consider that this volume of evidence is enough to support our Extended hypothesis, derived from original Loveday's Foreign vs. Native Dichotomy (Loveday, 1996). On the other hand, our hypothesis refers to the structure consisting of two words, i.e. adjectives/adjectivals plus nouns, while Loveday (Loveday, 1996) has investigated only concrete GAIRAIGO and WAGO/KANGO nouns referring either to foreign or native objects, respectively.

Therefore, we illustrated an existence of Foreign vs. Native Dichotomy at the level of collocations.

We have also compared frequencies of the appearance of color terms. Our results show that among the selected pairs of color terms, there are both cases when native color terms prevail the borrowed ones and vice versa (GURE:/GUREI and PINKU).

The results for GURE:/GUREI and PINKU are in coherence with the Stanlaw's assumption of the replacement of native words with borrowed ones (Stanlaw, 1997). According to Berlin and Kay (1991), the color terms appear in language in the hierarchical order starting from more general terms covering white, black, red color categories

and ending with more specific color categories like pink, orange, grey and purple. Stanlaw (1997) suggests that the replacement of native color terms starts from the end of the Berlin and Kay's hierarchy (Berlin and Kay, 1991). That is colors like GURE:/GUREI and PINKU should be substituted earlier than other color terms. The results of our statistical analysis indicate that GURE:/GUREI and PINKU are used more often than corresponding native color terms. This finding does not provide exhaustive evidence for replacement dynamics, but we consider that the more frequent usage of one color term (loanword) against another one (native color term) can be regarded as the indication of ongoing process of substitution in accordance with the results of Stanlaw's study (Stanlaw, 1997).

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 the analysis of loanword collocations has not yet been implemented elsewhere.

On the other hand, the results of the present research are in coherence with both Loveday's (Loveday, 1996) and Stanlaw's approaches (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.

Many native speakers cannot explain a particular rule to use either of near synonyms. According to Dienes and Berry (1997), implicit learning means that information is acquired without intension and the resulting knowledge is difficult to express. Therefore, native-like linguistic sense of usage of near synonyms can be considered as an implicit knowledge possessed by native speakers. On the other hand, our statistical data uncovers essential regularities in usage of near synonyms. We assume these regularities to be a part of implicit language knowledge. Thus, the approach for analysis of near synonyms has a potential to connect the pure linguistic study of collocation with field of implicit learning and knowledge. Therefore, 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 (implicit knowledge).

For the purpose of our study, only the group of basic color terms has been employed. We have provided evidence that Extended Hypothesis of Foreign vs. Native Dichotomy is likely to be true for such data. However, to prove that this tendency is general among GAIRAIGO more data on various loanwords needs to be analyzed. On the other hand, corpus data represents only a part of the whole scope of Modern Japanese.

To improve the quality of analysis it is important to integrate native speakers' introspection-based analysis. Thus, two main directions for further research are increasing data set and extending methods of analysis.

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