

【論文】

The effect of idiom familiarity and knowledge of idiom meaning on the idiom transparency judgments of second language learners (A case study of Japanese EFL learners)

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第二言語学習者の慣用句の透明度の判断における慣用句の親密度
および慣用句の熟達度の効果 [日本人英語学習者の事例研究]

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Abstract : The study examined the relationship between idiom familiarity, knowledge of idiom meaning and idiom transparency judgments in L2. A group of 23 intermediate Japanese learners of English were asked to provide familiarity ratings, transparency judgments, and definitions for 30 English idioms, 27 of which had semantically equivalent but compositionally different idiomatic counterparts in Japanese and 3 phrases for which semantic equivalents in L1 also shared the same structural properties. Transparency ratings were repeated after the instructional treatment. A comparison of pre-treatment and post-treatment transparency scores showed that knowledge of conventional idiom meanings had a strong effect on the learners' perceptions of idiom transparency. Transparency judgments, however, were not found to be a reliable predictor of the learners' ability to infer figurative meanings of the idiomatic phrases. Idiom familiarity was not found to have a significant effect on idiom comprehension or on transparency judgments either. A limited positive effect of language transfer on L2 idiom comprehension and transparency ratings was observed.

Keywords : idiom transparency, idiom familiarity, idiom comprehension, L2 idiom acquisition, language transfer, Japanese EFL learners

本研究は、第二言語学習者の慣用句の親密度、慣用句の熟達度および慣用句の透明度の判断との関係について説明する。英語を学習する23名の中級レベルの日本人のグループを対象に、30の英語の慣用句の熟知度の評価、透明度の判断および定義について質問した。30の慣用句のうち27は、意味的には同じだが、構成上日本語と異なる部位があり、残りの熟語3つはL1と意味的に同じで同じ構造的特徴がある。透明度の評価は、直接指導をした後に繰り返し行った。指導前と指導後の透明度を比較すると、従来の慣用句の意味を理解していれば、慣用句の透明度に対する認知度に効果があるという結果がでている。但し、透明度の判断は、慣用句の比喩的な意味を推測する能力を予測するという点では、信頼できる因子になるとは言えない。慣用句の親密度は、慣用句の把握度または透明度の判断のいずれにも効果的であるとも判断できない。言語転移のプラスの効果は、L2の慣用句の理解度および透明度の評価においては限定的であることがわかった。

1. Introduction

Traditionally idioms were seen as frozen multi-word units whose meaning could not be inferred from the individual meanings of the component words (e.g., Cruse, 1986; Katz, 1973; Moon, 1997). A classic example found in literature is the idiom ‘*to kick the bucket*’, whose figurative meaning ‘*to die*’ cannot be inferred from its compositional elements. However, the presumed semantic opaqueness of idiomatic expressions was questioned by studies in cognitive semantics (Lakoff, 1987; Lakoff & Johnson, 1980) as well as etymological research (Flavell & Flavell, 2000; Speake, 2000), which revealed that the meaning of a large number of idiomatic expressions is conceptually or historically motivated.

In their seminal work, *Metaphors We Live By*, Lakoff and Johnson (1980)

argued that many figurative expressions represent linguistic realizations of *conceptual metaphors*, which can be defined as figurative comparison in which one idea (or conceptual domain) is understood in terms of another. For example, idioms such as *'to leave a bad taste in one's mouth'*, *'to smell fishy'*, *'to sink one's teeth into something'*, *'food for thought'*, *'to spoon feed'*, and *'on the back burner'* can be viewed as linguistic realizations of the conceptual metaphor IDEAS ARE FOOD. According to Lakoff and Johnson (1980), conceptual metaphors are established through prior experience and that they underlie human thought, perception and language. Consequently, lexical choices in figurative language are not arbitrary, but a reflection of the language-users' experience of their physical, social and cultural environment.

Dictionaries of idiom origin also show that the meaning of a large number of idiomatic expressions can be explained by the historical context in which they originated. For example, expressions such as *'show someone the ropes'*, *'on an even keel'* or *'when your ship comes in'* can all be traced back to sailing, while the idioms *'to give someone their head'* or *'give someone a leg up'* are linked to horses. In short, most idiomatic expressions are believed to be semantically motivated, and only a small number of so-called *'core-idioms'* are considered to be completely opaque (Grant & Bauer, 2004).

However, the fact that the meaning of most figurative idioms can be rationalized does not automatically imply that conceptual metaphors or etymological associations play a role during natural idiom processing. Most native speakers acquire idioms through exposure and have no knowledge of the origin of idioms such as *'through thick and thin'* or *'red*

herring'. The role that conceptual metaphors play during idiom comprehension has also been considered controversial. The results of some studies (e.g., Gibbs, 1990, 1992; Gibbs & O'Brien, 1990; Nayak & Gibbs, 1990) suggest the automatic activation of conceptual metaphors during idiom processing. Others found no evidence that conceptual metaphors play any role during idiom comprehension (e.g., Keysar & Bly, 1995, 1999; Glucksberg, Brown & McGlone, 1993). Keysar and Bly (1999) observed that when idiom meanings were not familiar, native speakers' interpretation and their perceptions of idiom transparency were influenced by the context in which the idioms were presented, rather than by the restrictions imposed by the pre-existing conceptual structures. Based on these findings, they concluded that while idioms may instantiate conceptual metaphors, conceptual mappings *per se* do not contribute to the meaning of idiomatic expressions. Hence, they called for a distinction to be made between transparency that results from conventional use and transparency that is conceptually motivated.

Idiom transparency indicates the degree to which a link can be established between an idiom's form and its figurative meaning. It is an important property of idiomatic expressions that affects the nature of idiom processing and their processing speed (Gibbs & Nayak, 1989; Gibbs, Nayak, & Cutting, 1989; Titone and Connine 1999). The question about the sources of idiom transparency intuition remains one of the most controversial issues in the idiom literature. While it is generally accepted that idioms vary in terms of their semantic transparency, it is still not clear whether the perceptions of transparency are a result of exposure and learned knowledge of idiom meanings, or whether they reflect some idiom-inherent properties, such as their lexical make-up or

underlying conceptual metaphors.

In order to shed some light on this issue, a number of studies in recent years have examined idiom transparency judgments of second language learners. The possible influence of factors such as learners' proficiency, exposure to the target idioms, and availability of contextual support were examined. The results were mixed.

Abel (2003) compared English idiom decomposability (transparency) judgments of advanced German learners of English with those of native speakers and found that the learners were more likely to judge idioms as decomposable (transparent) than the native speakers, regardless of the compositional structure of the phrases. However, with the increased language exposure (i.e., increased familiarity with the idioms) they started to show transparency judgments similar to those of the native speakers.

Bortfield (2003) examined cross-linguistic idiom comprehension for phrases of different levels of semantic transparency. She found that native speakers of English were able to conceptually categorize literal translations of idioms from Latvian and Mandarin, although they had no prior knowledge of these languages. These findings were interpreted as evidence that semantic transparency is an inherent feature of the idiom that does not depend on idiom familiarity.

Steinel, Hulstijn and Steinel (2007) looked into the effect of direction of learning in a paired-associate task, direction of testing, idiom imageability, and idiom transparency on the development of receptive and productive idiom knowledge in L2. They found that transparency

facilitated idiom comprehension but not production. The authors concluded that transparency did not have a mnemonic effect and, therefore, was not a good predictor of learning.

Skoufaki (2009) investigated the extent to which advanced Greek learners of English could infer the meaning of unfamiliar idioms that native speakers judged to have high or low transparency levels. The target phrases were presented with and without contextual support. She found that low-transparency idioms resulted in a larger number of interpretations, that both types of idioms received more definition types when the phrases were presented without contextual support, and that high-transparency idioms were more likely to receive correct interpretations, especially in the no-context condition. Based on these findings, the author expressed support for the hybrid view of idiom transparency. The fact that high-transparency idioms generated a smaller number of response types in both conditions was interpreted as evidence that idiom transparency does not solely depend on prior knowledge of figurative meanings but also on the idiom's inherent features. The increased number of correct responses when contextual support was available was taken as evidence that contextual clues represent the main source of transparency intuitions. Skoufaki concluded that idiom transparency judgments do not only stem from linking an idiom's form with its already familiar meaning, but also from the use of the idiom's inherent features and contextual clues.

Aljabri (2013) investigated how learners' proficiency levels may affect their judgments of idiom transparency and idiom familiarity (perceptions of frequency of encounters of the target idioms). He found that more

advanced learners gave higher familiarity ratings, but language proficiency did not seem to affect the learners' perceptions of idiom transparency. The findings were interpreted as evidence that transparency is a fixed property of idioms.

Boers and Webb (2015) compared multiword unit transparency ratings by EFL teachers (native speakers of English) with those of language learners and found large discrepancies present among the teachers' ratings, as well as between the teachers' and the learners' transparency judgments. The expressions that the learners judged as non-transparent were not limited to the idioms in the narrow sense. The authors pointed out the danger of teachers and study material writers overlooking some of phrases that learners might have problems with.

The inconsistencies in findings in both L1 and L2 research highlight the need for further studies on the factors that may influence language users' perceptions of semantic transparency of figurative idioms. The experiment reported in this paper was designed to help answer some of the questions surrounding the controversy over the sources of idiom transparency intuitions.

2. Present study

2.1 Objectives

The primary aim of this study was to assess the extent to which learners' intuitions about idiom transparency depend on the factors such as idiom familiarity and their knowledge of the figurative meanings of the phrases. This means that idiom transparency was approached as a psycholinguistic phenomenon, denoting learners' subjective perceptions

of the degree to which idiom components contribute to the interpretation of the phrase, rather than descriptive norms drawn from the judgments of native speakers. The study also examined the correlation between idiom familiarity and transparency judgments and the learners' ability to infer the meaning of the L2 idioms provided without contextual support.

2.2 Research questions and hypotheses

The study examined the following questions:

RQ1: Does idiom familiarity lead to better idiom comprehension?

The hypothesis of the study was that higher familiarity ratings would result in better comprehension of the target idioms. In the context of this study, idiom familiarity was defined as a subjective measure of the frequency with which an individual encounters an idiom. Familiarity ratings reflected the learners' own perceptions of their exposure to the target idioms, not the frequency with which these expressions may occur in the general corpora.

Frequency of exposure is considered an important factor in vocabulary acquisition. Frequent vocabulary is processed more easily and more accurately (de Groot, 1992). According to the '*language experience hypothesis*' proposed by Ortony, Turner, and Larsen-Shapiro (1985), the development of knowledge of figurative language depends on the amount of exposure to non-literal usage. Schweigert (1986) and Cronk and Schweigert (1992) showed that reading rates for familiar idioms, that is, idioms that are encountered more frequently in spoken and written discourse, were shorter than those for less familiar idioms. This

means that language users' experiences with idiomatic language are an important variable in the processing of figurative meanings.

However, mere exposure to a lexical item does not guarantee its retention. As Waring and Takaki (2003) point out, incidental learning requires multiple exposures within a relatively short period of time. Even when the texts are modified to increase the frequency of exposure, the target items may not always be retained. Webb, Newton and Chang (2013) measured incidental learning of collocations from graded readers after 1, 5, 10 and 15 encounters. While the number of encounters was found to have a positive effect on learning, even 15 encounters did not always result in an uptake of the target phrases. One possible reason may be that learners do not always notice the items in the text. Learning requires attention and awareness (Schmidt, 1990) and if learners do not perceive particular linguistic features in the input, they are not likely to be remembered, despite their high frequency of occurrence. Therefore, idiom familiarity as learners' subjective measure of their exposure to the target idioms was expected to be a better predictor of their comprehension of the phrases than the more objective measures such as corpus frequency counts.

RQ2: Does idiom familiarity affect transparency ratings?

The evidence with regard to the effect that idiom exposure may have on transparency intuitions is inconclusive. Nippold and Taylor (2002) compared familiarity and transparency judgments of children and adolescents in L1 and found that while children were less familiar with the idioms and had more difficulties interpreting them, they did not differ

from adolescents in their transparency judgments. The authors interpreted these findings as an indication that idiom transparency might be a relatively fixed property of idioms, while familiarity and comprehension were subject to age variation. In L2 research, some studies, like the above-discussed Aljabri's (2013) and Bortfield's (2003) experiments also suggest that idiom transparency is a fixed, inherent property of idioms independent of the frequency with which language users encounter the phrases. Other studies, like Abel's (2003) experiment, suggest that language exposure affects transparency judgments.

The hypothesis of this study was that familiarity with the target idioms would affect idiom transparency ratings. The prediction stemmed from the fact that native speakers acquire idiom knowledge primarily through encounters in usage. Although without explicit instruction, the learners might not have developed a full understanding of the figurative meanings. The assumption was that for the phrases that they could recall seeing or hearing many times they would have developed some intuition about their figurative connotations and that this implicit knowledge would make them perceive idiomatic expressions as more transparent.

RQ3: Does the change in the level of understanding of the idiomatic meaning affect the learners' perceptions of idiom transparency?

The hypothesis of the study was that better comprehension of figurative meanings would result in higher transparency ratings. The assumption was motivated by the aforementioned studies of Keysar and Bly (1995, 1999), who argued that intuitions about the transparency of idioms result

from conventional use, rather than conceptual motivation. In other words, idioms were transparent to native speakers because they already knew their meanings and used that knowledge to project relevant structures on compositional elements of the phrases. When idiom meanings were not familiar, native speakers' interpretation and their perceptions of idiom transparency were found to be influenced by the context in which the idioms were presented, rather than by the restrictions imposed by pre-existing conceptual structures. Following Keysar and Bly's observations, the prediction of this study was that learners' transparency ratings would increase as a result of the instructional treatment.

2.3 Participants

The experiment was designed as an exploratory study and it involved one group of 23 first-year Japanese university students. The students' levels varied (CASEC scores 395~745), but the majority of the participants were at a low-intermediate level (CASEC average 530, SD=98.1), which corresponds approximately to a TOEIC score of 430 or B1 level on the CEFR scale. The study was integrated in the regular coursework. Classes were held twice a week for a total of three hours over a period of 15 weeks. The main objective of the course was the development of the students' communicative competence. To that end, a significant portion of the coursework was devoted to vocabulary building, with extensive work being done on collocations and fixed expressions, including the idioms on which the data reported in this study were based.

2.4 Materials

Thirty Japanese-English idiom pairs were selected from the book ‘101 Japanese Idioms’ (Maynard & Maynard, 2009). The book was originally written to help English speakers master common Japanese idioms, but as it includes idiom pairs and examples of usage in both languages, it was considered a useful resource for Japanese learners of English as well.

The criteria for idiom selection was that the phrases had idiomatic counterparts in Japanese, but that their lexical make-up was different (e.g., *goma suri* (*sesame grinding*) = *apple polishing*; *abata mo ekubo* (*pockmarks are dimples*) = *love is blind*). Initially, 33 idioms were selected. Two native Japanese speakers, both highly proficient in English, were then asked to check whether the selected phrases were truly semantic equivalents. Three phrases were judged as having different nuances and were subsequently eliminated from the study.

The Japanese raters, however, were not informed of the objectives of the study and the subsequent analysis revealed that three of the selected English idioms had alternative surface forms in Japanese that had an identical lexical make-up with their English targets. The three idioms in question were: (1) *silence is golden* which matches the Japanese expressions 言わぬが花 (*iwanu ga hana* = not saying is the flower) and 沈黙は金 (*chinmoku wa kin* = silence is golden), (2) *pearls before swine* which corresponds to both 猫に小判 (*neko ni koban* = a gold coin before the cat) and 豚に真珠 (*buta ni shinju* = pearls before swine), and (3) *love is blind* for which the Japanese equivalents are あばたもえくぼ (*abata mo ekubo* = pockmarks (are seen) as dimples) and 恋は盲目 (*koi wa momoku* = love is blind). After some consideration, these three idioms were

included in the study in order to see whether they would result in higher transparency ratings and lead to an automatic recall of their L1 counterparts. However, the responses for the three idioms were analyzed separately from the other data. A complete list of the target idioms can be found in Appendix 1.

2.5 Procedures

2.5.1 Pre-treatment evaluation

The thirty target idioms were taught over three sessions with ten idioms covered in each session. Each session lasted approximately fifty minutes. At the beginning of each session, the learners were given a list of ten idioms presented without the contextual support and asked to rate on a scale of 1 to 5 how often they felt they had heard or seen them before (1 = many times, 2 = several times, 3 = a few times, 4 = once, 5 = never). The familiarity assessment task was followed by an idiom interpretation task where the students were asked to try to guess the meaning of the phrases based on their lexical components. The students were also instructed to circle unfamiliar words. The teacher then clarified the meanings of these words. The rationale was that without the understanding of the literal meanings of the individual words, it would have been impossible for the students to infer the figurative meanings of the phrases. Both L1 and L2 definitions were accepted.

After the learners completed the interpretation task, they were given a list of English-Japanese idiom equivalents and asked to rate how easy or difficult they felt it was to guess the meaning of the English idioms from the individual words in the phrases. The rating scale was from 1 to 5, where 1 meant *very easy* and 5 meant *very difficult*. For the three English

idioms for which more than one corresponding Japanese idioms had been identified, only the lexically different L1 counterparts were included in the list. Samples of pre-treatment rating tasks, instructional activities and post-treatment evaluation tests can be found in Appendix 2.

2.5.2 Idiom treatment

As one of the research questions concerned the possible changes in the learners' perception of idiom transparency as a result of better knowledge of their meaning, the treatment was primarily designed to help the learners remember the meaning of the target phrases rather than practice their usage. The instruction consisted of three stages.

First, the learners were presented with short dialogues or narratives that illustrated the idiom usage. All examples were selected from the '*101 Japanese Idioms*' book and provided in English only. The examples were followed by a list of English definitions, next to which the learners were instructed to write the corresponding target idioms. This stage provided learners with some insight into how the idioms could be used, but its main purpose was to strengthen the links between the figurative meanings and the surface forms.

Next, the ten target idioms were divided into two sets of five and the students were asked to work in pairs. Each student received a sheet that had Japanese-English equivalents for one set. The students were then asked to be the "coaches" for the idioms on their list. They were instructed to read the Japanese idioms to their partners, who had to provide English translations of the phrases. If the responding partner made a mistake, the "coaches" would correct them. The students were

then asked to switch roles so that all ten idioms were covered. The purpose of this stage was to strengthen the links between L1 and L2 representations of the idiom concepts.

The final stage of the treatment was a memory card game in which the learners had to match Japanese and English idiom counterparts. This mode of instruction was selected on the grounds that memory games require observation and concentration, which promote learning. Furthermore, the fact that this instruction took the form of a game had a positive affective value, which is also known to benefit learning (McPherron & Randolph, 2014). Finally, the multiple encounters with the target items during the activity, and the fact that students played several cycles were also considered to be conducive to learning. Earlier research showed that every encounter with a lexical item leaves a memory trace (Tremblay, Baayen, Derwing, & Libben, 2008). Therefore, a memory card game instruction format was expected to increase the probability that the phrases would be remembered.

2.5.3 Post-treatment evaluation

One month after the last treatment session, the learners were given again another idiom comprehension test in which they had to match English idioms with their Japanese counterparts. The test was announced to the students beforehand. After the test, the students were asked once more to rate the semantic transparency of English idioms.

2.6 Scoring and analysis

Data analysis involved the following stages:

First, the average familiarity ratings and standard deviations for each

idiom as well as the set as a whole were calculated. As explained earlier, the target idioms were rated on a scale of 1 to 5, where 1 indicated that the idiom had been encountered many times and 5 meant it had not been met before. Idioms for which the mean values were between 1.0 and 2.39 were classified as high-familiarity idioms. Those with average ratings between 2.40 and 3.69 were classified as phrases of moderate-familiarity idioms. Idioms with the ratings between 3.70 and 5.0 were considered as low-familiarity idioms.

The next step was the analysis of the students' response on the idiom comprehension task. For each correctly interpreted idiom, the students got one point. In order to establish whether there was any relationship between the students' self-reported familiarity ratings and their understanding of the target idioms, for each idiom familiarity range (*high*, *moderate* and *low*), the percentage of correctly interpreted idioms was calculated.

The third stage was the analysis of the learners' transparency ratings. As mentioned earlier, the idioms were rated on a scale of 1 to 5, with 1 meaning '*the easiest to guess*' (i.e., the most transparent) and 5 meaning '*the most difficult to guess*' (i.e., the least transparent). The classification of the responses was the same as for the frequency ratings. Idioms for which the mean values were between 1.0 and 2.39 were classified as high-transparency idioms. Those with average ratings between 2.40 and 3.69 were classified as moderate-transparency idioms. Idioms with the ratings between 3.70 and 5.0 were considered low-transparency idioms. Transparency ratings were then compared with frequency ratings in order to establish whether exposure affected learners' perceptions of

idiom decomposability. A possible relationship between transparency judgments and idiom comprehension was also examined by calculating the percentage of correctly inferred idioms in each transparency bracket.

The analysis of the post-treatment data consisted of the following three stages. First, the students' responses on the idiom comprehension post-test were analyzed. For each correctly matched idiom the students were given one point. After that the students' transparency ratings were examined. The procedures were the same as those used for the pre-treatment data analysis. Finally, a t-test for paired samples was conducted in order to assess the statistical significance of the differences between the pre-treatment and post-treatment transparency ratings.

3. Results

3.1 Familiarity ratings

The recorded familiarity ratings showed that most idioms were unfamiliar to the students. On a scale of 1 to 5, where 1 meant that the idiom was encountered many times before and 5 meant that it was 'never' before encountered, the average rating was 4.64 (SD=0.47). In the group of the 27 idioms that had different lexical make-ups in L1 and L2, as many as 26 phrases were placed in the low familiarity bracket. There were five idioms with the average rating of 5, which meant that all learners felt they had never seen or heard them before. The phrases in question are '*let bygones be bygones*', '*to rest on one's laurels*', '*to charge what the traffic will bear*', '*have a lot of nerve*', and '*different strokes for different folks*'. No idioms were classified as high-familiarity phrases, and only one idiom, '*a piece of cake*', was placed in the moderate familiarity group, with

the average rating of 2.76 (SD = 1.58).

Among the three idioms for which the same surface representations exist in Japanese, only '*love is blind*' was rated as moderately familiar (M = 2.90; SD = 1.61). The other two idioms, like other phrases, were rated as low-familiar phrases. The average familiarity rating for '*silence is golden*' was 4.09 (SD = 1.11), while the mean value for '*pearls before swine*' was 4.95 (SD = 0.21). Descriptive statistics for familiarity ratings, transparency ratings, and comprehension test scores for all target idioms can be found in Table 1 in Appendix 3.

3.2 Interpretations of idiom meanings

While the students were familiar with most words in the target phrases, the following items were reported as new: *pod*, *bygones*, *swine*, *laurels*, *tacit*, *strokes*, *folks* and *bumpkin*. These items were explained to those students who asked for clarification.

For the 27 idioms, with different lexical make-ups in English and Japanese, out of 621 possible responses (27 idioms X 23 students) 378 responses were collected. This means that the students attempted to define the idioms' meanings 60.8% of the time. Approximately one quarter of these attempts (96 out of 378 responses) were successful. The idioms for which the largest number of correct interpretations was recorded were '*time flies like an arrow*' (13), '*tacit understanding*' (13), '*two heads are better than one*' (11), '*a piece of cake*' (11) and '*different strokes for different folks*' (11).

For the three idioms with Japanese equivalents of the same

compositional make up, the attempted response rate was slightly higher (66.7%). The accuracy rate was 56.5%. The number of correct responses by idiom was as follows: '*silence is golden*' (6), '*pearls before swine*' (7) and '*love is blind*' (13).

3.3 Transparency ratings

Idiom transparency, defined as the level of difficulty with which idiom meaning could be inferred through the compositional analysis of the phrases, was rated on a scale of 1 to 5, with 1 meaning *very easy* and 5 meaning *very difficult*. The mean transparency rating was 4.11 (SD = 0.66), which suggests that most students felt that it was difficult to infer the meanings from the lexical constituents of the phrases. Out of 27 idioms, five were classified as phrases of moderate-transparency and twenty-two received low-transparency ratings. The idiom that was judged as the most transparent was '*tacit understanding*' with the average transparency rating of 2.67 (SD = 1.24). Other idioms that were judged as moderately transparent were '*two heads are better than one*' (M = 2.76; SD = 1.30), '*a piece of cake*' (M = 2.86; SD = 1.39), '*different strokes for different folks*' (M = 2.95; SD = 1.47) and '*time flies like an arrow*' (M = 3.10; SD = 1.41). Idioms that were judged as least transparent were '*to charge what the traffic will bear*' (M = 4.81; SD = 0.51), '*a drop in the bucket*' (M = 4.68; SD = 0.65), '*to be up to one's eyeballs in work*' (M = 4.68; SD = 0.65), and '*partners in crime*' (M = 4.68, SD = 0.57). Standard deviation values suggest a higher level of agreement for the idioms that were judged as semantically opaque than for the phrases that were rated as more semantically transparent.

For the three idioms for which more than one matching phrase was

identified in Japanese, the transparency ratings were as follows: *'silence is golden'* (M = 3.64; SD = 1.26), *'pearls before swine'* (M = 3.55; SD = 1.30), and *'love is blind'* (M = 4.05; SD = 1.24).

3.4 Relationship between idiom familiarity and idiom comprehension

As almost all target idioms were classified as low-familiarity phrases, the hypothesis about the impact of exposure on idiom comprehensibility could not be tested by examining the proportion of correctly defined idioms in each familiarity bracket, as originally planned. A closer analysis of students' responses on individual idioms was conducted instead, but the data did not suggest association between the two variables. For example, the idiom *'love is blind'*, for which the largest number of correct interpretations was recorded, received higher familiarity ratings than most other idioms. However, it was not clear whether correct interpretations resulted from exposure, compositional analysis or positive transfer from L1. Other idioms for which comprehension scores were relatively high such as *'tacit understanding'* and *'two heads are better than one'*, received low familiarity ratings. Sometimes, even some of the idioms that were rated 5 on the familiarity scale, that is, the idioms that the students reported to have never seen before were interpreted correctly. For example, one student defined the idiom *'let bygones be bygones'* as *'let it go'*. Further, *'to rest on one's laurels'* was translated as 名誉に休む (meiyo ni yasumu = 'to rest on one's glory'). Another student explained it as 'to stop working hard'. For the idiom 'to charge what the traffic will bear', one student provided a Japanese idiomatic equivalent 足元を見る (ashimoto wo miru = 'to look at someone's feet'), and *'to have a lot of nerve'* was paraphrased as *'to have big courage'*. A particularly interesting idiom was *'different strokes for different folks'*. None of the

students reported encountering this idiom before and both *strokes* and *folks* were identified as new words. However, after the meanings of the two words were clarified, as many as nine students offered a correct Japanese equivalent 十人十色 (juuninn to iro = 'ten people , ten colours'), and one student explained the idiom meaning as '*There is no same person/thing*'. There were also instances where students reported hearing or seeing an idiom many times, like in the case of the expression '*a piece of cake*', but did not even attempt to define the phrase's meaning. In short, the data obtained did not indicate that the learners' perceptions of their exposure to the figurative idioms matched their ability to interpret these idioms correctly, or that exposure to figurative language is essential for correct idiom comprehension. However, a small sample size and skewed distribution of familiarity ratings warrant caution in data interpretation.

3.5 Relationship between idiom familiarity and idiom transparency ratings

The relationship between idiom familiarity and transparency judgments was investigated using the Pearson product-moment correlation coefficient. The analysis did not indicate a statistically significant relationship between the two variables ($r = .16$, $df = 572$, $p > .05$). The correlation was not observed when the analysis was conducted on the subset of the three idioms that had the semantic and structural equivalents in the learners' L1 either ($r = .13$, $df = 63$, $p > .05$). Further, a closer examination of familiarity ratings for the idioms that the learners judged to be moderately transparent did not indicate that their transparency judgments were influenced by their perceptions of exposure to the phrases. In the main group of 27 target idioms, out of 6 idioms which were classified as moderately transparent, only one was

reported to be moderately familiar. Similarly, in the subset of the three idioms with two semantic equivalents in the students' L1, the two phrases which were judged as moderately transparent received low familiarity ratings, while the third phrase was judged to be moderately familiar but of low transparency. In summary, the results suggest that the frequency with which an L2 idiom is encountered is not a reliable indicator of the level of its semantic transparency for the learners.

3.6 Idiom comprehension and transparency ratings

In order to examine a possible relationship between transparency intuitions and the accuracy of learners' comprehension, the idioms were ranked based on their transparency scores and the number of correct definitions was individually calculated for each idiom (see Table 2 in Appendix 3).

The results of the analysis showed that the average number of correct responses increased with the perceived idiom transparency. While in the low-transparency bracket the number of correct responses varied between 0 and 5 (0% ~21.7%), for the phrases that were judged to be of moderate transparency the number of correct definitions was between 11 and 13 (47.8%~56.5%). However, as only five idioms fitted in the latter category, it is difficult to draw conclusions about the possible relationship between transparency intuitions and idiom comprehensibility.

For the three idioms that shared the same structural properties with their semantic equivalents in the learners' L1, the number of correct responses varied between 26% and 56.5%. Contrary to expectations, the students' comprehension of the idiom that was rated as low-transparent

was better than their comprehension of the two phrases that were placed in the moderately transparent bracket. However, considering the possibility of language transfer, and the fact that the data were based on only three idioms, these observations were of limited value for the discussion in question.

3.7 Post-treatment idiom comprehension

Ensuring that the learners understood the target idioms was considered to be essential in order to answer the question about the possible effect of knowledge of idiom meaning on transparency intuitions in their second language. The post-treatment comprehension test scores showed that almost all students learned the meaning of the target phrases. For the main target group of the 27 idioms, the accuracy rate was 94.5% and for the subset of three idioms, with the cross-lingual lexico-semantic equivalents, the comprehension rate was 100%. High scores can be attributed to the rich lexical instruction that the learners received in class, the test format that required only the recognition of the target idioms rather than ability to produce their form or use them in context, and the fact that the students had been pre-warned about the test.

3.8 Post-treatment idiom transparency ratings

The post-treatment transparency judgments indicated a change in the learners' intuitions about idiom transparency. All target phrases were judged as more transparent than during the pre-treatment stage, with the mean score of 2.84 (SD=0.69). Nine idioms were judged to have high transparency, fourteen were considered moderately transparent, and four idioms were classified as low-transparent phrases. The idiom that was judged as the most transparent was '*two heads are better than one*',

with the average rating of 1.78 (SD=1.17), and the idiom that was judged to be the least transparent was '*to charge what the traffic will bear*', with a mean transparency score of 4.43 (SD = 0.79). The three idioms with formal equivalents in the learners' L1 were all judged to be of high-transparency. Descriptive statistics for post-treatment transparency judgments for all target idioms can be found in Table 1 in Appendix 3.

3.9 A comparison of pre-treatment and post-treatment transparency ratings

In order to assess statistical significance of the differences between the pre-test and post-test, a paired samples t-test was conducted. The results showed that observed differences were statistically significant ($t(26) = -14.5, p < 0.01$). The eta-squared statistic (.89) indicated a large effect size.

4. Discussion

The present study was conducted to provide further insight into sources of idiom transparency intuitions by examining the possible impact that the factors such as idiom exposure and knowledge of idiom meaning may have on the transparency judgments of second language learners. Unlike earlier studies, which examined transparency judgments of L2 learners in comparison to the native speakers (e.g., Abel, 2003; Skoufaki, 2009; Boers & Webb, 2015) or other language learners with similar backgrounds (e.g., Steinel et al., 2007), this study looked into developmental changes in the transparency intuitions of one group of L2 learners.

The hypotheses of the study were that idiom familiarity would have a positive effect on both idiom comprehension and idiom transparency

judgments, and that idiom transparency would increase with the learners' deeper understanding of figurative meanings. The data collected only supported the third hypothesis. Knowledge of idiom meaning did make learners perceive the target phrases as more transparent. However, their self-reported level of exposure to the target phrases was not found to be a good predictor of either their ability to interpret figurative meanings, nor their judgments of semantic transparency of idiomatic phrases.

The results obtained provide support for Keysar and Bly's (1995, 1999) hypothesis that transparency intuitions are, to a large extent, influenced by language users' knowledge of stipulated figurative meanings. All idioms in the study were rated as more transparent after the instructional treatment, including the phrases for which the learners had given completely opposite definitions at the pre-treatment stage. For example, the idiom '*to save the day*' was rated as more transparent by the learner who had translated it as '*to save the time*' as well as by the learner who had interpreted it as '*to waste the time*'. While these findings do not automatically exclude the possibility that conceptual metaphors, world knowledge or idiom-inherent features, such as their lexical make-up, play a role in transparency judgments, the data obtained strongly suggest that idioms are likely to be perceived as more *sensible* when language users are familiar with their figurative meanings. It is possible that better knowledge of idiom meanings facilitates the mapping of the figurative interpretations on the word constituents resulting in the phrases being perceived as more transparent. The fact that Keysar and Bly's (1999) study involved native speakers and that the same pattern of behaviour was observed in intermediate-level second language

learners may indicate that mapping the elements of stipulated figurative meanings onto the lexical constituents of the phrases is one of the universal strategies that the human mind employs during idiomatic language processing.

It is important to note, however, that the data obtained do not suggest a bidirectional relationship between transparency intuitions and idiom comprehension. While knowledge of idiom meaning increases the perceptions of idiom transparency, transparency judgments do not seem to be a reliable predictor of the learners' ability to infer the figurative meanings of idiomatic phrases. Although the majority of the idioms were rated as non-transparent prior to the instructional treatment, the students were still able to correctly infer the meaning of about 15% of the target phrases.

Further, the data also did not suggest that idiom familiarity ratings were a good indicator of the learners' levels of understanding of L2 idioms. The majority of the learners reported to have had little or no exposure to the target phrases and yet, they were able to interpret some of them correctly. On the other hand, some of the phrases that the learners claimed to have seen or heard before were misinterpreted or simply skipped at the comprehension test.

There may be several possible reasons behind these discrepancies. One is that the learners' subjective judgments of their exposure may not reflect their real exposure to the phrases. It is well known that some language learning is implicit and incidental (Ellis, 1994; Nation, 2001), and it is possible that learners may have been exposed to some of the idioms

without remembering such exposure. This could be one explanation for the students' ability to produce L1 idiomatic equivalents for phrases such as '*to charge what the traffic will bear*', which they claimed to have never heard before.

It is also possible that the students had noticed some of the target idioms in the input and that their familiarity ratings truthfully reflected their exposure to the phrases, but the exposure alone was not sufficient to leave the memory traces which were strong enough to facilitate the recall of idiom meaning. According to the levels-of-processing theory, originally proposed by Craik and Lockhart (1972), the formation of memory traces depends on the amount of cognitive effort invested during the processing. Deeper, more elaborate processing is likely to result in better information recall, while shallow processing leaves weak memory traces susceptible to a quick decay. If learners only heard or saw the target idioms, but did not have an opportunity for their semantic processing or meaningful analysis, the memory traces were likely to be fragile and susceptible to loss.

Finally, it is possible that the learners really did not have much exposure to figurative usage, but that for some idioms, a compositional analysis and world knowledge may be sufficient for correct interpretation. Bortfield (2003) observed that people are able to sometimes comprehend unfamiliar idioms from other cultures thanks to the shared schematic representations of embodied human experience. This may explain, for example, a comparatively large number of correct definitions for the idiom, '*two heads are better than one*' despite its low familiarity ratings.

The data also indicated little correlation between familiarity ratings and transparency judgments. One reason may be the above-discussed dependence of idiom transparency ratings on the learners' knowledge of conventional meanings. It may be that only after learners' have acquired stipulated meanings that they use a number of strategies to justify the connections between figurative interpretations and the surface form of the phrases. Before figurative meanings are learnt, exposure alone seems to have little impact on transparency intuitions.

The study also provides a small amount of interesting data with regard to the possible role of language transfer in familiarity and transparency judgments and idiom interpretation in the second language. The three idioms for which semantic and compositional equivalents were identified in the learners L1 received somewhat higher transparency ratings than the rest of the set, but the activation of their L1 equivalents was not automatic. Sometimes the learners misinterpreted figurative meanings and sometimes they simply left the questions unanswered. None of the phrases were initially judged to have high transparency and one of the phrases (*'love is blind'*) was even judged to have low transparency. These findings suggest that language transfer may have a limited role in transparency judgments. The data obtained is in line with the observations of some of the earlier studies (e.g., Kellerman, 1979) about learners' hesitation to transfer figurative expressions from the mother tongue. However, with a small sample of only three idioms, it is difficult to draw conclusions and more research is needed in this regard.

5. Conclusion

While there is a large body of experimental research that concerns

different dimensions of idiom variability and their effects on idiom comprehension in L1, relatively little is known about how these dimensions may affect idiom processing in L2. This study provides some light on the interplay between L2 idiom comprehension and idiom familiarity and transparency. The study was pedagogically motivated and learner-centered. Idiom familiarity and transparency were explored from the learners' perspective and treated as subjective categories subject to language development.

The results of the experiment suggest that idiom familiarity and transparency intuition do not present reliable indicators of the learners' ability to infer the meaning of the figurative expressions. On the other hand, knowledge of idiom meaning does seem to have a strong effect on the learners' perceptions of idiom transparency, which suggests that idiom transparency intuitions in L2 may be motivated by the learners' level of understanding of figurative language more than the inherent properties of the idiomatic phrases or possibly their underlying conceptual metaphors. The study also raises some questions about the role that language transfer may play in L2 idiom comprehension and the formation of learners' transparency and familiarity judgments. It is hoped that the results of this small, exploratory study will spark new, large-scale research projects to further explore the factors that may influence idiom processing and comprehension in the second language.

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Appendix 1: Target idioms

1. ごますり (sesame grinding) = apple polishing
2. 言わぬが花 (not saying is the flower) = silence is golden
(*alternative form: 沈黙は金 (silence is golden))
3. 瓜二つ (two halves of a cucumber) = two peas in a pod
4. 水に流す (to set things adrift) = let bygones be bygones
5. 水を打ったよう (as if scattered water) = you can /could hear a pin drop
6. 焼け石に水 (water on a red hot stone) = a drop in the bucket
7. 猫も杓子も (even cats and rice ladles) = every Tom, Dick and Harry
8. 猫に小判 (a gold coin before a cat) = pearls before swine
(*alternative form: 豚に真珠 (pearls before swine))
9. 猫の手も借りたい (willing to accept even the helping hand of a cat) = to be up to one's eyeballs in work
10. 同じ穴の貉 (badgers from the same hole) = partners in crime
11. 泣き面に蜂 (the bee [stings] when you're already crying) = when it rains, it pours
12. あばたもえくぼ (pockmarks are [seen as] dimples) = love is blind
13. あぐらをかく (to sit cross-legged) = to rest on one's laurels
14. 足もとを見る (to look at someone's feet) = to charge what the traffic will bear
15. 足を洗う (to wash one's feet) = to go straight
16. 頭がさがる (one's head is bowed) = to take (one's) hat off to
17. 以心伝心 (reading each other's heart) = tacit understanding
18. 心臓が強い (strong-hearted) = have a lot of nerve
19. 十人十色 (ten people, ten colours) = different strokes for different folks
20. 三人寄れば文珠の知恵 (Three people together have the wisdom of a Buddha)
= two heads are better than one
21. すし詰め (packed like sushi) = jam-packed
22. おのぼりさん (one who journeys to the capital) = country bumpkin
23. わたりに舟 (a boat to cross on) = to save the day
24. 朝飯前 (before the morning meal) = a piece of cake
25. ばかばかしななきゃ治らない (only death can cure a fool) = once a fool, always a fool
26. 重箱の隅を「ようじ」でつつく (to pick at the corners of a food-box [with a toothpick]) = to split hairs
27. 光陰矢のごとし (light and darkness fly like an arrow) = time flies like an arrow
28. 窓際族 (the window tribe) = to be kicked upstairs
29. 袖の下 (under one's sleeve) = under the table
30. 有終の美を飾る (to decorate the ending with beauty) = to end a career on a high note

2. Those brothers are two years apart, yet they're as alike as *two peas in a pod*. The other day I mistook one for the other, and I was embarrassed.

_____ very similar especially in appearance

_____ using gifts or flattery to get promotion or favour

Task II (“Coach-student” pairwork activity)

Student A

Part One

Instructions: Read the following Japanese idioms to your partner and ask him/ her to give you a corresponding idiomatic expression in English. Check your partner's answers against the model answers below.

Japanese idioms	<i>Model Answers</i>
ごますり	<i>apple polishing</i>
言わぬが花	<i>silence is golden</i>
瓜二つ	<i>two peas in a pod</i>
水に流す	<i>let bygones be bygones</i>
水を打ったよう	<i>you can /could hear a pin drop</i>

Part Two

Instructions: Listen to your partner and provide English idiomatic equivalents of the idioms you hear.

SWITCH!

Task III: Memory card game

Card samples



POST-TREATMENT EVALUATION

Task I (Comprehension test)

Instructions: Match English idioms with their Japanese counterparts. There are EIGHT Japanese idioms which do not have English counterparts in this list.

同じ穴の貉	_____	1. <i>two heads are better than one</i>
猫に小判	_____	2. <i>jam-packed</i>
水に流す	_____	3. <i>country bumpkin</i>
焼け石に水	_____	4. <i>a piece of cake</i>
瓜二つ	_____	5. <i>to split hairs</i>

Task II (Transparency ratings)

The procedures were the same as at the pre-treatment stage.

Appendix 3: Familiarity and transparency ratings and comprehension test data

Table 1. Descriptive statistics for familiarity, pre-treatment and post-test transparency ratings

	Idiom	Familiarity ratings		Pre-treatment transparency ratings		Post-treatment transparency ratings	
		Mean	SD	Mean	SD	Mean	SD
1.	Apple polishing	4.82	0.50	4.00	1.15	2.65	1.15
2.	Two peas in a pod	4.95	0.21	4.05	1.17	2.70	1.43
3.	Let bygones be bygones	5.0	0.0	4.27	1.32	3.35	1.47
4.	You can / could hear a pin drop	4.86	0.47	4.45	1.10	2.87	1.39
5.	A drop in the bucket	4.91	0.29	4.68	0.65	3.39	1.16
6.	Every Tom, Dick and Harry	4.91	0.29	4.41	1.14	2.74	1.42
7.	Be up to one's eyeballs in work	4.91	0.43	4.68	0.65	3.30	1.43
8.	Partners in crime	4.81	0.87	4.68	0.57	2.87	1.18
9.	When it rains, it pours	4.81	0.51	4.57	0.75	2.26	1.21
10.	To rest on one's laurels	5.0	0.0	4.57	0.68	3.35	1.07
11.	To charge what the traffic will bear	5.0	0.0	4.81	0.51	4.43	0.79
12.	To go straight	4.43	1.03	4.52	0.87	3.04	1.36
13.	To take (one's) hat off to	4.95	0.22	4.29	0.85	3.13	1.32
14.	Tacit understanding	4.81	0.40	2.67	1.24	2.0	1.35

15.	Have a lot of nerve	5.0	0.0	4.33	1.02	2.43	1.16
16.	Different strokes for different folks	5.0	0.0	2.95	1.47	2.13	1.14
17.	Two heads are better than one	4.75	0.64	2.76	1.30	1.78	1.17
18.	Jam-packed	4.38	1.16	4.05	1.07	2.17	1.03
19.	Country bumpkin	4.86	0.48	4.48	1.17	3.26	1.25
20.	To save the day	4.48	0.98	4.62	0.74	3.74	1.10
21.	A piece of cake	2.76	1.58	2.86	1.39	1.91	1.24
22.	Once a fool, always a fool	4.33	1.11	3.90	1.14	2.0	0.90
23.	To split hairs	4.62	0.74	4.48	0.81	3.78	1.13
24.	Time flies like an arrow	4.29	1.27	3.10	1.41	2.09	1.08
25.	To be kicked upstairs	4.24	1.34	4.67	0.66	3.87	1.06
26.	Under the table	4.10	1.09	4.43	0.81	3.13	1.32
27.	To end a career on a high note	4.38	1.02	3.71	1.31	2.30	1.22
	AVERAGE	4.64	0.47	4.11	0.66	2.84	0.69

	Idioms with dual representations in the learners' L1	Familiarity ratings		Pre-treatment transparency ratings		Post-treatment transparency ratings	
28.	Silence is golden	4.09	1.11	3.64	1.26	1.74	0.86
29.	Pearls before swine	4.95	0.21	3.55	1.30	2.04	1.07
30.	Love is blind	2.90	1.61	4.05	1.24	2.09	1.04
	AVERAGE	3.98	1.03	3.75	0.27	1.96	0.19

Table 2. Idiom transparency ratings and comprehension test scores at the pre-treatment stage (N=23)

Idiom	The average transparency ratings at the pre-treatment stage	The number of correct responses in the pre-treatment comprehension test
To charge what the traffic will bear	4.81	1
A drop in the bucket	4.68	1
Be up to one's eyeballs in work	4.68	1
Partners in crime	4.68	3
To be kicked upstairs	4.67	0
To save the day	4.62	2
When it rains, it pours	4.57	1
To rest on one's laurels	4.57	2
To go straight	4.52	0
Country bumpkin	4.48	2
To split hairs	4.48	1
You can / could hear a ping drop	4.45	5
Under the table	4.43	0
Every Tom, Dick and Harry	4.41	2
Have a lot of nerve	4.33	1
To take (one's) hat off to	4.29	2
Let bygones be bygones	4.27	1
Two peas in a pod	4.05	1
Jam-packed	4.05	4
Apple polishing	4.00	0
Once a fool, always a fool	3.90	5
To end a career on a high note	3.71	2
Time flies like an arrow	3.10	13
Different strokes for different folks	2.95	11
A piece of cake	2.86	11
Two heads are better than one	2.76	11
Tacit understanding	2.67	13

Idioms with the structural equivalents in learners' L1	The average transparency ratings at the pre-treatment stage	The number of correct responses in the pre-treatment comprehension test
Silence is golden	3.64	6
Pearls before swine	3.55	7
Love is blind	4.05	13