
Learning Phrasal Verbs Through Conceptual Metaphors: A Case of Japanese EFL Learners

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Recent research in cognitive linguistics has shown that idiomatic phrases are decomposable and analyzable and that the individual words in idiomatic phrases systematically contribute to the overall figurative interpretations. This cognitive linguistic view suggests that enhancing awareness of conceptual metaphors embedded in the individual words may help second language students to learn idioms. This study examined whether enhancing awareness of orientational metaphors of particles facilitates acquisition of phrasal verbs by Japanese English as a foreign language (EFL) students. The students in the control group learned a set of phrasal verbs through traditional instruction, whereas those in the experimental group received the same input through a cognitive linguistic approach. The students in both groups were then asked to fill in the missing adverbial particles of the phrasal verbs. Results showed that the students in the experimental group performed significantly better than those in the control group, implying that when the target idioms are not stored as a unit in learners' mental lexicon, learners who are aware of conceptual metaphors may rely on metaphorical thought to produce an appropriate adverbial particle. This highlights the implications that EFL learners need to be explicitly taught about the notion of orientational metaphors before they can actively comprehend and produce appropriate phrasal verbs.

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In English, there are several elements of vocabulary and grammar that are extremely difficult for learners of English as a foreign language (EFL) to master or comprehend. Phrasal verbs are perennial sources of confusion, and they constitute major obstacles on the path to proficiency in English (Boers, 2000b; Kurtyka, 2001; Littlemore & Low, 2006), in spite of the fact that they are the most frequently occurring idiomatic strings of language in both spoken and written English (Crutchley, 2007). This confusion appears to be true especially for learners who lack phrasal verbs in their mother tongue (Neagu, 2007),

such as Japanese-speaking students. Research into language typology has shown that conceptual structures are lexicalized differently in different languages. For example, in English the core schema of the path trajectory (movement into, out of, etc.) is encoded by a satellite to the main verb, such as a particle and preposition, whereas it is encoded by the verb itself in Japanese (Conventry & Guijarro-Fuentes, 2008; Talmy, 2008), as in *go through* versus *tooru*, and *go across* versus *koeru* (Matsumoto, 1996, 1997). It is reported that the satellite-framed language speakers tend to provide richer descriptions of path trajectories than the verb-framed language speakers (Cadierno, 2008; Slobin, 1997). These findings, underpinned by the typological difference between English and Japanese, imply that the chief problem with comprehending phrasal verbs for Japanese EFL learners may exist in their lack of awareness of the orientational meaning(s) of particles and their failure to fully understand *why one particle is used in preference to another*. Many Japanese EFL learners may thus perceive phrasal verbs as being purely idiomatic, inseparable, and arbitrarily used, because they may not be aware of the special constructional contribution of the original particle to the whole structure. It is no wonder that even students at advanced levels of learning often show a poor command of phrasal verbs and tend to use fewer phrasal verbs and many more single-word verbs than native speakers executing similar tasks (Neagu, 2007; Rudzka-Ostyn, 2003).

It is precisely in presenting a systematic semantic view of phrasal verb constructions—to what extent the individual parts contribute to the meaning of the whole—that the output of cognitive linguistic research since the 1980s has played a significant role (Crutchely, 2007; Levorato & Cacciari, 1999; Morgan, 1997). The cognitive linguistic view of phrasal verbs emphasizes that particles are orientational metaphors that have much to do with spatial orientations derived from the experiences of the human body, such as *up-down*, *in-out*, *front-back*, *on-off*, *deep-shallow*, and *central-peripheral* (Lakoff & Johnson, 1980) and that an in-depth understanding of these *spatial* connotations of the particles, that is, the cognitive image schema (Morgan, 1997) will assist in the acquisition of phrasal verbs by the learners. For example, Kurtyka (2001) argues that strong and well-organized *visual* support would put an end to *incidental imagery* that results in poor retention and that promoting the development of visualization skill (the ability to form mental representations of verbal and nonverbal input) would enhance storage and retention. This claim by Kurtyka assumes that enhanced mental visualization of orientational metaphors would help learners to process metaphorical extensions easily, that is, to expand literal meaning to metaphorical meaning, without merely memorizing the meanings. Kovecses and Szabo (1996) also suggest that the more important element in phrasal verbs is usually the adverbial constituent, because

phrasal verbs normally have the primary stress laid on the adverb as in *hold up* and *make out* (p. 346), and therefore enhancing the awareness of orientational metaphors in the adverbial particles would facilitate the acquisition of phrasal verbs by the learners. Similarly, Stefanowitch and Gries (2005) emphasize the importance of awareness of the orientational metaphors, pointing out that particles in phrasal verbs provide rich imagery and schematic content, whereas verbs are overwhelmingly *light verbs*, words that have very little imagery or schematic content. The novelty of the cognitive approach to teaching and learning phrasal verbs thus lies in the assumption that the ability to arrive at mental generalizations is based on explicit awareness about orientational metaphors.

In line with the cognitive linguistic framework, research into acquisition of idioms by EFL learners has indicated that enhanced awareness of the conceptual metaphors behind figurative expressions leads the learners to use the strategy of visualizing idioms in terms of conceptual metaphors and, consequently, involves them in deep cognitive processing, which increases the probability of memory storage (Boers, 2000a, 2000b, 2004; Cooper, 1999; Irujo, 1986, 1993; Johnson & Rosano, 1993; Kovecses, 2001, 2002, 2003; Kovecses & Szabo, 1996; Littlemore, 2001, 2003; Littlemore & Low, 2006; Neagu, 2007). The most relevant to this study is research into learners' comprehension of phrasal verbs undertaken by Kovecses and Szabo (1996) and Boers (2000b). In the study by Kovecses and Szabo, university students (first language [L1] = Hungarian) were asked to fill in the missing adverbial particles in the contexts of sentences. The phrasal verbs used in the study were *bow down*, *cheer up*, *bring up*, *chew up*, *run down*, *use up*, *hold up*, *put down*, *turn up*, *look up*, *cast down*, *make up*, *break down*, *sell up*, *set down*, *keep down*, *wind up*, *pick up*, and *turn up*. Before attempting the fill-in-the-blank test, students in the control group were instructed to memorize 10 phrasal verbs, whereas those in the experimental group received explanations about several hundred phrasal verbs, grouped according to the orientational metaphors, such as COMPLETION IS UP (*eat up*, *give up*) and HAPPY IS UP (*cheer up*, *feel up*). The results indicated that students in the experimental group surpassed those in the control group. Kovecses and Szabo therefore argued that students need to be explicitly taught the notion of conceptual metaphors.

Likewise, in Boers's (2000b) study, university students (L1 = French) were asked to fill in the missing phrasal verbs in a passage designed for reading practice (cloze test). The phrasal verbs used in the study were *put off*, *cope with*, *drop out*, *show up*, *feel up to*, *take up*, *go on*, *be fed up with*, *set up*, *break down*, *make up*, *figure out*, *get on with*, *give in*, *point out*, *follow through with*, *turn out*, *track down*, and *find out*. The control group received explanatory notes on phrasal verbs as listed alphabetically in a dictionary, whereas the experimental group received the same input plus the explanation about orientational metaphors of adverbial

particles. The results showed that students in the experimental group were more apt to correctly fill in the blanks than those in the control group. The results of Boers's study appear to confirm the claim by Kovecses and Szabo (1996) that enhancing metaphor awareness will facilitate an analysis of the orientational metaphors of the particles by the learners and thus help them to learn phrasal verbs through imagery processing rather than by mere memorization.

Although these two studies offer significant insight into the relationship between awareness of orientational metaphors and learning of phrasal verbs, the findings need to be followed up with more empirical studies in different contexts focusing on students with different L1 backgrounds. This is because second language (L2) acquisition is affected by the differences between the target language and any other language that has been previously acquired (Odlin, 1989). This study thus investigates whether, and to what extent, enhancing the awareness about orientational metaphors helps Japanese EFL learners to learn phrasal verbs. As indicated earlier, because of the typological differences between English and Japanese (i.e., satellite-framed vs. verb-framed languages), Japanese EFL learners can be expected to show a comparatively lower awareness of the metaphorical force of particles and hence confront more difficulties in mastering phrasal verbs than learners whose native language is typologically close to English. Taking this into consideration, the cognitive linguistic approach may go beyond memorization strategy and be of immense benefit to Japanese EFL learners in learning idioms. This may certainly be true of other language background students whose L1 is verb framed, such as Korean, Turkish, Tamil, and Polynesian (Cadierno, 2008).

TRADITIONAL VERSUS COGNITIVE LINGUISTIC VIEWS OF IDIOMS

A long-standing belief in the field of linguistics and psychology has been that idiomatic phrases are dead metaphors whose figurative meanings cannot be determined through an analysis of the meanings of their individual units (Gibbs, 1991, p. 613). The traditional theories of idiomatic phrases entail the assumption that idiomatic phrases are noncompositional (Gibbs, 1990) and are therefore learned as giant lexical units (Nippold, 1998, p. 106). The link between figurative meanings and the expression created by a speaker is "arbitrary" and unsystematic, and hence there is no particular reason why different phrases generate any particular meaning (Boers, 2004).

Many of these long-standing beliefs about idiomatic phrases, however, have been questioned by cognitive linguists since the early 1980s. Recent

research in cognitive linguistics has shown that the individual words in many idiomatic phrases systematically contribute to the overall figurative interpretations (Crutchley, 2007; Dirven, 2001; Gibbs, 1990; Gibbs & O'Brien, 1990; Lakoff, 1987; Langacker, 1987; Levorato & Cacciari, 1999; Morgan, 1997; Neagu, 2007; Nippold & Taylor, 1995; Rudzka-Ostyn, 2003). According to this cognitive linguistic view, idiomatic phrases are decomposable and analyzable, and their meanings are not arbitrary but motivated, in the sense that the speakers recognize a few basic relationships between the words in the idioms and their overall figurative interpretations (Boers, 2004). For example, when speakers judge idioms such as *let off steam*, they can find a specific relationship between the components *let off* and *steam* with their figurative references "release" and "anger" (Gibbs & O'Brien, 1990, p. 423). Similarly, phrasal verbs such as *eat up* can be interpreted with both the literal meaning of "eat" and the orientational metaphor of COMPLETION IS UP. The implications of the cognitive linguistic view of idiomatic phrases are significant not only for the study of figurative language but also for understanding the relationship between thought and language (Boers, 2004).

Analyzability and compositionality of idiomatic phrases have been manifested in a series of experiments in both L1 and L2 contexts. In L1 settings, psychological studies on young children have shown that younger children rely on contextual information in interpreting unknown idioms, yet, as children become older, they are more liable to interpret the meaning of metaphor-based idioms based on the semantic relation between the connotation of the individual words and the overall figurative interpretation, even if noncontextual cues are provided (Crutchley, 2007; Levorato & Cacciari, 1999; Nippold & Taylor, 1995). These studies report that semantic analyzability (Levorato & Cacciari, 1999) of idiomatic phrases is also evident in the attempt of adults to interpret figurative meanings. Gibbs and O'Brien (1990) have reported that native speakers have a tacit knowledge of the metaphorical basis for idioms and that their intuitions or mental images for these idioms are consistent. The consistency in the interpretations of idiomatic phrases shows that the conventional meanings are constrained by conceptual metaphors and that figurative expressions can be systematically organized according to their underlying metaphoric themes: for example, LOVE IS FIRE in the case of the sentence "The *fire* between them finally *went out*," and IMAGINATION IS FIRE in the case of the sentence "The painting *set fire* to the imagination of the composer" (Kovecses & Szabo, 1996, pp. 331–332). This also suggests that popular knowledge of idiomatic meanings is motivated by the conceptual metaphor that people use in relation to the domains referred to by the idioms (Gibbs, 1990; Gibbs & O'Brien, 1990). In the book *Metaphors*

We Live By (1980), Lakoff and Johnson (1980) outline a series of conceptual metaphors, suggesting that the popular conceptual system—the manner in which people think, their experiences, and their everyday activities—is fundamentally metaphorical in nature (p. 3).

APPLICATION TO L2 IDIOM ACQUISITION

The paradigm of cognitive linguistics appears appealing in the L2 idiom-acquisition process, because it carries the potential to stimulate alternative and complementary strategies for learning L2 idiomatic phrases as opposed to blind memorization or rote learning, which are suggested by the traditional view (Boers, 2004). Over the past two decades, the cognitive linguistic approach to teaching and learning idioms has been explored by applied linguists in terms of

- the effect of the manner of instruction for enhancing awareness about metaphors on the retention of idiomatic phrases (Boers, 2000a, 2000b; Kovecses & Szabo, 1996)
- types of strategies that L2 learners use to comprehend metaphor-based idioms (Cooper, 1999)
- factors that shape the difficulties in comprehending and producing metaphor-based idioms, such as the levels of proficiency, cognitive style, and frequency of exposure (Cooper, 1999; Johnson & Rosano, 1993)
- the effect of L1 on the comprehension and production of L2 metaphors (Deignan, Gabrys, & Solska, 1997; Irujo, 1986; Kovecses, 2003; Littlemore, 2001, 2003)
- the relationship between metaphoric competence and communicative language ability (Littlemore & Low, 2006).

In addition, conceptual syllabi that enhance metaphoric awareness in classrooms have been proposed (Andreou & Galantomos, 2008; Boers & Demecheleer, 1998; Lazar, 1996; Lindstromberg, 1996; Yi-Wu, 2002).

Overall, these studies have identified the following findings:

- An enhanced metaphoric awareness helps students to recognize the source domain of figurative expressions and its associated inference patterns and to retain unfamiliar idiomatic phrases (Boers, 2000a, 2000b; Kovecses & Szabo, 1996).
- L2 learners use a variety of strategies in a trial-and-error approach—guessing from the contexts and using the literal meaning of the individual words—to interpret L2 idiomatic phrases, and their comprehension processes are not identical to those discussed in the theories of L1 idiom comprehension (Cooper, 1999).

- Language proficiency is not a major factor in determining metaphor interpretation, suggesting that metaphor interpretation may be more of a conceptual than a linguistic task (Johnson & Rosano, 1993) and that difficulties in metaphor interpretation may reside in the salience of the idioms and frequency of exposure (Cooper, 1999).
- L2 students interpret metaphors in ways that support their own value systems and the schemata shaped in their L1 (Littlemore, 2003); however, they have difficulties in interpreting the L2 idiomatic phrases that have no translation equivalent in their L1 (Deignan, Gabrys, & Solska, 1997; Irujo, 1986).
- Metaphoric competence is an intrinsic feature of all aspects of communicative competencies and it involves grammatical competence, textual competence, illocutionary competence, and socio-linguistic competence, and thus metaphor instruction needs to be an indispensable feature of all the skills that L2 learners need to master (Littlemore & Low, 2006).

Although the results of these studies are promising because they provide new insights into the theories and practices of teaching and learning L2 idioms, the scope of the experiments in these studies appears to be limited, and there are many apparent topics that need to be further examined so that the effect of enhanced metaphor awareness on L2 idiom learning can be verified. The subject that particularly needs to be further explored is phrasal verbs, because, since Boers (2000b), little attention has been thus far paid to phrasal verbs, in spite of the anecdotal evidence that phrasal verbs constitute a notoriously difficult part of the lexicon for L2 learners. Furthermore, the acquisition of phrasal verbs by L2 learners needs to be examined in relation to their native languages. Boers (2000b) suggests that English learners from places with a *distant language* may face different types of comprehension problems because of the different lexicalization patterns inherent to their languages. The typological difference between Japanese and English is apparent, as discussed earlier, in the use of the particle as an orientational metaphor in the phrasal verb.

THE PRESENT STUDY

The purpose of the present study is, therefore, to assess whether and to what extent Japanese EFL learners are aware of the meanings of orientational metaphors embedded in particles that form a phrasal verb. More specifically, the study aims to investigate whether enhancing the awareness of students regarding orientational metaphors through the cognitive linguistic approach plays a role in helping students to learn

phrasal verbs. The other aim of this study is to examine whether the positive effect of metaphor awareness on retention of phrasal verbs by learners, as identified by Kovecses and Szabo (1996) and Boers (2000b), can be replicated with students in an EFL setting, at a Japanese university.

Participants

The participants were 115 Japanese university students enrolled in the English Language Program at the School of Liberal Arts in a private university in Tokyo, Japan. They were all freshmen when the study was conducted. They had studied English as a foreign language for at least 6 years, mostly in formal educational settings. Their average Test of English as a Foreign Language score was 450.

Phrasal Verbs

The students were presented with a set of phrasal verbs in class for the purpose of the experiment. The phrasal verbs including *up*, *down*, *into*, *out*, and *off* were selected: *break down*, *burst into*, *call off*, *calm down*, *dry up*, *enter into*, *figure out*, *get off*, *keep off*, *knock down*, *leave out*, *make out*, *open up*, *pay off*, *rule out*, *run into*, *show up*, *take off*, *turn down*, *turn into*, and *use up*. These phrasal verbs, according to Lakoff and Johnson (1980), instantiate the orientational metaphors MORE VISIBLE/ACCESSIBLE IS UP (*open up*, *show up*); COMPLETION IS UP (*dry up*, *use up*); LOWERING/DECREASING IS DOWN (*break down*, *calm down*); DEFEATING/SUPPRESSING IS DOWN (*knock down*, *turn down*); CHANGING IS INTO (*burst into*, *turn into*); INVOLVING/MEETING IS INTO (*enter into*, *run into*); OUT IS REMOVING/EXCLUDING (*rule out*, *leave out*); OUT IS SEARCHING/FINDING (*figure out*, *make out*); OFF IS DEPARTURE/SEPARATION (*get off*, *take off*); OFF IS STOPPING/CANCELLING (*call off*, *pay off*); OFF IS PREVENTION/PROTECTION (*keep off*). These 21 phrasal verbs were selected because (1) they frequently occur in many idiom textbooks for Japanese high school students; (2) it is therefore expected that they are already familiar to the university students; and (3) they are thus expected to be stored as noncompositional units in the mental lexicon of the student. The instruction aimed to *reactivate* their familiarity with these phrasal verbs, because it was anticipated that these two-word verbs might not be firmly stored in the students' long-term memory because, by comparison to second language instruction contexts, foreign language contexts are unlikely to fully expose students to these verbs. Further, learners in foreign language contexts are likely to undergo a generally slower pace of development and to achieve overall lower levels of ultimate attainment (Ortega, 2003, p. 512).

Treatment

The students were divided into two treatment groups: a control group (i.e., traditional approach, $N = 56$) and an experimental group (i.e., cognitive semantic approach, $N = 59$). Both groups were judged to be similar in terms of English proficiency level, because the students in both groups were placed into the same-level English classes based on their performance on the in-school placement test. In addition, their classroom exposure before the study was similar, because the classes shared the same goal, the same content, and the same textbook.

The students in the control group were presented with the phrasal verbs based on the traditional method. The instructor told the students what each of the phrasal verbs meant in Japanese by simply translating it. The students were then instructed to memorize the phrasal verbs using a checklist. In the checklist, the 21 phrasal verbs were listed alphabetically together with their Japanese translations (Appendix A). In contrast, the students in the experimental group were presented with the 21 phrasal verbs through the cognitive approach. The meanings of these 21 phrasal verbs were explained based on the orientational metaphors embedded in the adverbial particles. The instructor emphasized the manner in which the orientational metaphor of the adverbial particle contributed to the meaning of the whole string rather than simply translating it. The students were then instructed to memorize the meanings of these phrasal verbs with reference to a checklist, where the phrasal verbs were categorized under the headings of their underlying orientational metaphors, together with their Japanese translations (Appendix B). The students were instructed to pay attention to these orientational metaphors in learning the phrasal verbs. The entire procedure, including explanation by the instructor and memorization by students, lasted 10 minutes for both groups.

Task

After instructing the students and allowing them to study on their own, the teachers took back the checklists, and the students in the two groups engaged in a task. The task asked the students to fill in the missing adverbial particles of 30 phrasal verbs in the context of a sentence (Appendix C). The sentences were derived from the *Longman Dictionary of Phrasal Verbs* (Courtney, 1983), *Collins Cobuild Dictionary of Phrasal Verbs* (Collins COBUILD, 1989), *NTC's Dictionary of Phrasal Verbs and Other Idiomatic Verbal Phrases* (Spears, 1993), and the Google search-engine.

On the basis of the study designed by Kovecses and Szabo (1996), in the completion task designed for analysis, the researcher included phrasal

verbs to which students were both exposed and unexposed in their instruction class before taking up the test. Thus the first half of the sentences (1–15) included the phrasal verbs to which the students had been exposed in class before the task, and the second half of the sentences (16–30) included the phrasal verbs to which the students had not been exposed in class before undertaking the task. The rationale for trying out items to which the students were not exposed before, as remarked by Kovecses and Szabo, was to observe whether, and to what degree, the students could generalize metaphorical thought when they encountered unfamiliar phrasal verbs. To this end, the phrasal verbs unexposed to the students were selected based on the following criteria:

- They are of infrequent occurrence in most idiom textbooks for Japanese high-school students.
- It was therefore anticipated that they are not stored in the mental lexicon of the student as idiomatic phrases or fixed expressions and that the students could not retrieve the meanings directly from memory.
- The students were thus expected to rely on metaphorical thinking to produce an appropriate adverbial particle so that the whole sentence made sense.

The researcher did not give a pretest to make sure that the students really did not know the phrasal verbs, because giving a pretest may have given rise to a facilitating effect (i.e., giving a test may have led to giving knowledge).

The effectiveness with which the task was completed was determined by the number of correct answers in the first half (that included the exposed category of phrasal verbs) and in the second half (that included the unexposed category of phrasal verbs) of the questions. The following hypotheses were proposed before analysis of the results:

- 1) The experimental group and the control group will perform equally well on the exposed list of phrasal verbs (i.e., the first half of the sentences [1–15]), given that these phrasal verbs were already likely to be equally familiar to the students in both groups. That is, when the target idioms are already stored as a unit in the mental lexicon of the learners, the debate about whether the instructional approach is traditional or cognitive semantic may be inconsequential.
- 2) The experimental group and the control group will perform equally unsuccessfully on the unexposed category of phrasal verbs (i.e., the second half of the sentences [16–30]), if memorization plays a role in only helping the students to learn the phrasal verbs. Because the lexical unit cannot be matched with a known interpretation, comprehension fails when learners meet an unknown idiom.

3) If enhancing metaphor awareness plays a role, the students in the experimental group will perform better than those in the control group, on the unexposed category of phrasal verbs. That is, when the target idioms are not stored as a unit in the mental lexicon of the learners, they make an attempt to understand an unfamiliar string by relying on metaphorical thought.

RESULTS

The descriptive statistics (means, standard deviations, and number of participants) regarding the performance of students in the completion task are reported in Table 1. The table shows that both groups executed the task drastically better for the exposed phrasal verbs (mean [*M*] = 12.80 for the control group; *M* = 12.19 for the experimental group) than for the unexposed ones (*M* = 4.02 for the control group; *M* = 5.27 for the experimental group). The mean difference between the groups is larger for the unexposed items (*M* = 1.25) than for the exposed items (*M* = 0.61). The results can be seen in Figure 1 and Figure 2.

The statistical analyses of the research question were based on repeated-measure analysis of variance (ANOVA) with a 2 (items) × 2 (groups) design. The alpha level was set at 0.05. The repeated-measure ANOVA for the completion task (Table 2) shows that a significant effect was found for exposure: *F*(1, 113) = 1,064.27, $\eta^2 = 0.90$ (*p* < 0.05). Table 2 also demonstrates that a significant interaction effect was found for exposure × group: *F*(1, 113) = 15.10, $\eta^2 = 0.12$ (*p* < 0.05). As depicted in Table 3, no significant effect was found for groups, *F*(1, 113) = 1.61, $\eta^2 = 0.01$.

Table 4 describes how the students in both groups performed differently with reference to the exposed and unexposed categories of phrasal verbs.

TABLE 1
Means and Standard Deviations of Exposed and Unexposed Items Answered Correctly

Descriptive statistics				
	Group	Mean	<i>SD</i>	<i>N</i>
Exposed items	Control	12.80	2.118	56
	Experimental	12.19	1.645	59
	Total	12.49	1.907	115
Unexposed items	Control	4.02	1.794	56
	Experimental	5.27	1.874	59
	Total	4.66	1.933	115

Note. *SD* = standard deviation.

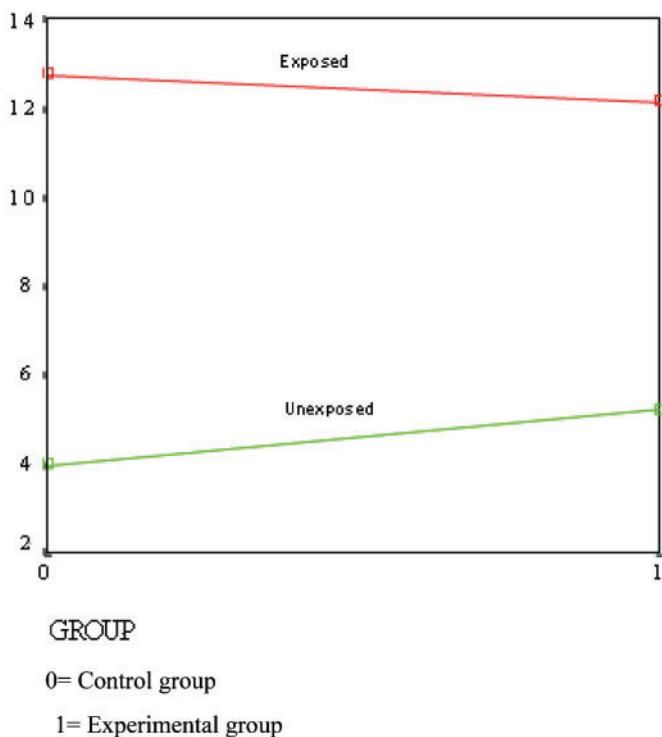


FIGURE 1. Student performance across groups

The mean difference between the control and experimental groups in the unexposed items category ($M = 1.25$) is statistically significant ($p < 0.05$), whereas the mean difference between the groups in the exposed items category ($M = 0.62$) is not. These results are also illustrated in Table 5. Table 5 indicates that the experimental group performed significantly better than the control group in the unexposed category of phrasal verbs: $F(1, 113) = 13.40, \eta^2 = 0.11$ ($p < 0.05$), whereas the difference between the two groups is not statistically significant in the exposed list of phrasal verbs: $F(1, 113) = 3.06, \eta^2 = 0.03$.

Overall, the results appear to support Hypotheses 1 and 3 and reject Hypothesis 2. Concerning Hypothesis 1, which pertains to the exposed category of phrasal verbs, the results indicate that the student performance in both groups is fairly high and that there is no significant difference between the groups. This result appears to support the hypothesis that, when the target idioms are already stored as a lexical unit in the mental lexicon of the learners, whether the instructional approach is traditional or cognitive semantic may not make a difference because the learners have more opportunities to associate a string with a

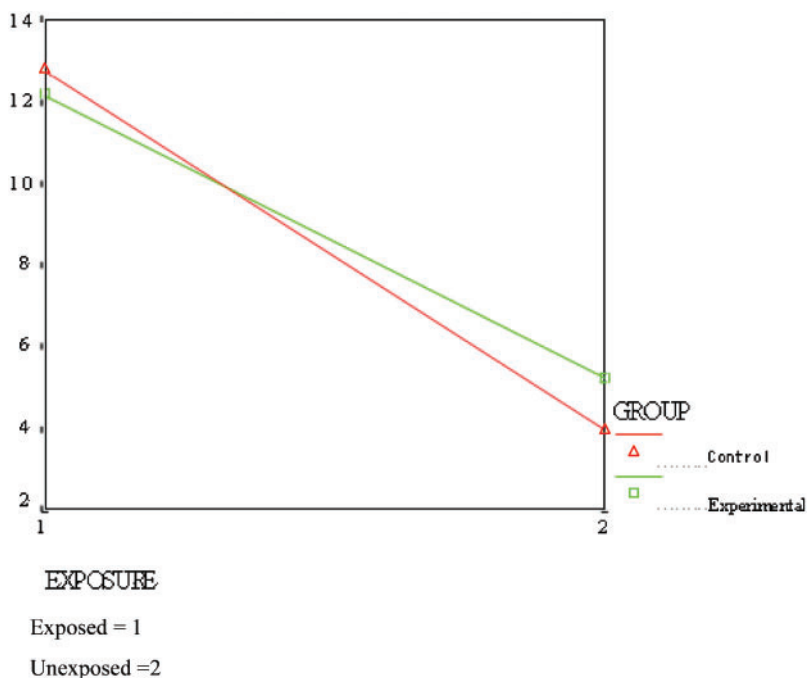


FIGURE 2. Student performance across exposures

nonliteral meaning and are able to retrieve the meaning of the whole string from their memory without having to process the string compositionally. Concerning Hypotheses 2 and 3, which pertain to the unexposed category of phrasal verbs, the results suggest that the students in the experimental groups performed significantly better than those in the control group. This appears to support the hypothesis that, when the target idioms are new to learners and not stored as a lexical unit in their mental lexicon, learners who are aware of orientational

TABLE 2
Analysis of Variance for the Performance of Students as Affected by Exposure and Groups

Tests of within-subjects contrasts							
Measure 1							
Source	Exposure	Type III sum of squares	df	Mean square	F	Significance	Partial η^2
Exposure	Linear	3,541.319	1	3,541.319	1,064.273	0.000	0.904
Exposure \times group	Linear	50.258	1	50.258	15.104	0.000	0.118
Error (Exposure)	Linear	376.002	113	3.327			

TABLE 3
Analysis of Variance for the Performance of Students as Affected by Group

Tests of between-subjects effects						
Measure 1						
Transformed variable: Average						
Source	Type III sum of squares	df	Mean square	F	Significance	Partial η^2
Intercept	16,879.901	1	16,879.901	4,670.158	0.000	0.976
Group	5.814	1	5.814	1.609	0.207	0.014
Error	408.429	113	3.614			

TABLE 4
Analysis of Variance for Exposure \times Group

Pairwise comparisons							
Measure 1							
						95% Confidence interval for difference ^a	
	(I) Group	(J) Group	Mean difference (I – J)	SE	Significance ^a	Lower bound	Upper bound
Exposed	Control	Experimental	0.617	0.353	0.083	–0.082	1.316
	Experimental	Control	–0.617	0.353	0.083	–1.316	0.082
Unexposed	Control	Experimental	–1.253*	0.342	0.000	–1.932	–0.575
	Experimental	Control	1.253*	0.342	0.000	0.575	1.932

Note. Based on estimated marginal means. *The mean difference is significant at the 0.05 level.
^aAdjustment for multiple comparisons: Bonferroni.

TABLE 5
Analysis of Variance for Exposure (Exposed Versus Unexposed)

Univariate tests							
Measure 1							
Exposure		Sum of squares	<i>df</i>	Mean square	<i>F</i>	Significance	Partial η^2
Exposed	Contrast	10.942	1	10.942	3.062	0.083	0.026
	Error	403.788	113	3.573			
Unexposed	Contrast	45.131	1	45.131	13.398	0.000	0.106
	Error	380.643	113	3.369			

Note. Each *F* tests the simple effects of the group within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

metaphors are more likely to rely on metaphorical thought to produce an appropriate adverbial particle. In other words, when students are unable to retrieve the meaning of the whole string from memory, they transfer the cognitive approach to the task by shifting their attention to the orientational metaphors and by generalizing metaphoric thought to other phrases, in an attempt to recreate the meaning of the whole sentence. Thus the results of the experiment provide evidence for the claim that learning phrasal verbs can be greatly aided by increasing the awareness of orientational metaphors than by encouraging mere memorization.

DISCUSSION

The results of this study offer support to the suggestion by Kovecses and Szabo (1996) that the cognitive semantic approach is successfully transferable when language learners try to tackle novel phrasal verbs. The findings can be further interpreted with respect to (a) attention or awareness and learning of foreign languages; (b) strategies for teaching and learning idioms; (c) the relationship between enhanced metaphor instruction and the L1 of learners; and (d) metalinguistic knowledge and its relationship to instructional effectiveness in L2 learning.

Concerning metaphor awareness, there is a possibility that the students may have implicitly internalized the orientational meanings of adverbial particles before this experiment, without recognizing that they are actually metaphors, given that they had learned English for at least 6 years in formal education. However, as Kovecses and Szabo (1996) argue, the mere presence of conceptual metaphors in the mind does not appear to be sufficient for their active use in the learning of a foreign language (p. 351). That the students who learned phrasal verbs through orientational metaphors performed significantly better than those who learned them through memorization highlights the implications that students need to be explicitly taught about the notion of orientational metaphors before they can actively comprehend appropriate phrasal verbs. The enhanced metaphor-awareness technique may fit within the pedagogical movement related to attention and awareness in foreign language learning. Incidental learning without awareness is both possible and effective, but paying attention is facilitative if adult learners are to acquire mastery over a foreign language (Schmidt, 1990).

The cognitive linguistic approach thus appears to serve as an alternative and complementary strategy for teaching and learning idioms. In the cognitive linguistic view, idioms are decomposable and analyzable, and their meanings are not arbitrary but are motivated by conceptual systems that exist in the minds of people. Cognitive linguistic

insights hence assume that enhanced metaphor awareness will help students infer the meaning of an idiom on the basis of the information conveyed by the conceptual metaphors of the constituent words and will encourage them to figure out the meanings of unfamiliar idioms independently before turning to the teacher or a dictionary for help (Boers, 2004). Developing the ability to transfer the strategies of visualizing idioms in terms of conceptual metaphors—*metaphoric extensions* of the meaning of the word (Littlemore & Low, 2006, italics added)—is the mainstay of the cognitive linguistic approach. The metaphoric extension skills will prompt learners to identify metaphoric themes underlying the constituent words of the idiom and to categorize them independently. This will ultimately help learners to learn idioms faster and retain them longer. The metaphoric extensions appear to explain the reason the students in the experimental group outperformed those in the control group in this study.

This study is perhaps the first to examine the effect of metaphor awareness on learning phrasal verbs in a Japanese EFL context. The findings will therefore have serious implications for teaching phrasal verbs to students from verb-framed L1 backgrounds. In these verb-framed languages, as discussed earlier, the path is characteristically encoded in the verb, not in the satellites. L2 learners with these L1 backgrounds are likely to perceive phrasal verbs as nonanalyzable strings of words or fixed expressions whose meanings are arbitrarily stipulated. Consequently, learners may not be fully aware of the orientational meanings of particles and may have difficulty comprehending and producing novel phrasal verbs, such as “Come right back down out from up in there!” as in Talmy’s (1985) example of a parent calling to a child in a treehouse (Slobin, 1997, p. 438). This typological difference between L1 and L2 may allow learners to learn phrasal verbs through memorization, without processing them compositionally. In contrast, the cognitive semantic approach assigns a fundamentally different importance to teaching, because in this approach it really is about explaining the *meaning* embedded within the idiom. The cognitive linguistic approach focusing on meaning—enhanced awareness of orientational metaphors—may therefore need to be conceived as a complementary technique for L2 learners to learn phrasal verbs. This may also help in their acquisition of not only phrasal verbs but also other related lexical items, such as phrasal (compound) nouns and adjectives, where particles also contribute their meaning to the whole (e.g., *dropout*, *fallout*, and *outstanding*) (Neagu, 2007). In the teaching of phrasal verbs in EFL textbooks, dividing phrasal verbs into groups according to underlying orientational metaphors and discussing interpretations of each idiom in terms of semantic compositionality will be effective in sensitizing learners to the metaphorical force of satellites and in helping

them to use metaphorical thought in an attempt to understand and produce novel phrasal verbs.

The findings also need to be discussed in terms of metalinguistic knowledge and its instructional effectiveness in L2 development, as one of the reviewers suggested. Existing research indicates that metalinguistic knowledge impacts L2 learners' performance, yet the operationalization of the construct of metalinguistic knowledge has varied across studies (Roehr, 2007). Typically, metalinguistic tests judge a learner's ability to explain and correct L2 errors (e.g., Renou, 2000), but several recent discussions of metalinguistic knowledge have drawn attention to learners' language analytic ability—their capacity to identify rules of language and extrapolate linguistic patterns (Skehan, 1998). In this study, metalinguistic knowledge is operationalized as a learner's ability to identify and explain the metaphoric meaning of the satellite particles in phrasal verbs and to make semantic extrapolations, and the metalinguistic knowledge helps the learning of L2 phrasal verbs. The findings indicate that learners' language analytic ability may constitute an important component of their metalinguistic knowledge at least in the process of learning L2 idioms.

Although the findings of this study have significant implications for teaching and learning phrasal verbs in EFL contexts, these findings should be followed up with research that reconfirms the present results with varied materials and contexts.

First, concerning the treatment, neither the instruction nor the materials (i.e., the checklist) were part of normal classroom procedures. The instruction and materials used for the treatment were specifically created for the experiment. To further underscore the effectiveness of enhanced metaphor awareness instruction for the acquisition of phrasal verbs by EFL learners, future research would need to use authentic materials that are fully integrated into the curriculum. Related to this is the need to investigate the long-term effects of enhanced metaphor awareness instruction. In this experimental setting, the learning of phrasal verbs by students was measured immediately after they received the instruction and engaged in their self-study. Therefore, the experiment only assessed their short-term memory and can only conclude that actively thinking of particles as metaphoric facilitated the short-term learning of phrasal verbs. Future study should conduct delayed posttests to assess the long-term effects of enhancing the basics of metaphor awareness for learning phrasal verbs.

Second, the metaphor-based instruction employed in this study focused on the phrasal verbs that the learners were expected to already be familiar with. This was designed to examine their ability to generalize the task through metaphoric thinking, but there may not really be an effect of instructional tasks. It would be more meaningful to consider how learners deal with the two instructional approaches—traditional

and cognitive linguistic—when these approaches are used to present unfamiliar phrasal verbs. In other words, future research needs to use unfamiliar phrasal verbs not just to evaluate their ability to generalize metaphoric thinking but also to examine the effectiveness of these two instructional approaches on learners' acquisition of the verbs.

Last, the present results were based on only 30 phrasal verbs, including *into*, *out*, *up*, *down*, and *off*. Given that adverbial particles have polysemous meanings, some meanings are more prototypical or central and easier to understand than others. Conversely, some are more figurative or abstract and require more metaphoric thinking. Consequently, further research needs to additionally investigate whether the results of this study also hold good for different orientational metaphors embedded in the same adverbial particles. Future research should also focus on a different set of adverbial particles.

Ever since Lakoff and Johnson (1980), the importance of metaphor in language has been highlighted in the field of cognitive linguistics. Nevertheless, the application of the cognitive linguistic view to L2 acquisition is still underdeveloped, and the ability of L2 learners to comprehend and use metaphors is still not acknowledged as representing a core ability (Kellerman, 2001; Littlemore & Low, 2006). The reason the development of metaphoric competence has not fully permeated into mainstream pedagogical practice may be that metaphor is still felt by teachers to be a poetic and literary device irrelevant to L2 learning. Teachers may perceive idioms to be distinct from metaphors and hence conclude that idioms can just as easily be taught without any reference to metaphors (Littlemore & Low, 2006, p. 269) in the same manner as any other word. However, the results of this study pose the question as to whether learners are actually able to process idioms, novel idioms in particular, without metaphoric thinking. Metaphors and languages are inseparable, and hence metaphor awareness is important in language education. Without being explicitly taught the *meaning* embedded within the idiom, learners may not be able to successfully engage in metaphoric thinking. The results of this study imply that this mental engagement in metaphoric thinking can facilitate the learning of novel idiomatic expressions. Metaphoric thinking or metaphoric competence (Low, 1988) is important, especially for processing phrasal verbs, given that new ones can constantly be created.

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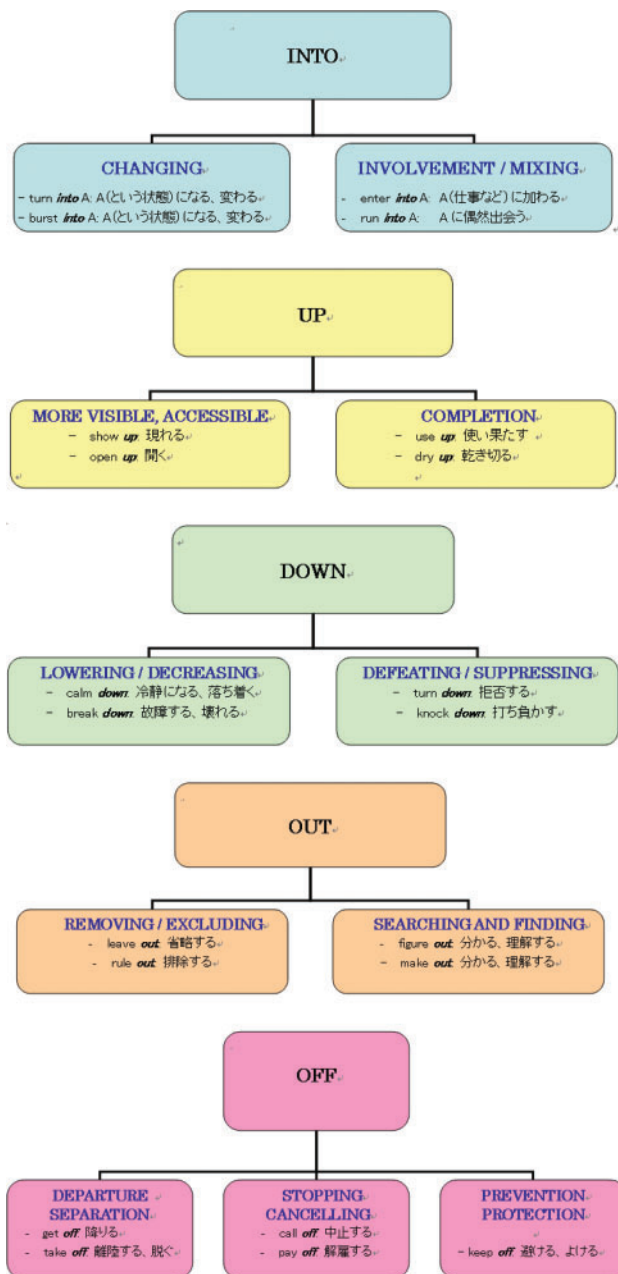
Appendix A

The Checklist Distributed to the Control Group

■ break down	故障する
■ burst into A	A(という状態)になる、変わる
■ call off	中止する
■ calm down	落ち着く、冷静になる
■ dry up	乾き切る
■ enter into A	A(仕事など)に加わる
■ figure out	分かる、理解する
■ get off	降りる
■ keep off	避ける、よける
■ knock down	打ち負かす
■ leave out	省略する
■ make out	分かる、理解する
■ open up	開ける
■ pay off	解雇する
■ rule out	排除する
■ run into	偶然出会う
■ show up	現れる
■ take off	離陸する、脱ぐ
■ turn down	拒否する
■ turn into A	A(という状態)になる、変わる
■ use up	使い切る

Appendix B

The Checklist Distributed to the Experimental Group



Appendix C

Completion Task

Fill in the blanks with the words given below so that the sentence will make sense.

up, down, into, out, off

1. When she heard the news, she burst () tears.
2. No one can figure () how the fire started.
3. I wonder why my application for the job was turned (). Is that because I'm a woman?
4. Do you know how many people showed () at the party last night?
5. I see the bus driver grabbing a passenger and making him get () the bus.
6. She was so shocked by the accident that it took her hours to calm ().
7. When the temperature drops, this gas turns () a solid.
8. The cricket team had to call () the game because of rain.
9. One or two scenes in the play were left () of the performance.
10. Keep () the grass.
11. The coal industry is running down, as coal supplies are used ().
12. Airlines found it cheaper to pay up rather than enter () a prolonged dispute.
13. My car broke () again, so I've had to take the bus to work every day this week.
14. 100 workers will be paid () when the factory closes next week.
15. The police have stated that they cannot rule () murder in the case of the girl's death.
16. He was determined to bring () the issue at the meeting.
17. Your essay topic is too broad. You should narrow it ().
18. Police have sealed () the street where the gunman is hiding.
19. I hope this seedling grows () a fine mango tree.
20. I tried to wash () the stain on the table cloth.
21. When we have time, we need to go () this question more thoroughly.
22. These figures don't add () to the right total!
23. It was all I could do to keep my temper () when I saw the boys treating the dog badly.
24. Everyone threw themselves energetically () studying English.
25. The speakers were well-informed, but I was able to argue them ().
26. Rachel lost her balance and jumped () the diving board instead of diving.
27. Every day, scientists seek () new ways to cure the diseases that affect millions of people around the world.
28. He has a wit with which to fend () such criticism.
29. That story is so complicated. Please boil the long story () to a few sentences so I can grasp the whole picture more clearly.
30. It's no good waiting for something to turn (). You have to take action.